Partnerships a key to Sandia's future, Labs leaders say in their first 'State of the Labs' address

Leaders cite technical work, community involvement, and economic impact

By Bill Murphy

Lab News Staff

Sandia's future is tied to how effectively it builds partnerships with industry, universities, and other federal agencies, Labs President and Director C. Paul Robinson and Deputy Director John Crawford said in their first "State of the Labs" address last week.

In remarks to 200 business, community, and elected leaders at the Technology Transfer Center at Sandia/New Mexico, Paul said the Labs' core competencies, developed to solve technical problems related to nuclear weapons work, have tremendous potential application in nonweapons areas. While weapons-related work (broadly defined to include disarmament, nonproliferation, and arms control) will remain at the heart of Sandia's mission, Paul said, reductions in defense spending demand that the Labs expand its scope of work and its pool of research partners.

"We need to make the technical capabilities of the laboratories . . . available to a wider set of government agencies."

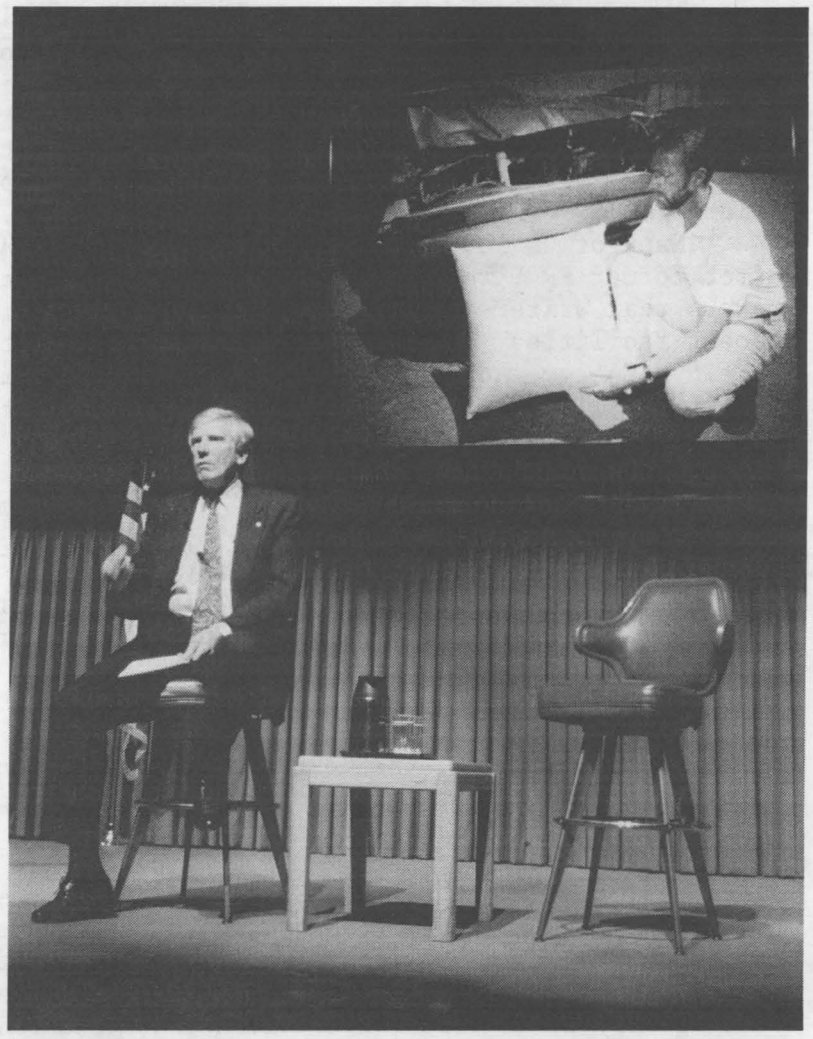
"We need to make the technical capabilities of the laboratories, which are fairly unique, available to a wider set of government agencies," he said. "For example, we are now doing significant work for the Justice Department. The polls indicate that the American people consider crime to be the number one problem in the country. We believe there are some contributions we can make to help combat that problem.

"Our future is really going to depend upon the same thing that has served us so well in the past, and that is taking our key science and technology capabilities and applying them to important problems. We want to try and add value which no one else could do in a similar way."

In this first "State of the Labs" address of their administration, Paul and John discussed the scope of Sandia's technical work, its involvement in the community, its successes with business and government agency partners, and its contributions to the regional economy. (Paul will offer a similar address at Sandia/California on March 7, this time teamed with Tom Hunter, VP 8000.)

With photos and videos showcasing Labs work providing a visual backdrop,

(Continued on page 4)



GETTING TECHNICAL — Labs Director C. Paul Robinson cites the "revolutionary" automobile airbag developed by Sandia and CRADA partner Precision Fabrics Group as an example of the excellent technical work accomplished by the Labs during 1995. (Photo by Mark Poulsen)

DOE ranks Labs' performance 'Excellent'

Sandia has received an overall "Excellent" rating from DOE for its performance in FY95.

The appraisal involved Sandia, DOE, and DOE's Albuquerque Operations Office (AL). They jointly developed milestones in identified programmatic, operational, and administrative areas. Sandia's performance was then appraised against these milestones. Some additional areas not covered by the milestones were also appraised by DOE/AL and DOE Headquarters.

Four areas had been selected for evaluation: institutional management performance, programmatic performance, operations support performance, and administrative performance. In each of the areas Sandia was rated Excellent.

Sandia's overall performance was also rated Excellent. An excellent rating, according to a letter received Feb. 8 by Sandia President C. Paul Robinson from DOE/AL Manager Bruce Twining, indicates that "DOE expectations were exceeded. We are pleased with Sandia's performance in many areas," the letter says.

Says the appraisal's executive summary: "The overall rating reflects a strong positive response by Sandia management in support of DOE planning initiatives, quality initiatives, and customer focus as well as continued excellence in laboratory programs."

"I'm certainly pleased with our customer's high rating of us and I congratulate each and every Sandian for their contributions," says Paul. "Both we and our DOE sponsors know that we have much room for improvement — in really using quality methods and achieving 'best business practices.' Let's keep our eyes on continuous improvement!"

Sandia National Laboratories

Sandia LabNews

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Prototype computer program models dynamics of US economy

Aspen adapts, incorporates randomness of real world

The cold calculations of one of the world's fastest supercomputers are feeding data about warm human beings into an economic model to an extent never achieved before.

There is hope it will help better predict the effect of new economic programs and policies.

The computer program Aspen, devised at Sandia, is designed to combine staples of macroeconomics — interest rates, trade policies, legal restrictions, and so on — with data on the savings and spendings of individual moms and pops, wherever in the US they may be.

The latter type of data, part of microeconomics, for technical reasons has never been combined with macroeconomics for the US economy as a whole, though economists have speculated the combination would result in more accurate forecasts.

Says economics Nobel Prize winner Lawrence Klein, "It's a promising way of modeling the economy. No one has had the commitment and hardware to do it properly." The idea of using real-world data about households and other small economic agents "was a technique proposed in the 1960s when computers were in their infancy and data availability was much less. Now, computational problems

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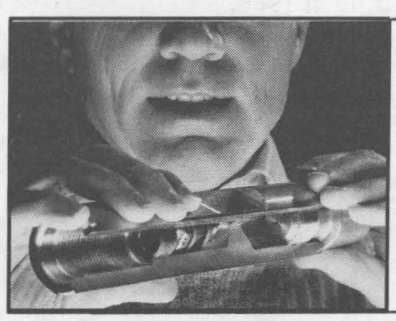

This & That

Lab News to relocate soon – The *Lab News* and other writers and staff from Public Relations and Communications Center 12600 will move several weeks from now into Bldg. 811. (The move is currently scheduled for the weekend of March 16-17). If you can find our offices now (in mobile offices 172-173), you can find our new offices; we're moving about 100 feet south. Bldg. 811 is the new single-story red brick and stucco structure at the northwest corner of Bldg. 800. It will house Media Relations Dept. 12621, Employee Communications Dept. 12622, Community Relations Dept. 12671, and several other PR folks, including yours truly.

Many of us lovingly call 811 the Langheim Memorial Building, after former PR Director Jerry Langheim, who somehow convinced the powers that writers are humans, too (at least human-like), and need decent facilities. (Jerry is now VP of Communications for Lockheed Martin's Energy and Environment Sector.) I hope my many friends (both of them) will come visit me in my new office, but not at the same time. I'm allowed only one visitor's chair.

* * *

Realignment: a job well done – The announcement that Sandia had reduced the number of "impacted employees" to zero, without layoffs, was welcome news (*Lab News*, Feb. 16). Many groups and people teamed up to make this happen, including the Department of Energy [which provided funds for the Voluntary Separation Incentive Program (VSIP)], Sandia's Human Resources Division (especially the folks in Staffing Dept. 3535), and numerous personnel specialists and managers throughout the Labs. But, as Labs President and Director Paul Robinson emphasized in his original announcement, the most credit goes to those employees who volunteered to leave the Labs or switch jobs – especially the ones who really preferred to keep working in their current jobs.

So, is everybody happy? Don't be silly – it's impossible to please everyone in these situations. Some Sandians, for example, still believe that the same basic objectives could've been achieved with a Labs-wide retirement "sweetener." Perhaps. I'm not writing to argue that point one way or the other; Sandia management decided for reasons it stated some time ago not to go that route. Given that decision, it seems to me that the realignment plan, combined with the VSIP, worked well. Realignment and some downsizing *without layoffs:* In today's work environment, I'm sure many other groups envy our situation.

* * *

March into 800 by end of March – Several folks have asked when the remodeling work on the entryway to Building 800 (main administrative building, along with 801/802) will be completed. Cynthia Figueroa-McInteer (7903) says it should be a done deal by the end of March (see related photos on page 9).

* * *

Weird-name-and-address time coming up – It's been a while since I listed noteworthy misspellings and misaddresses on mail coming to Sandia National Laboratories and Albuquerque. I have several interesting ones in the file. If you have more, send them to me at the mail stop or e-mail address below, and I'll print the "best worst ones" soon.

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

Sandia LabNews

Sandia National Laboratories

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Contributors:

Ken Frazier, Acting Editor.....844-6210
John German, Writer.....844-5199
Howard Kercheval, Writer.....844-7842
Bill Murphy, Writer.....845-0845
Randy Montoya, Head Photographer.....844-5605
Mark Poulsen, Photographer/Production.....844-0421
Janet Carpenter, Publications Administrator.....844-7841
Nancy Campanozzl, Secretary.....844-7522
Philip Higgs, Writing Intern.....284-3195
Barry Schrader, California Reporter.....510/294-2447
Nancy Garcia, California Reporter.....510/294-2932

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LOCKHEED MARTIN

Former California VP Bernie Biggs dies

Burnard S. "Bernie" Biggs, former Vice President of Sandia/California from 1961 to 1968, died Feb. 22 at a nursing home in San Rafael, Calif., at the age of 89.

He was with the Bell System, including 10 years at Sandia, for 32 years.

Born in Texas in 1907, he earned master's and PhD degrees in chemistry from the University of Texas, and after three years at the Carnegie Institute, joined Bell Telephone Labs in 1936. He was assigned to Sandia/New Mexico in 1958 as Director of Materials and Standards Development. He was promoted to VP of Development in 1960. Then in June 1961 he was named VP of Sandia/California, where he remained until retiring in 1968.

He is survived by his second wife, Holly, one daughter, one son, and two grandchildren.

Sympathy

To Bill Hensley (2344) on the death of his father, William Hensley, Sr., in Albuquerque, Feb. 14.

104 Sandians selected for Employee Recognition Awards

Sandia's third annual Employee Recognition Awards dinner will be held Saturday, May 11. The employee recognition corporate selection committees have selected 104 individual Sandians and nine Sandia teams to be honored this year. Labs Director C. Paul Robinson sent a congratulatory memo to each honoree on Feb. 19.

Employee achievement will be recognized this year in four categories: Exceptional Service, Teamwork, Technical Excellence, and Leadership. A team member representing each of the nine Employee Recognition Teams will be invited to attend the event.

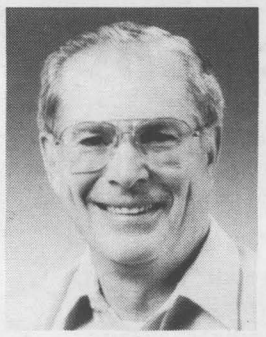
The *Lab News* plans to publish the names and photos of the winners near the time of the awards dinner.

Your first invite to InfoDay 96

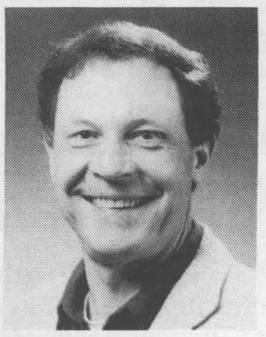
Protect your time for either the morning or the afternoon of March 28. That's the date for InfoDay 96, a time to spend half a day in the Technology Transfer Center (Bldg. 825) learning how Sandia is keeping one step ahead of the current worldwide technology explosion — and how you can benefit from this tool Sandians call the Internal Web.

More information on InfoDay 96 in the next issue. But keep your morning or your afternoon open, and plan to attend.

Recent Retirees



Jim Lohkamp 33
2151



Jim Dunn 30
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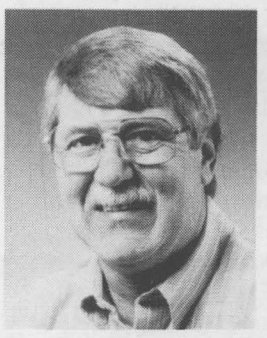

Dan Drummond 27
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Mary Gilliland 35
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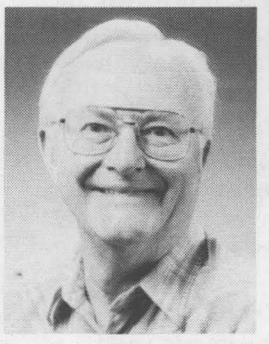

Lewis McEwen 39
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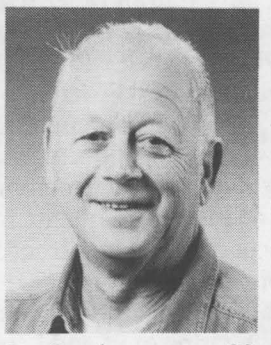


Joe Curzi 33
1553

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

Hearing from retirees: Looking back, and forward

Sandia's Livermore branch officially opened 40 years ago

Sandia officially opened its "Livermore Branch" 40 years ago, on March 8, 1956, as announced by the Atomic Energy Commission (AEC, now DOE), even though an advance team of engineers had arrived the summer before to work at Lawrence Livermore on nuclear weapons programs.

Their temporary home was the World War II barracks at LLNL, which still stand today across from Sandia. The first structure on the south side of East Avenue built for Sandia was Building 911, which was ready for occupancy in 1958. Following that, Building 912 was constructed in sections by 1959.

EARLY AERIAL VIEW — Taken around 1960, this photo shows five buildings on-site with three sections of Building 912 completed.

Several Sandians, now all retired, reminisced about their early days in Livermore and excerpts from their comments in past *Lab News* issues are collected here.

Orval Wallen recalled in a 1976 interview: "It was a closely knit group; everyone was congenial and we all worked to meet deadlines. The atmosphere was informal; communications were good, and you had to be flexible because there were so few people."

Gayle Cain said the same year: "One practical problem was the telephone. All calls had to go through a local operator, and then the phone company went on strike for a month. It took 30 minutes to make a Rad Lab (now LLNL) call and anytime someone was lucky enough to get a call through to Albuquerque, we'd hang on to that connection for hours, passing the phone around."

Bill Little: "When we moved into the barracks . . . there were only space heaters. If you plugged in more than two on any one side of the building it would blow a fuse. It was so cold everyone wore a heavy coat . . . Our first work bench was an old packing crate from Albuquerque, which we used for months."

Marv Glaze reminisced in a 1981 article: "I was the financial agent and leased two duplexes at 240-242 North K Street plus another house on Marylin Avenue, which were the only rentals available for Sandians to use until they found permanent housing . . . What I thought was my first California earthquake came in the (LLNL) barracks one day when a truck backed into our loading dock and the whole place shook."

Lorena Schneider: "In '56, Livermore had about 11,000 people and you could see everything in a 10-minute drive. The town reminded me a bit of the Old West, right down to the movie theater in the original opera house with its creaky, wooden floor . . . Several merchants thought we were a Danish furniture company, Scandia, that was supposedly locating here."

Sandia CaliforniaNews

THUNDERBIRD THEATRE — This exhibit, complete with a movie on the Sandia Story, was a part of the Alameda County Fair at Pleasanton in 1957.

In 1981 Tom Cook, then the Livermore site VP, was asked to jot down some predictions for 25 years hence. Here are a few of his observations that were meant for the year 2006:

• Sandia Livermore will still be here.

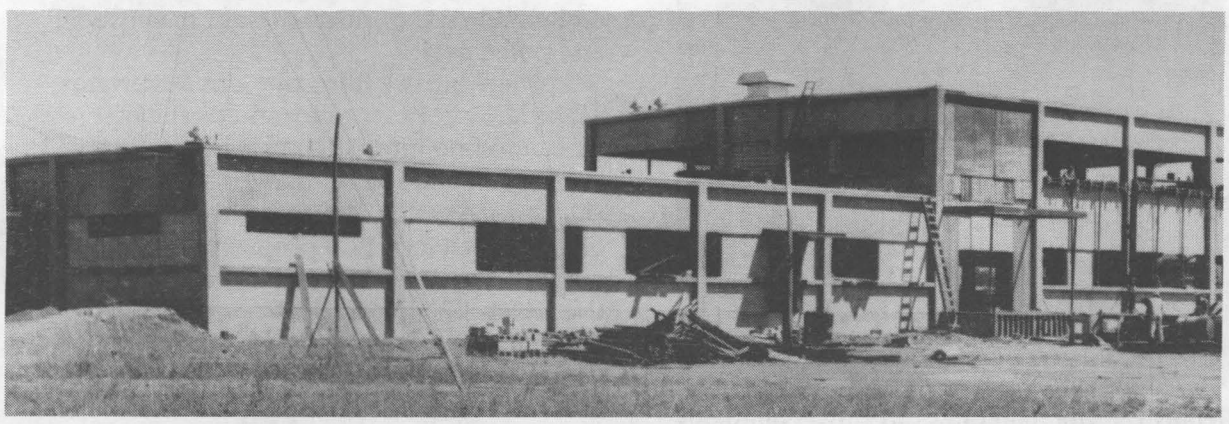
• The Labs will be internationally recognized as a leader in certain fields of science and technology. How things burn or combust is one such field . . .

• Our weapons R&D will reflect increased emphasis on fighting wars in space. A major challenge will be to make these weapons safe for people on earth but effective in space. Thus safety, reliability, and effectiveness will continue to have a major role in our R&D.

• There will be a prohibition on building nuclear weapons, that is, nuclear weapons as we know them today. The B83, W79, and W84 will all be in the stockpile. However, international arms reductions agreements will be reducing their numbers rapidly.

• Energy supplies will be well matched to the nation's needs. This will result from the use of fission, fusion, and coal energy sources augmented by solar, the latter particularly in the southwestern US.

As Sandia/California observes its 40th anniversary next week, more predictions for the future will be heard at a March 7 Town Meeting, with talks by VP Tom Hunter and President Paul Robinson. It will be interesting to hear what they see in the crystal ball 25 years from now, or even by the year 2000.



FIRST CONSTRUCTION PROJECT — Building 911 in its early stages in August 1957, showing the single-story section where Medical recently vacated and the two-story section where Procurement is housed today upstairs and Human Resources, Visitor Control, and Public Affairs now reside.

Here are the main 40th anniversary events

This schedule offers highlights of Sandia/California plans for observing its 40th anniversary on March 7:

Thursday, March 7

11:30 a.m. — Luncheon for original 1956 employees and retired VPs and directors.

12:30 p.m. — Sitewide celebration begins with cake and ice cream on the patio of the Combustion Research Facility. Music and historical displays inside Buildings 904/905.

1 p.m. — Employees' program in 904 auditorium with highlights of the past 40 years, featuring retirees' talks.

3:30 p.m. — Public and Sandians' families invited to a Town Meeting with displays and refreshments first, then a 4 p.m. program in 904 auditorium featuring VP Tom Hunter, Executive VP John Crawford, and President Paul Robinson.

Friday, March 8

Meeting of the Sandia Quality Leadership Council on-site. Members will have taken part in anniversary events the previous day.

State of the Labs

(Continued from page 1)

Paul opened his remarks with a discussion of recent significant technical accomplishments.

"As you know, you can't schedule when breakthroughs are going to occur, and, similarly, even though these have been very turbulent times for the Laboratories, you almost can't stop the breakthroughs from happening," Paul said. "This past year was one of the most exciting years in our history."

Among breakthrough developments Paul cited were: The automobile airbag work done with Precision Fabrics Group; the atom tracker, which represents a thousand-fold improvement in the state of the art of atom imaging and which may eventually be used to "watch chemistry happen"; the Charge-Induced Voltage Alteration (CIVA) process for finding minute flaws in microcircuits; and micromotors, for which "we've only begun to think of the potential applications," but which will almost certainly include important biomedical uses.

Building partnerships

John noted that in an era of high-bandwidth data communications, partnerships assume ever-increasing importance.

"In today's world, we rarely do anything alone or as a single institution," John said. "We all depend on partnerships. The world is moving too fast and is too complex for anyone to retain all of the capabilities, all of the knowledge, needed to do very complex jobs. And so partnerships are important to Sandia across the board."

He cited a number of successful research agreements Sandia has forged with major companies, including combustion work done with Cummins Diesel; the teraflops supercomputer quest undertaken with Intel; and the computational-intensive tire modeling performed with Goodyear.

At the other end of the business scale, John recounted Sandia's work with an entrepreneur who needed a flexible circuit board as a key component for a phonics-based educational toy. He noted that the government's $20,000 investment in the project has turned into $6 million to $10 million in first-year sales for the product (*Lab News*, Jan. 5, 1996).

John emphasized that technology partnerships "are very much a two-way street" in which Sandia learns and gains new capabilities even as it helps solve a technical problem. "Both partners learn, both partners gain from a partnership," he said.

Environmental cleanup record

"I report with some pride on our record in environmental cleanup," Paul said. "We made a commitment with the Department of Energy to clean up 19 sites and by the end of the year, we had cleaned up 33. We learned a lot in that process; one of the things we learned is how to cut down on the cost. In fact, we've been able to reduce the total cost estimate to clean up all the sites by $145 million, which is nearly a 50 percent reduction, and drastically shorten the time required."

Environmental cleanup of major sites at Sandia, Paul said, will be completed by the year 2000, instead of the original target date of 2020.

In other key points during their State of the Labs address and an earlier, related news conference, Paul and John noted that:

- Sandia is at the forefront of several "true revolutions" in technology — computing, networking, and the related area of advanced manufacturing, which will evolve in stride with advances in computational power and networking capabilities.
- Sandia, Paul admitted, "stubbed its toe" and tried to "over-manage the marketplace" in recent controversies surrounding staffing augmentation and travel contracting. Paul reiterated the Labs' support for small businesses in the community and said Sandia has learned that it must be a better listener to its supplier partners, large and small.
- Technology transfer is still viable. John said reports of its demise are greatly exaggerated. True, John said — seed money intended to get the tech transfer concept off the ground has largely dried up. Still, he noted, the enabling authorization to pursue tech transfer opportunities is still very much in place. Such opportunities, he said, can and will be pursued as long as the work is related to Sandia's mission.
- A UNM study finds that Sandia-generated dollars represent 6 percent of the New Mexico economy.
- 1,100 Sandians contributed 25,000 hours of their time to more than 300 community organizations.
- Sandians contributed $1.5 million to the United Way of Central New Mexico, 20 percent of the total collected by the agency.

Securing America's future

Paul noted that the Galvin Task Force report of 1995 chided the national laboratories, reminding them that mere "jobs preservation" is not an acceptable mission.

"While we accept that and agree with it," Paul said, "we counter that the value that's added to the nation really comes from the mix of disciplines, the critical mass of scientists assembled here.

"Therefore, we think our jobs as stewards of the laboratories is to try and do the best job we can to find interesting problems which will keep those folks fully employed and adding value to the nation, maintaining that mix of highly skilled technical people capable of keeping the Labs' core competencies at a state-of-the-art level."

In response to the changing global and domestic political environment, Paul said, "a theme is emerging — 'helping to secure America's future through science and technology.' That's what motivates our employees when they come to work each morning."

Labs Director thanks Sandians for support

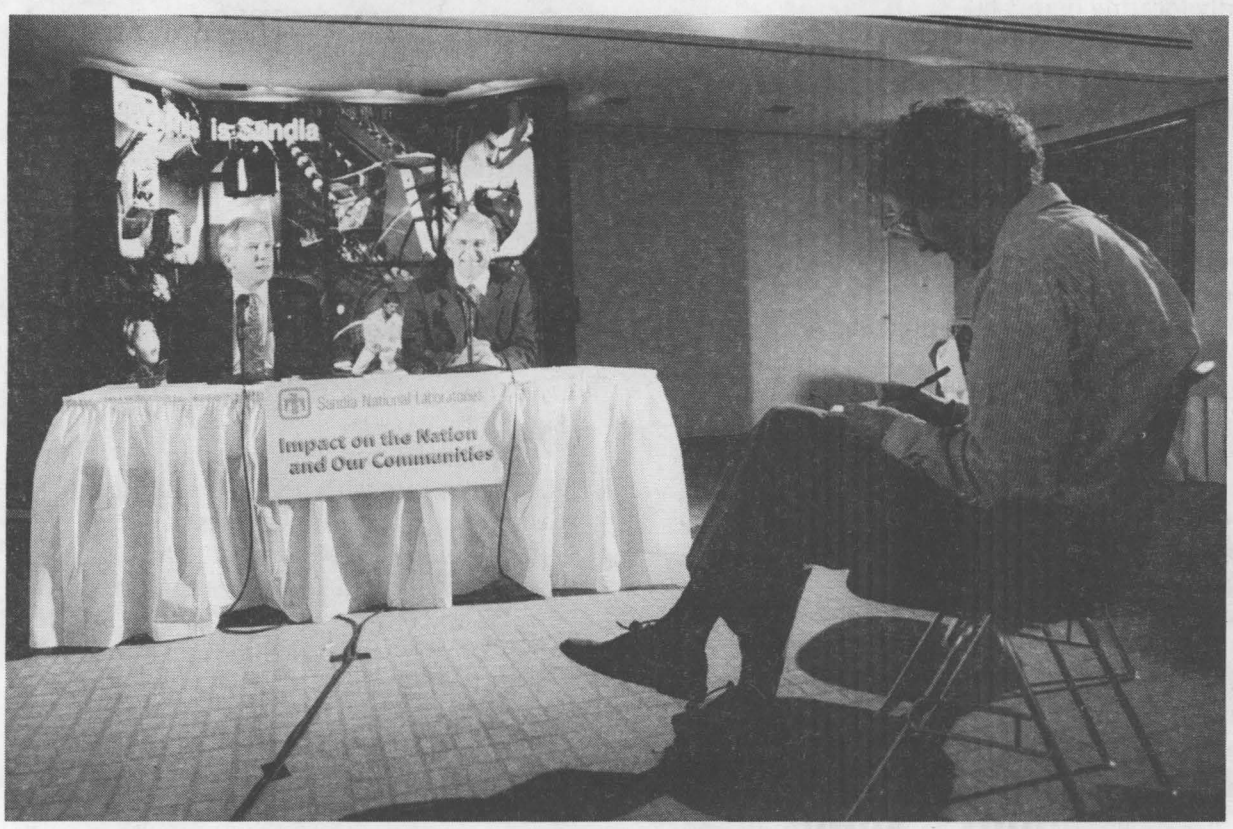
Paul says he thought the "State of the Labs" event was very successful, not so much because of what he and John had to say, but because of the outstanding preparations on the part of many Sandians, particularly Deborah Payne and Cindy Restrepo (both of Protocol Dept. 12670); Dianne Knippel, Mike Lanigan, and Linda Doran (all of Laboratory Communications Dept. 12610); Rod Geer (Media Relations Dept. 12621); Al Lujan (Visual Communications Dept. 12614); Goldie Piatt (Government Relations Program Office 12120); Lynne Schluter (Community Relations and Issues Management Dept. 12650); Bob McInteer and the graphics artists in Visual Communications Dept. 12614 who prepared visuals; and Richard Sanderville and Ed Sisneros, also of 12614, who coordinated audio/visual systems at the Technology Transfer Center during the address.

Sandia workforce projected to be about 8,060 by end of FY96

Sandia management announced last year that it planned to have about 8,200 employees by the end of FY96, but it now appears that the Labs may have about 140 fewer full-time equivalent (FTE) employees than that.

Labs Director Paul Robinson announced during his "State of the Labs" message last week that Sandia now is projecting to have about 8,060 employees by Sept. 30. This projection was made by Sandia's Human Resources Div. 3000. Karen Gillings, Manager of Staffing Dept. 3535, says the projection assumes normal attrition and continued limited external hiring.

Paul says current budget and programmatic uncertainties are cause for being conservative.



FOR THE RECORD — Labs Director C. Paul Robinson and Deputy Director John Crawford answer questions from the media during a news conference preceding their "State of the Labs" address while *Albuquerque Journal* reporter John Fleck takes notes. Representatives from most major media organizations in Albuquerque attended the news conference.

Economic model

(Continued from page 1)

should not be an obstacle, and if you specify the area, you could make a test." Klein, an economics professor at the University of Pennsylvania, is a consultant on the project.

The program in its final form should be useful for businesses, venture capitalists, company financial officers, bankers, and others interested in analyzing business cycles, studying financial implications of technology shifts, and predicting the effects of legal or policy changes for the Federal Reserve or Department of the Treasury.

Briefings to the Federal Reserve

Sandia physicist Rich Pryor, Manager of Program Management Dept. 9202 in Computational/Computer Sciences & Math Center 9200, presented the program's possibilities to technical personnel of the US Federal Reserve Board in St. Louis and in Chicago in December, accompanied by Sandia economists Tom Quint and Nipa Basu (both 9202). Rich, lead investigator on the project, has been invited to make another presentation with Tom and Nipa at the Federal Reserve Board's headquarters in Washington later this month.

Use of the current prototype program is available at a nominal fee to qualified citizens, businesses, and government agencies interested in playing out their own economic scenarios with videogame-like screen interactions, using a protected computer link into Sandia. A telnet connection and X Window System software are necessary to log in. A more detailed simulation is expected to be on-line by May.

Use of the prototype is available at a nominal fee to qualified citizens, businesses, and government agencies.

According to Richard Anderson, a research officer at the Federal Reserve Bank in St. Louis, "The program shows promise as a tool to analyze certain problems, such as interactions between households, that economists haven't been able to attack. The method handles a lot of households."

Computer subcodes called genetic algorithms allow economic actors to "learn" from their mistakes, rewarding correct decisions by creating "descendants" of those people or institutions who make them, and eliminating those who chose incorrectly.

Because the program's macroeconomic component relies mainly upon mathematical probability, the model should be better able to compute the effects of new economic programs like the proposed flat tax, the North American Free Trade Agreement (NAFTA), and the General Agreement on Tariffs and Trade (GATT), for which there are no historical experiences required by standard macroeconomic models, says Nipa. "Anyone qualified who logs on even to the prototype model will understand its potential as a tool, and, by modifying the parameters, see some new ways of solving economic problems."

Economy a complex adaptive system

Says Stephen Gibson, executive director of the Bionomics Institute in San Rafael, Calif., "The approach Rich is taking is one we'd like to encourage. We believe the economy is more like an ecosystem — more of a complex adaptive system — than a giant machine." Gibson believes Rich's program reflects this understanding.

In Rich's programs, households deposit money in banks, people are hired and fired, banks lend to companies, corporations buy corporations, and all "learn" from the experience. "If a corporation in the model raises the price on goods and the price rise is right, then a genetic algorithm reinforces that decision — its correctness allows it to survive, and other corporations may be deleted. Things successful breed with things successful and make offspring," Rich says.

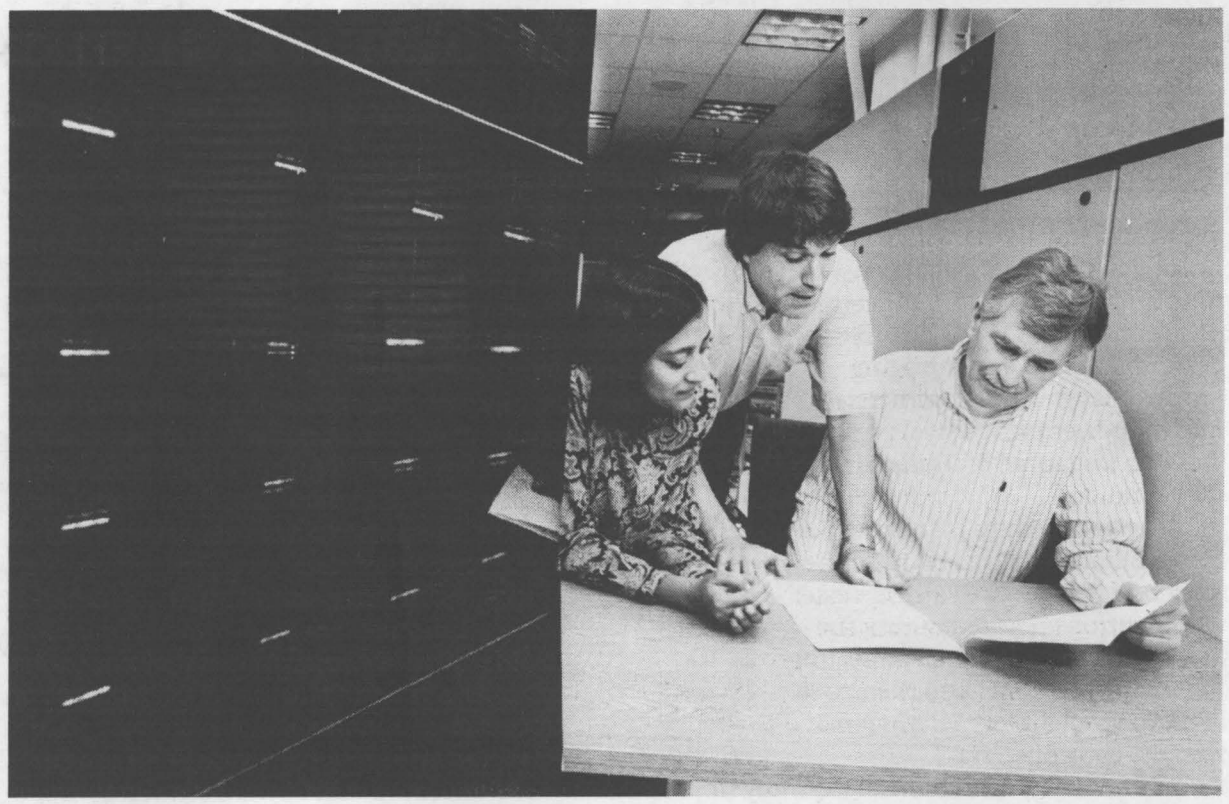
The prototype is a rudimentary model of a simple market economy consisting of government, industry, and households interacting with each other. Household demand for products is dependent on family size and income, the government collects taxes and pays benefits to the unemployed, and firms compete against each other by varying the price of their products and "learning" from the result. The model was developed primarily for testing message-passing algorithms and the logical ordering of the decisions of agents. When fed real-world data, the model produced results close to reality, including a business cycle, though it was not yet accurately represented.

Next-stage model to be ready in May

A more complex model currently under development includes a banking system, the Federal Reserve, a bond market, a real estate market, and more types of industry. The model emphasizes interest-sensitive sectors of the economy, which should be useful in analyzing monetary issues, and is expected to be available for use by May. Further inclusions will include government functions of regulation, organization of bond markets, and financing of the public sector.

"The simulation represents the behavior of basic decision-making agents within the economy," Rich has written. "By explicitly setting out how an individual or group tries to maximize usage of something they've bought, or make a profit on something they've sold, the program realistically models the behavior of agents in a complex environment."

Barbara Bergmann, an economics professor at American University in Washington, D.C., and consultant on the project, says, "This worthwhile research can be useful in policy planning. Conventional macroeconomics has not advanced very far in modeling the economy since 1950." Macroeconomists use "macroequations that involve total consumption of the whole economy, total income, total assets, total rate of growth. You put together a hundred equations and solve them simultaneously without dealing with consumption of individual families and that family's assets from databases provided by the census bureau and other information-gathering groups."



MATTER OF ECONOMICS — Sandians Nipa Basu, Tom Quint, and Rich Pryor (all 9202) go over data concerning their prototype model of the US economy. In the foreground is a portion of Sandia's Paragon supercomputer. The model may lead to more accurate economic forecasts.

Properties based on probabilities

Says Jim Shaw, president of BergenShaw International, a San Jose, Calif., consulting firm that specializes in advanced pattern recognition systems, "Economics is sort of like religion. It has unconfirmed results. Emergent properties often escape the attention of macroeconomists, while what Rich is doing is based on probabilities — a 30 percent chance, say, of someone doing this or that. Randomness enters his program."

According to Axel Leijonhufvud, director of the Center for Computable Economics at the University of California at Los Angeles, "The model of the Pryor group has adaptive features. Other models depict taxpayers as though the way they save and pay taxes is precalculated, like the flight of an ICBM, from childhood to retirement. One assumes one's agent has all the information needed for optimal decisions, that he has solved his problems at a very tender age, there's no feedback or alteration in the behavior pattern."

The decisions of householders in their budgeting, shopping, educational needs, and so on are generally considered only in microeconomic theories that — because of the huge amount of computation necessary and scarcity of data available — could compute only sections of the economy.

The actions of large forces such as trade policies and legal restrictions are generally considered macroeconomic — easily enterable in computers, but providing a picture painted by a very broad brush, with the corresponding probability of omitting factors of importance.

While macromodels can provide accurate forecasts, their general reliance on experience limits their applicability when new economic policies are introduced. The Sandia mathematical model doesn't need historical experience on the large scale to build its model. "If you want to assess the impact of GATT or NAFTA, econometric macromodels can't do it because there's no past experience. But if you work from microeconomics, you can build up," Rich says.

The program — "a big job," says Rich — was created at a national laboratory because its resources and stabilility of staff made it possible. The model is designed to run on Sandia's massively parallel Intel Paragon, one of the world's fastest computers.

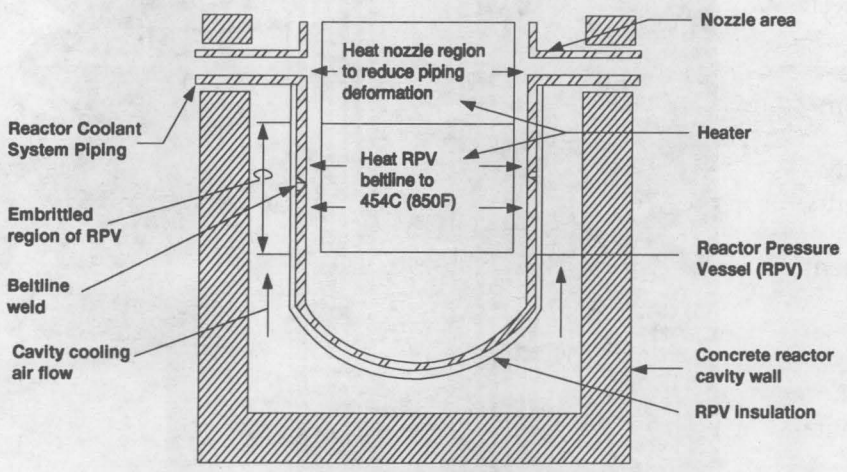
— Neal Singer (12620)

Annealing process reverses long-term effects of radiation bombardment in reactors

Reactor pressure vessels, like people, become brittle with age

Sandia is working with researchers from a Russian consortium and a variety of US concerns to determine whether it is possible to economically reverse the aging process that causes a commercial nuclear power plant's steel pressure vessel to lose some of its ductility over time.

One approach to managing this embrittlement, caused by the constant bombardment of a steel vessel with neutrons released during the fission process, is thermal annealing — heating the vessel and then cooling it to ambient temperature in a specific, controlled way.



Schematic of PWR reactor pressure vessel annealing process

The technique has been successfully implemented in Russia on some of its nuclear power plants and on US military reactors. These vessels, however, are smaller and of different design than US commercial reactors.

US nuclear energy industry officials recognize that if an annealing treatment could be applied to their commercial vessels, the industry — and utility rate payers — could save hundreds of millions of dollars over the next two or three decades. The savings would come through being able to keep existing reactors operational until the end of their operating licenses and make them better candidates for license renewal rather than having to replace them with costly new facilities.

Embrittlement of US reactor vessels does not pose a safety concern for currently operating plants as long as they are managed in accordance with NRC regulations, says Jim Nakos of Advanced Nuclear Power Technology Dept. 6471, who is serving as project leader for the DOE-sponsored Annealing Demonstration Projects.

"However, as a growing number of pressurized light water reactors — those most prone to neutron embrittlement — near the end of their licensed operating lifespans," he says, "utility executives must decide whether to replace the generating capacity with new plants or seek to extend the useful life of their reactor units through NRC's license renewal process."

Neutron embrittlement of the pressure vessel, if not addressed, could preclude a license extension, Jim says.

Sandia was selected by DOE to oversee the project because of its years of experience in studying nuclear reactor safety and license renewal issues and because it operates DOE's Light Water Reactor Technology Center.

The Annealing Demonstration Projects will use two research teams. The MPR Team includes MPR Associates, a small business; MOHT-OTJIG RM, a Russian annealing consortium that has successfully annealed 12 Russian reactors; and B & W Nuclear Technologies. The team, working with a nonirradiated vessel at a never-operational plant in Midland, Mich., will demonstrate in the fall of 1996 the Russian annealing process, which is based on electric-resistance heating.

The ASME (American Society of Mechanical Engineers) Team, working with an unirradiated vessel at the partially completed Marble Hill plant in southern Indiana, will demonstrate an "indirect gas-fired" approach to annealing the vessel. The annealing treatment will be conducted during the second quarter of 1996. Westinghouse Electric Corporation is a member of the ASME team, along with Cooperheat, Inc. and Gilbert/Commonwealth.

Advanced Nuclear Power Technology Dept. 6471 will provide program integration and technical support for both teams, notes Ajoy Moonka, manager of DOE's Light Water Reactor Technology Center at Sandia. The Electric Power Research Institute (EPRI) and other organizations interested in the commercial vitality of the nuclear energy industry are supporting both teams, as well.

Industry asks for demonstration

The demonstration projects grew out of a reactor pressure vessel thermal annealing workshop in February 1994. At that meeting, Jim says, annealing was soundly embraced — in principle — by the nuclear industry. On a practical level, he adds, industry officials were a bit cautious about applying the process to their reactors.

According to Jim, nuclear engineers at the workshop knew about the success of Russian and US military annealing efforts, whose work had shown that the useful life of an operational reactor could be effectively extended. US industry professionals, however, were not prepared to anneal their commercial reactors based on those successes alone, Jim says.

Industry leaders told DOE they needed to see a demonstration project before undertaking a commercial anneal. DOE agreed and directed Sandia to initiate a program to carry out such a demonstration. Following a competitive bid process, cost-shared contracts were awarded to two teams using different approaches to maximize the chances for success.

"The purpose of the demonstrations is to give utility executives confidence that thermal annealing is a viable process that can be applied to US commercial pressure vessels," Ajoy says.

While both project teams are trying to demonstrate that the thermal effects of the annealing process on the pressure vessel and surrounding structures and components can be fully defined and are within safety limits, they are using different approaches.

The MPR Team, using the Russian approach, will place radiant heating elements — somewhat akin to the heating elements on a typical electric kitchen range — adjacent to the steel pressure vessel. Heat radiating from the electric heating elements will heat the pressure vessel. The pressure vessel will be brought up to and held at a specific temperature and then cooled, all according to a carefully worked-out annealing "recipe."

The ASME Team will use a different technique: A hollow "can" will be placed in the pressure vessel and hot air will be channeled into the can. Heat radiating from the can to the pressure vessel will heat the pressure vessel.

After the two teams have completed the annealing treatments, the conditions of the pressure vessels and adjacent structures will be analyzed and compared to pre-annealing conditions to ensure there has been no damage.

Once the viability of the thermal annealing process has been demonstrated, a final critical step will be taken: A commercial utility will anneal a reactor pressure vessel in an operating plant, obtain Nuclear Regulatory Commission approval of the treatment, and restart the unit. Michigan-based Consumers Power Co. is poised to implement an annealing treatment at its Palisades plant and is participating in and closely monitoring the results of the demonstration projects.

— Bill Murphy

Sandia, auto-parts maker improving process for hardening steel parts

System already being used in Saturns, but other automakers joining, too

A computer control system developed in a cooperative project with Sandia is saving an automobile-parts maker time and money by improving a 50-year-old process that hardens steel parts.

The work grew out of a cooperative research and development agreement (CRADA) signed in 1993 between Sandia and Delphi Saginaw Steering Systems, a division of General Motors.

The division's plant in Saginaw, Mich., began using the system in August to produce shafts for front-drive axles in Saturn automobiles.

The CRADA became a part of the Partnership for a New Generation of Vehicles, a cooperative effort of federal government agencies and the Big Three US automakers to improve both national competitiveness and vehicle performance and efficiency. Although the system was developed in cooperation with the GM division's engineers, Chrysler and Ford are joining with General Motors in future development activities.

The new system is a way to control induction heat treatment — a process whereby steel and cast iron parts are made stronger by heating them with an electromagnetic coil and cooling them with a water spray. Although the process has been used since World War II, there has been no way to continually monitor the parts and gauge their depth and surface hardness.

Historically, the quality control process was accomplished by heating the parts in batches and cutting apart samples for inspection. If the samples met the required specifications, the whole batch was accepted. Because there has been no way to monitor every part, some good parts were scrapped while bad parts may have gone undetected.

Working with Delphi Saginaw Steering Systems engineers, a team of Sandia

(Continued on next page)

Probe helps avoid that waxy buildup in oil wells

Downhole temperature probe addresses chronic oil patch problem

Oil wells, like the kitchen floors in those old commercials, are subject to waxy buildup. At least with kitchen floors, you can see the wax. In an oil well, you often don't know you've got a problem until the buildup is so thick it plugs the casing or damages the formation.

Sandia engineer Chip Mansure of Geothermal Research Dept. 6111, working with several oil industry partners, has developed a downhole temperature probe that helps well operators see the waxy buildup, or at least determine the depth at which the temperature is cool enough to allow deposition of paraffin. The work is part of Sandia's involvement in the Natural Gas and Oil Technology Partnership, a cooperative effort of DOE, the national laboratories, and industry.

Paraffin may make excellent candles, but it's the low-grade, nasty part of crude oil. Higher in molecular weight than the rest of the oil, paraffin poses a potential problem in about one-third of the nation's half million or so active wells.

Identifying the 'cloud point'

Paraffin becomes a problem when it cools below the so-called "cloud point," the temperature at which it begins to separate from solution and solidify along the walls of the casing. Once the paraffin begins to stick to the casing, it gets easier and easier for additional paraffin to stick.

Over the years, well operators have dealt with paraffin in a number of ways, none of them completely satisfactory. They've pumped hot oil or hot water down their wells to melt the paraffin; they've treated it with chemicals; they've tried well-casing scrapers. Although each method has its merits, each also has distinct drawbacks, especially if used at an inappropriate well. And that's part of the problem. Almost inevitably, because of the difficulty of getting good data, well operators treat for paraffin buildup either too soon or too late. Too soon and you lose money, while damaging the formation unnecessarily; too late and you may lose a well. Hundreds of wells are abandoned each year because of paraffin-related problems.

Paraffin, in fact, costs the oil industry $70 million annually in treatment costs alone, not to mention the cost of premature well abandonment. And most of that burden is borne by the operators of stripper wells, those wells that produce 10 barrels or less of oil per day. These small-time operators traditionally don't have the technical resources, knowledge, or remediation capabilities to fight paraffin effectively.

Making better decisions

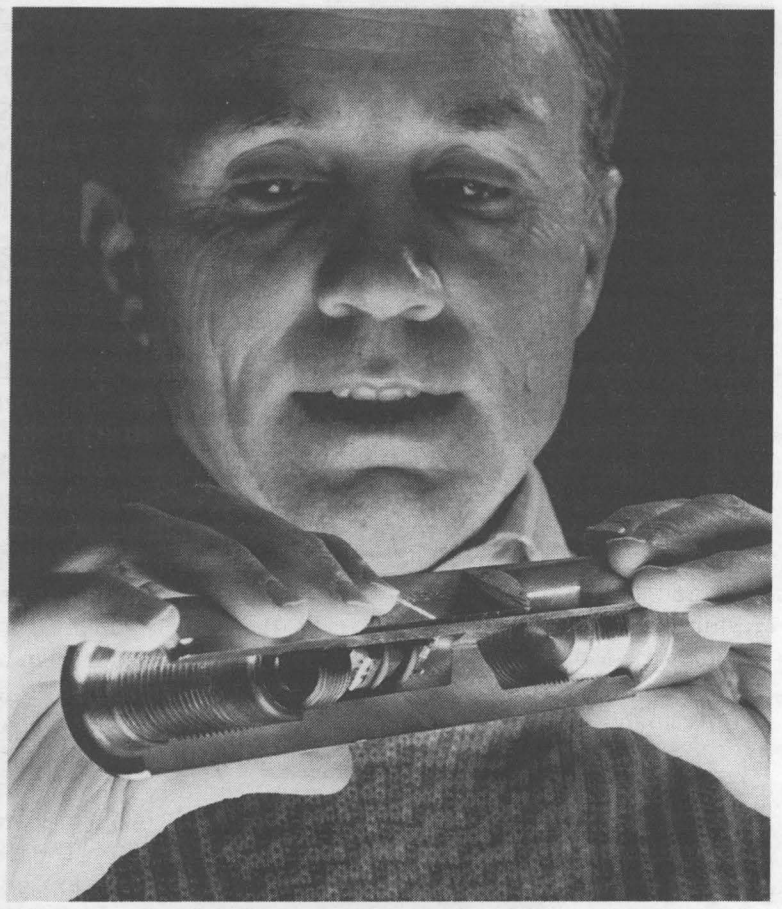
Chip, along with industry partner Flexbar, Inc. of Odessa, Texas, developed the downhole temperature probe to provide readings during normal production operations. The tool, because of its cost-effectiveness, will be particularly attractive to stripper well operators, Chip says.

The temperature data gathered by the probe will help well operators to gauge when and at what depth paraffin deposits are likely to occur and the effectiveness of hot oil in removing paraffin deposits. Armed with that knowledge, they can make better choices of corrective measures, Chip says.

The temperature probe is based on a microprocessor/sensor module — developed and specially modified for this application by Onset Computer Corporation — built into a rod coupler (see photo above). Oil well sucker rods — the rods that operate the pump that draws oil to the surface — come in 25-foot lengths. The rods are joined by couplers. The temperature monitoring package fits inside a just-slightly-elongated rod coupler. A well operator or service provider can easily attach several of the probes to different sections of sucker rods. When the rods are extracted and the temperature data downloaded to a PC, the operator gets an excellent temperature profile of the well.

The temperature probes, Chip says, are being commercialized by Flexbar, one of the leading manufacturers of heavyweight rods called sinker bars.

— Bill Murphy



PROBING THE PROBE — Chip Mansure, Geothermal Research Dept. 6111, displays a cutaway model of the downhole temperature probe Sandia has fabricated with oil industry research partners Flexbar Inc. and Onset Computer Corp.

(Photo by Randy Montoya)

The downhole probe: how it works

Downhole temperatures can be measured during normal production operations with miniature electronics inside a standard-diameter, extended-length (approximately five inches longer than normal) rod coupling. Access to the electronics is through the end and is sealed by a standard pipe plug while downhole. Prior to running the rod string into the well, the program controlling the start time and sample rate is launched by a PC using an RS-232 interface adapter and special software. After retrieving the coupling, the data can be downloaded, plotted, printed, and exported to spreadsheet by the temperature probe software.

Specifications

- Nonvolatile memory (data is not lost if battery goes dead)
- Sample interval 0.5 second to 1588 days (22 hours at 10 seconds/sample and 5.5 days at 1 minute/sample)
- Delayed launch start
- Temperature-tested to 250° F for more than 100 hours (battery shelf life is typically more than one year, but temperatures above 140° F degrade battery life)
- Temperature resolution better than 3.5° F up to 100° F.

(Continued from preceding page)

researchers developed a "closed loop" control system that monitors fundamental changes in the properties of the part.

Using knowledge gained through computational modeling and materials characterization studies, the researchers developed a neural network controller that controls the depth and quality of the hardened surface as it is being heated. When the system detects the desired condition in the part, heating is halted and the part is "quenched" with a cooling spray of water.

"The new control system allows the manufacturer to produce parts that are more uniform and reproducible even if there are variations in material, factory environment, and handling procedures," says Russ Skocypec, Sandia manager of the project and Manager of Thermal and Fluid Engineering Dept. 9102.

Sandia researchers in Engineering Sciences Center 9100 as well as Materials and Process Sciences Center 1800, Electronic Subsystems Center 2300, and Applied Physics, Engineering and Testing Center 9300 worked on the project. They include J. Bruce Kelley (1833), Doug Adkins (9113), Phil Kahle, Suzanne Stanton, Jeff Spooner (all 2338), Tony Russo (9114), and Gerry Knorovsky (1831).

Dave Hitz, chief process engineer at Delphi Saginaw Steering Systems, says the control system can be retrofitted to existing manufacturing systems at relatively little cost. The system also is energy efficient, providing a 40 percent savings over alternate hardening technologies, and it is environmentally benign, he says.

"This project is just one of many examples of how the national laboratories are working with American automobile manufacturers and other companies on research that is mutually beneficial to both the government and industry," says Bill Robinson (8301), who coordinates more than 20 research programs that Sandia has with automotive industry partners.

Although the new system is being used first by the automotive industry, the researchers say it could be used to heat-treat any component subject to high wear and loads. Civilian applications could include power tools, construction equipment, and home appliances. Defense applications could include weapon components, aircraft, tanks, and other military vehicles.

— Ace Etheridge (12621)

What is the role of nuclear defense in the 21st century?

Sandia seminar, book project looks to the future

The much-heralded 21st century is less than five years away, and it promises to be exciting: With micromachines, robotic warfighting machines, and super-speed computing already on the way, what more can Sandians expect?

Ask Rob Rinne, Senior Advisor for National Security Issues Dept. 8104.

Part of Rob's job is running Sandia's Future Roles of Nuclear Weapons project as a way of helping Sandians foresee the future and Sandia's role in the coming century.

The project focuses on potential roles for nuclear weapons, utilizing outside thinkers' visions of the future — how the national security environment may evolve, what threats the nation or its interests will face, and where those threats will come from — to make Sandia's Defense Programs objectives more clear.

It does this in two ways: it hosts a series of seminars and coordinates what Rob calls the "Book-of-the-Month" club.

In the series, distinguished international security analysts produce substantial papers on specific subjects and present them in colloquiums at Sandia.

"The program is working with individuals with long-established reputations as well as with some very up-and-coming thinkers," says Rob. Professor Stephen Peter Rosen, acting director of the John M. Olin Institute for Strategic Studies at Harvard University, will be leading an executive-level seminar on the morning of March 6 and presenting a paper in an open colloquium later the same day (see "Colloquium March 6").

The Book-of-the-Month series involves a bit more work for Rob, whose background is in mathematics.

"In a math book you read one sentence and wish for a 10-page explanation. In thick books on political philosophy you read 10 pages and wish for a one-sentence summary," he says.

In the Book-of-the-Month series, Rob and Karinne Gordon (8815) create three-part summaries of recent books and major articles by political analysts or "futurist" writers and distribute them to upper-level Sandia management.

They first condense the publication into what Rob calls "the Reader's Digest version," 15-20 percent of its original size. "We try to keep as much of the author's flavor as we can and keep out any prejudicial editing," he says.

The next part is the "Classic Comic Book" edition, also produced by Rob and Karinne, which is just a few pages of the essential themes in the selection. "That's for people with even less time on their hands," says Rob. "With e-mail, faxes, and copy machines, there is an ever-increasing amount of material to keep up with."

The book is reviewed and its implications for Sandia are evaluated in staff seminars at both locations. A summary of these descriptions forms the third element in the Book-of-the-Month documentation.

To date, the reviewed books and articles include *Russia 2010*, by Daniel Yergin and Thane Gustafson; *War and Anti-War*, by Alvin and Heidi Toffler; *Preparing for the Twenty-First Century*, by Paul Kennedy; and *Winning the Next War: Innovation and the Modern Military*, by upcoming lecture series participant Stephen Rosen.

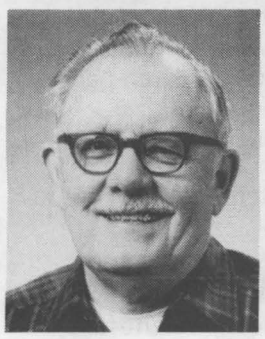
"I am pleased to say that the concept has received a lot of enthusiastic support," says Rob, "from the upper management to Sandians at all levels."

— Philip Higgs

Colloquium March 6

Professor Stephen Rosen is an associate professor of government and acting director of the John M. Olin Institute for Strategic Studies, Center for International Studies, at Harvard University. He is the author of *Winning the Next War: Innovation and the Modern Military*. In the past ten years he has served as professor of strategy at the Naval War College as well as consultant on the President's Commission on Integrated Long Term Strategy (Reagan administration). For more information on his colloquium, "Nonrational Aspects of Strategic Behavior," scheduled for March 6, 1-2 p.m. at the Technology Transfer Center, call Curtis Hines at 844-2233.

Recent Retirees



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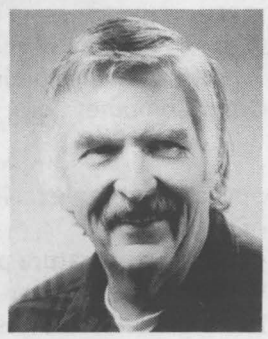

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Mildred Gilpin 14
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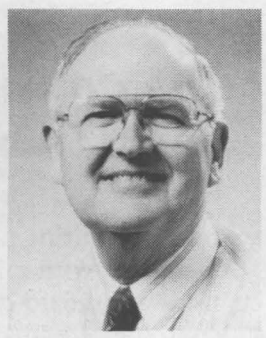

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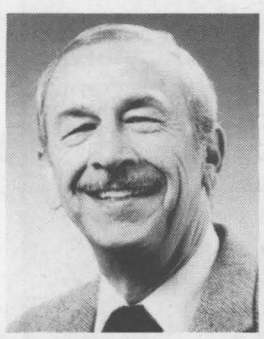

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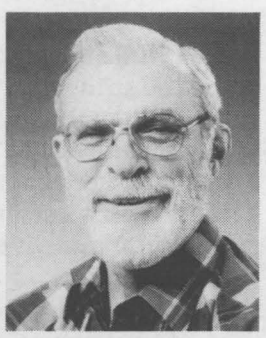

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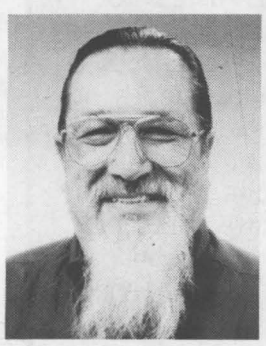

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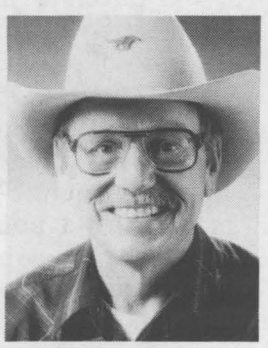

Richard Ashbaugh 35
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Here's to your health, ¡SALUD!

Health promotion program logo blend of old and new

Because the title "Total Life Concept (TLC)" belongs to AT&T, Sandia was required to change the name of its health promotion program. Health Promotion and Employee Assistance Dept. 3335 sponsored a contest to find a name that demonstrates the program's intention. Instead of one winner, there were two. Tim Spears (5715) and Natalie Stroud (former contractor in Dept. 7601) both came up with "SALUD," which is Spanish for "to your health."

About his inspiration, Tim says, "It took me all of 30 seconds to come up with SALUD."

"The new name gives us our own identity and reflects the Southwest," says Linda Duffy, Dept. 3335 Manager. "The logo is a blend of the new and old," Linda says of the familiar-looking new logo. SALUD was allowed to keep the heart symbol of TLC.

More than 500 names were submitted, many of them already used in other programs. The TLC staff narrowed the number down to 10, then voted and came up with the top three. Dr. Larry Clevenger, Director of Benefits and Medical Services Center 3300, selected the winning entry. After a run through Sandia's Legal Division for a trademark search, Sandia TLC becomes SALUD, effective today, March 1.

Open houses and health fairs

To celebrate the new name and to show employees what SALUD can provide, everyone is invited to visit the SALUD facility during open houses on Friday, March 8, and Friday, March 15, 11 a.m.-1 p.m. each day in MO-170, west of Medical Bldg. 831.

Health fairs are planned for Thursday, March 7, and Monday, March 11, 11 a.m.-1 p.m. each day, at the Technology Transfer Center (Bldg. 825).

SALUD staff members and program administrators will be available in booths in the TTC lobby to answer questions about their programs, talk about upcoming classes and seminars, and provide literature. Booths will include information about screenings, body fat, nutrition, and information about Employee Assistance Program (EAP) services. Information will also be available about a new thrust of SALUD — taking programs to employees in their offices.

Staying on top of TOP (Triple Option Plan)

The following information provides guidance on using the Referral Process in the Primary Care Physician Option.

Triple Option Plan (TOP) participants using the Primary Care Physician Option can be referred as needed for specialty care by the Primary Care Physician. The Primary Care Physician refers patients to Prudential Network specialists (as described in the white pages of the Prudential Provider Directory and the subsequent Supplemental Directory). The following steps summarize the referral process for nonemergency specialty care:

1. Your Primary Care Physician sends a recommendation for specialty care (referral) to the Health Services Utilization Review by fax or by mail. This recommendation includes the patient's name, identification number from the TOP identification card, type of service requested including the referral diagnosis, and clinical information.

2. After the request is received from your Primary Care Physician, Health Services reviews the request and, if it is approved, enters the authorization for specialty care into the Prudential Referral System. The review and input process is usually completed in eight business days (or less). If the patient is approved for specialty care, a referral letter is also mailed to the Primary Care Physician, the patient, and the Network specialist. The referral letter includes the type of care approved, the number of visits, and the duration of the referral. In the event of disapproval, a letter is issued to the Primary Care Physician and the patient stating the reasons for denial as well as the method of appealing the decision.

Urgent care: If the referral request is for urgent care, the approval process (including review and input to the Referral System) is completed in 48 hours or less.

3. If approved for referral, the patient schedules the specialty appointment after receipt of the approval letter. When making the appointment, the receptionist at the Network specialist's office will be able to verify the approval for the referral by entering the Prudential Referral System by patient ID number.

4. When the patient arrives at the physician's office for specialty care, the patient presents his or her TOP identification card, then pays the appropriate copayment. (Note: If a receipt for the copayment is needed for filing with the Reimbursement Spending Account, it must be requested at this time.)

5. If additional specialty care or testing is required as recommended by the specialist (in addition to the visits or lab tests specifically approved in the referral letter), the Prudential Network Specialist should contact the Primary Care Physician and enter the request to Health Services. If Health Services has not approved additional care or testing, the care or testing is probably not approved in the Primary Care Physician Option so that copayments can be made for care.

Remember: To use the Primary Care Physician Option and make copayment for specialty care and testing, the approved referral must be entered into the Prudential Referral System. Verbal referrals from the Primary Care Physician (e.g., "I think you should see a specialist.") or specialist are not sufficient to initiate the copayment arrangement for specialty care. If the referral is not entered into the Prudential Referral System and you obtain Network specialty care, the care will be treated as a claim within the Organized Network Option (self-coordinated), even if you paid a copayment in the specialty physician's office. If you have additional questions concerning the referral process, call Prudential Member Services at 1-800-845-6986.

As always, each TOP participant retains the option to use the Traditional Option, the Organized Network Option, or the Primary Care Physician Option each time health care is accessed.

Retirees offered Long-Term Care insurance

Long-Term Care insurance helps pay for nursing care and support services needed as a result of aging or a disabling accident or illness. This insurance can provide benefits for assistance needed for insured people who cannot perform activities of daily living (bathing, dressing, eating, etc.). These services are not available though Medicare or most medical care plans, including Sandia's medical plan.

Sandia contracted with Mutual of Omaha to provide Group Long-Term Care insurance to active Sandians and their family members during Open Enrollment in October 1995. The same insurance will now be offered to retirees, retiree spouses, and surviving spouses.

Enrolling in Long-Term Care insurance is optional. Premiums are based on the age of the enrolled person at the time he or she becomes eligible. Information/enrollment packages from Mutual of Omaha will be mailed to the home address of retirees or surviving spouses the week of March 4.

Since Mutual of Omaha is responsible for plan administration, it will handle all calls concerning it, including the policy, enrollment, health applications, acceptances or denials of coverage, premium payments, and claims. If you have questions, call the Mutual of Omaha Customer Service line at 1-800-877-1052, 8 a.m.-4:30 p.m. Central Time, Monday-Friday.

Retirement open houses

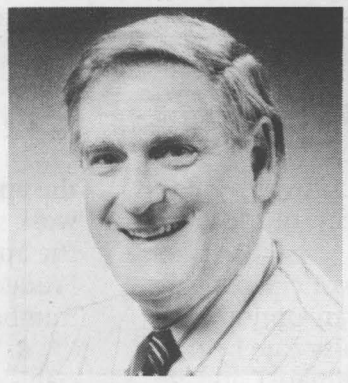
Sandia is holding open houses in honor of retirees **Danny Drummond** (7582) in the Kirtland AFB East Officers Club on Friday, March 15, 4:30 p.m.; **Don Odell** (1486) in the Area 1 Cafeteria (Bldg. 861) on Wednesday, March 20, 2-4 p.m.; and **Jon Barnette** (1535) in the Area 1 Cafeteria (Bldg. 861) on Thursday, March 28, 2-4 p.m. Refreshments will be served. Friends and acquaintances are invited.

A WARMER, WELCOMING look taking shape at the entrance to Bldg. 800 (above) is only part of a project that includes relocation and enlargement of Badge Office functions and a more inviting lobby, among other things. As work continued outside recently, Janco employee James Magoffe (right) put finishing touches on ductwork in the vestibule. The project, originally scheduled to begin in September 1994 and be finished by the end of 1995, actually got under way in July 1995, and project manager Cynthia Figueroa-McInteer (7903) says it is expected to be finished by the end of March. She says that when workers began demolition of parts of the original structure, they found structural problems and took the opportunity to correct them, which extended the total time for the project. When it is opened, visitors and employees will find a larger, plaza-like entryway with rounded steps beginning at the sidewalk and the ramp moved from the south side to the north side, a large etched Sandia thunderbird over the centered double doors, and a two-person reception desk directly ahead in the lobby.

Mileposts

March 1996

Jan Gaunce 20
12615



Hubert Filusch 40
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Alicia Cloer 15
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Richard Petersen 40
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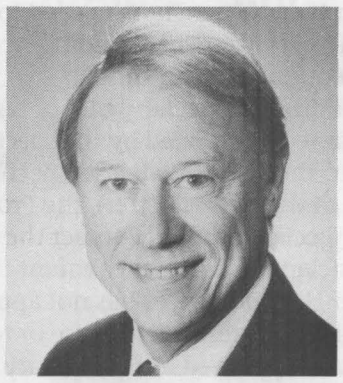

Rick Wayne 30
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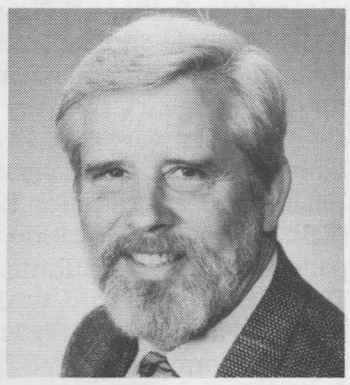
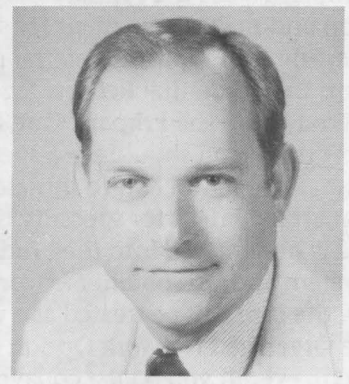
Michael Gonzales 15
7577

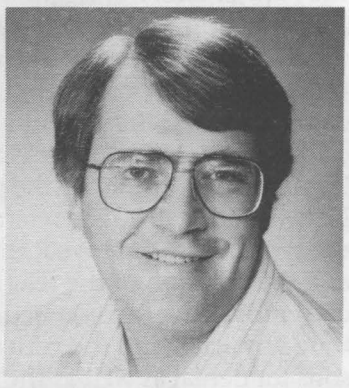


Taz Bramlette 25
8422



Carl Pretzel 15
8414

Nelson Sexson 20
7433



Brent Haroldsen 15
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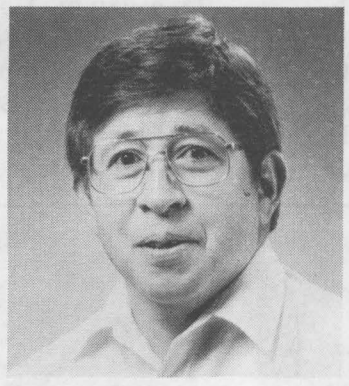
Prospero Sedillo 20
7613



Paul Duran 15
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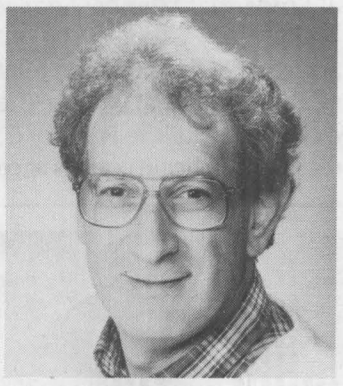
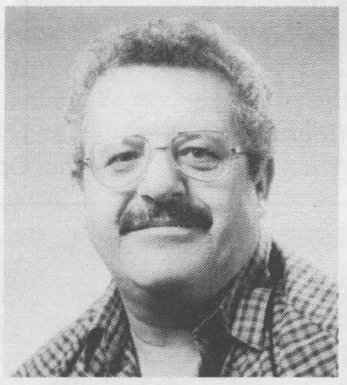


Larry Weingarten 25
8742



Tobias Barros 15
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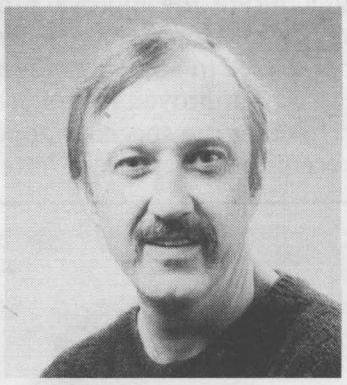

Stanley Piekunko 20
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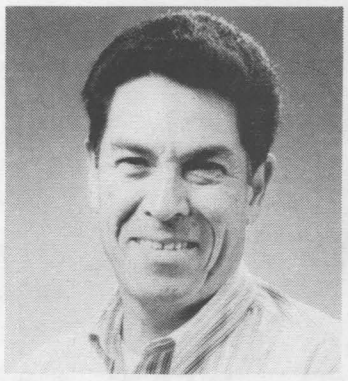

Rudy Jaramillo 20
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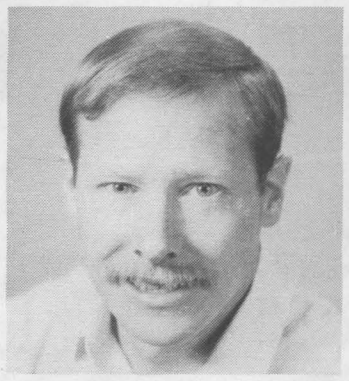
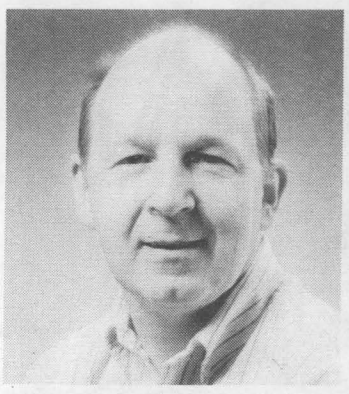


Bruce Kistler 15
8742

Cindy Jensen 20
2211



Richard Shambo 15
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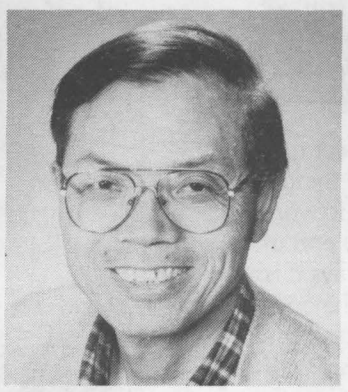
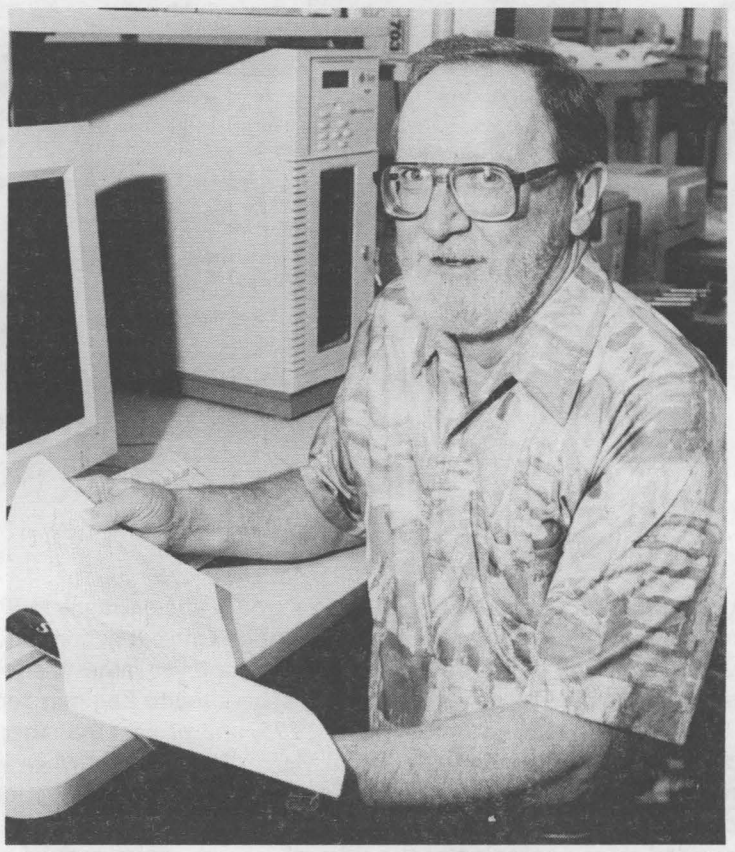


Yih-Renn Kan 20
8741

Stephen Montgomery 20
1561



Wes Pfarner 35
5736

Sandia Classified Ads

Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads

MISCELLANEOUS

LAPIDARY EQUIPMENT; Champion juicer, $125; Bissell carpet machine, $70; Slick Fifty, $10 per quart. Bruington, 255-6164.

COMPUTER DESK, oak, all-in-one, $45; 2 chrome Breuer chairs, w/gray cushions, great condition, $40. Clausen, 856-4018.

STEREO EQUIPMENT, Yamaha double cassette deck, Yamaha receiver, 2 Corwin-Vega D-1 speakers, $500. McVey, 890-7543.

TELEVISION, 27-in., stereo, Magnavox, monitor, oak cabinet, multiple I/Os, 8 yrs. old, paid $700+, asking $250. Howard, 839-9203.

SKI CASES, hard-sided, Flightmaster telescoping, for ski equipment protection while traveling (e.g. airline baggage), $40/ea., $70/both. Schkade, 292-5126.

LITTON MICROWAVE, Model 465, Memorymatic, 13 amps, 9"H x 14"W x 16"D or 1.16 cu. ft., all features work, $70. Giachino, 821-6351, leave message.

SERVICE MANUALS, '65 Chev. & '68 Jeep, $5 ea. Clark, 296-4541.

STATIONARY BICYCLE, Ajax Fun'Fitness dual action, excellent condition, $100. Krahling, 268-8126.

ELECTRIC DRYER, GE, large-capacity, heavy-duty, $75; monochrome monitor, $50. Browning, 822-8840.

BUNNIES, 1 lop ear, 1 Zealand dwarf, plus deluxe metal outdoor hutch easy clean-out under-tray, $35/all. Clough, 821-2729.

TRAILERS, car hauler & box-type, $250 ea.; microwave, $35; gas heater, $45; bull snake, $40. Trollinger, 265-1615.

LOVESEAT/DAY BED (firm), tan; oak stereo cabinet, w/glass doors; each $80 OBO. Neumann, 858-0944.

RV ROOFTOP CARRIER, 37" x 24" x 17", $100; Chev. truck tires & rims, 16 in., 8-hole, $10 ea. Jones, 883-1284.

CALIFONE RECORD PLAYER, portable, #1815K, detachable speaker, variable-speed player, input/output jacks, $40. Rhoads, 822-9193.

LANDSCAPING BARK, free, just come to my house shovel them up, put in bags, & take away w/you. Burstein, 821-6688.

TV, built-in VCR, Emerson, 13 in., w/decoder & remote controller, $200; vacuum cleaner. Kudo, 296-7206.

QUEEN WATERBED, 70% waveless, w/frame, headboard, accessories, $200; full-size bedroom set, 5-piece, excellent, $350. Brady, 292-0487.

SKIS, Rossignol 4SK 200cm, Marker M46R bindings, matching poles, $150; Sears garage door remote control, $15. Davis, 828-1931.

CRIB, w/mattress & sheets, $50. Roybal, 296-8493.

SONY AM/FM DUAL CASSETTE & CD player, excellent condition, $100 OBO. Anderson, 897-2772.

REFRIGERATOR, Whirlpool, 22 cu. ft., side-by-side, water & ice in door, only 5 yrs. old, $500. Van Deusen, 299-4328.

FREE KITTEN, female, under 1 year, gray fur, w/black nose, loves people. Ennis, 836-0504.

THREE CHIPS, 1MB, 30-pin, SIMMS, $40 ea. Conner, 281-9370, ask for Steve.

STORM DOOR, white, 36 in., great condition, screened, w/glass insert, $25. Lujan, 299-4820.

UPRIGHT PIANO, free (cracked sound board), still plays good enough to assess a beginner's commitment to practice. Barker, 899-2018.

SONY PLAYSTATION GAMES: Twisted Metal, $30; Warhawk, $30; Kileak, $25; Ridge Racer, $25; in perfect condition. Akins, 867-3967.

LIGHT METER, Luna-Pro, like new, $150; and tripods, geared-head Majestic & others. Luther 822-1187.

LUMBER, rough cut oak & poplar, 2 x 6 x 8. Devejian, 899-9420.

DOG TRAVEL KENNEL, for medium-size dog, $20; doghouse, $10. Newcom, 293-5180.

FREE LAWN ROCKS (gray), you pick them up, you haul them away. Sobolik, 292-3959.

PRINTER TABLE, oak finish, $50; rowing machine, $75; hide-a-bed couch, needs reupholstering, $100 OBO. Farris, 243-3268.

APPLE COLOR ONESCAN, $450; HP 550C color printer, $275; Calcomp graphics tablet, $125. Kozloski, 281-8506, after 5 p.m.

DRAPES, lined, beige brocade pattern, pairs: 41" x 87", 44" x 87", and 63" x 87", $50; 3 brass traverse rods, adjustable, $50. Anderson, 294-8451.

LOWREY ORGAN, beautiful cherry, w/Olson Rhythmbeat & 2.2 amp, Leslie speaker, c.1950s; heavy-duty workbench, w/grinder. Ballard, 344-8751.

FITNESS SYSTEM, DP Ultra Gympac; adjustable bench, pulley weight system, $225 OBO. McConnell, 271-2011.

BRASS LAMP, Rembrandt brand, 3-way, 53-in. tall, silk shade, perfect condition, $49 OBO; houseplants; other lamps. Dixson 298-5617.

AUTO BOOSTER SEAT, to 60 lbs., $20. Korbin, 299-9088.

TREADMILL, Sears, auto incline, LCD display, like new, $175. Arndt, 271-1599.

MAPLE ROCKING SETTEE, & maple end table, both $100. Maestas, 299-6514.

QUEEN WATERBED, w/12-drawer underbed, $200; 6-ft. conference table, $50; 2 bar stools, $10 ea. Turner, 839-7335.

MARLIN CAMP RIFLE, 9mm, w/extra 13RD Mag & folding stock, $340 OBO. Healer, 298-6967.

BUBBLE-JET INK PRINTER, Canon 200e, $120 OBO. To, 299-3031, after 6 p.m.

SONY 2x CD-ROM, $65; Seagate IDE HD 452MB, 11ms, $100; Cardinal 16-bit Soundcard, $35. Marshall, 293-3207.

FURNITURE, sofa, end table, coffee table, $200; Jenny Lind changing table, crib, mattress, comforter, bumper, sheets, $100. Outka, 298-5707.

FISHER-PRICE PLAY & PAC, w/sheets & more, $45; Graco baby swing, w/auto wind, $25; both like new. Bronkema, 291-1323.

HEAT-REFLECTIVE FILM FOR WINDOWS, easy to apply, 4' wide, retail $2/ft., asking $1.40/ft. Moss, 298-2643.

WEIDER STAIRSTEPPER, adjustable resistance, independent action, multi-function electronics, $100 OBO. Sisneros, 292-1854.

COMPUTER STUFF, PCI-IDE/IO controller, $45; QIC-80 tape drive, $35; network cards, $25; 386MB, games & more. Hsia, 284-2413.

RING, beautiful 3/4-carat, 6 surrounding baguettes, insured $2,800, asking $1,000 OBO; full-size slate pool table, + accessories, $300. Romero, 291-8676.

MEDIUM FORMAT CAMERA, Hasselblad motor drive, needs minor repair on battery-compartment door, $500. Dickenman, 892-9561.

BENTWOOD ROCKER, $40; Oskar food processor, like new, $25; name-brand boy's clothes, nice condition, infant-24 months. Zirzow, 281-9896.

CHILEAN ALPACA, registered male, 9-years old, lead trained, gentle, brown, rare high-quality fiber, $1,300 OBO. Phelan, 869-6094.

BABY JOGGER, w/bike hitch, canopy, all-weather shield, thorn-proof wheels, excellent condition, $175; baby backpack, $15. Nelson, 828-2755.

STEREO, Panasonic cassette, phono, radio, w/2 speakers, $150; Protect-a-Bedliner, short width, $175. Benton, 877-2473.

ENVIRACARE AIR FILTER, $50. Dale, 291-9020.

MAMIYA SUPER PRESS 23 CAMERA, 65mm/100mm/150mm/250mm lenses, $1,450; Mamiya G220, 135mm lens, $550. Gravning, 865-5581.

COMPUTER, 486DX4-100, 8MB RAM, 1.2 GB HDD, SVGA monitor, 4X-CD-ROM, Windows 95, encyclopedia, brand new, $1,499. Cole, 296-2720.

KIRBY UPRIGHT VACUUM, w/set of attachments, good condition, $85 OBO. Lane, 884-4566.

ICE CREAM PARLOR SET, 30-in. round table, 4 chairs, $125. Treml, 823-2996.

ELECTRIC DRAFTING TABLE, 3' x 5', w/manual tilt adjustment & straight edge, $90. Kelly, 237-9709.

SONY WALKMAN, AM/FM cassette, M# WM-AF64/BF64, Dolby, metal, MegaBass, auto-reverse, PowerClip, AC adapter, $20. Miranda, 293-8644.

ENGINE, 283ci, complete but disassembled, $50 OBO. Henfling, 869-4119.

WALLPAPER STEAMER, Wagner, used once, $30. Smith, 291-8224.

GRACO DOUBLE STROLLER, excellent condition, $70. Williams, 344-9276.

ENTERTAINMENT CENTER, large, ornate, teak w/marble inlays, 3 sections, excellent condition, $1,000. Kerr, 298-7332.

COMPUTER, 386-SX, 420MB HD, Soundblaster, dot-matrix printer, new keyboard, Windows, DOS 6.0, $650 OBO. Errickson, 883-7780.

REFRIGERATOR, 19 cu. ft., automatic ice-maker, $150; console hi-fi stereo rec. player/radio, $120; woman's butte-knit ensembles, size 12. Joseph, 822-0536.

WHITE STEEL-BELTED TIRES (2), P185/75R14, used 800 miles, $19/ea.; gas tank for '75 Chrysler Cordova, $3. Padilla, 877-2116.

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.

Due to space constraints, ads will be printed on a first-come, first-served basis.

Ad Rules

1. Limit 18 words, including last name and home phone (We will edit longer ads).
2. Include organization and full name with the ad submission.
3. No phone-ins.
4. Use 8½-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.

DUNCAN TOW BAR, for Saturn SL, $295; trailer hitch for Ford Aerostar van, $65; bike rack, $45. Harris, 822-0236.

ASYMMETRIC SNOWBOARD, 60-in. Burton, w/bindings, only ridden 1-1/2 days, $500 OBO. Wright, 293-9599.

FUTON BED FRAME, queen, oak, $100 OBO. German, 883-7002.

SOFA SLEEPERS, La-Z-Boy, queen and full, excellent condition as sleeper, sofa fair, earth tones, $100/ea. Lappin, 296-3457.

AUTOGRAPHED BASEBALL, Lou Brock Hall of Fame '85; Ricky Henderson "Born to Steal" plate #630 of 1990. Madsen, 856-1530.

AQUARIUM, 115-gallon, w/cabinet, pump, heaters, filters, plants, rocks, & gravel, great condition, $350. Horton, 865-9437.

RED FLAGSTONE, for landscape projects, 2-1/4 tons, cost $525, sell for $350; mortar box, 3' x 5', $25. Gorman, 292-7119.

FOUR FORGED ALLOY WHEELS, Center-Line Convo-Pro, 15 x 8.5, fits IFS Toyota & Nissan, $400. Bailey, 281-4766 or 229-2990 pager.

100-FAMILY GARAGE SALE, La Cueva High School Band Boosters, March 9, 8 a.m. to 2 p.m. at LCHS. Carroll, 292-5436.

TRANSPORTATION

'88 DODGE RAM CHARGER LE, 2-WD, 78K miles, AM/FM cassette, new AC, 318 V8, exceptional truck, $6,200. Krauts, 858-1289.

'88 HONDA CIVIC, 4-dr., 5-spd., AC, tinted, rear window defogger, mint condition. Garcia, 343-8207.

'62 CORVETTE, Roadster, 327/340-hp, Roman red, red interior, white soft-top, completely restored, $40,000. Cerutti, 299-4658, ask for Brian.

'91 NISSAN KING CAB, immaculate, AT, AC, matching shell, perfect miles, $9,895. Branstetter, 220-0655 (day) or 292-5978 (evening).

'87 HONDA ACCORD LX, 4-dr., AT, AC, cassette, 95K miles, excellent, $4,750. Kudo, 296-7206.

'73 CADILLAC SEDAN DEVILLE, new paint, rebuilt engine, 5,000-lb. hitch, w/air shocks, needs nothing, great car, $1,500. Wilson, 881-1874.

'91 LINCOLN CONTINENTAL, 4-dr., FWD, silver/burgundy leather, 73K miles, new tires, $9,800. Ewing, 823-1112.

'87 GMC SAFARI, conversion van, 22K miles, AT, AC, CD stereo, 1-1/2-year-old interior & custom wheels, $6,995 OBO. Cordova, 246-9470.

'95 JEEP WRANGLER, 4-WD, 4-cyl., CD player, hardtop w/tint, 16K miles, excellent condition, $15,400. Jeantette, 247-4239.

'64 FORD GALAXIE CONVERTIBLE, 390ci, needs restoration, $1,000 OBO. Myers, 867-5688.

'95 FORD THUNDERBIRD LX, 4.6L, V8, loaded, 20K miles, full factory warranty, pearl paint, $14,300. Martinez, 888-9561, ask for Abel.

'79 DATSUN PICKUP, 4-spd., $1,000 OBO. Shay, 869-3966, ask for Bobby.

'94 MAZDA MX-3, 8,800 miles, white, like new, AC, AM/FM cassette, 5-spd., 36-mpg, 26-month warranty remains, (NADA $11,800), $11,000. Robbins, 292-7355.

'86 PONTIAC FIERO GT, red, loaded, new clutch, battery, brakes, NADA $4,025, asking $2,750 OBO. Mauldin, 293-3763.

'85 BUICK SKYHAWK, needs overhaul, $800 OBO. Cartwright, 836-6957.

'90 CHEV. CAPRICE CLASSIC, small V8, F.I, AT, AC, 68K miles, $5,100. Martin, 343-9719.

'89 JEEP CHEROKEE, 4x4, 4-dr., 70K miles, 4.0L, AT, AC, clean, runs well, reliable, new tires, brakes, front-end alignment, $8,900. Sears, 891-4409.

'92 CADILLAC DEVILLE, white, w/blue interior, leather seats, less than 50K miles, garaged, $17,550. McEwen, 293-9074, after 5 p.m.

'87 MAZDA RX-7 SPORT, blue, 5-spd., alloy wheels, AC, cassette, good tires, less than 50K miles, excellent condition, $5,500. Mattern, 856-6313.

'83 SAAB 900S, silver, 3-dr., 5-spd., PW, sunroof, alloy wheels, new windshield, steering rack, $1,000 OBO. Crafts, 831-5234.

'82 LANDCRUISER, white, restored, 148K miles, 40K on new engine, 4x4, 4-dr., 4-spd., 6-cyl., AC, $7,200. Balsley, 254-0782.

'83 PONTIAC 6000, 4-dr., AT, $1,200. Benham, 856-2739.

'91 SUBARU LOYALE, 4x4 station wagon, V6, 5-spd., AC, PW, PL, PM, good condition, 61K miles, $7,000. Lynch, 884-7977.

'90 JEEP CHEROKEE, 4-WD, 4L, 6-cyl., heavy-duty tow & transmission pkg., excellent tires, lug/ski rack, $8,500. Johnson, 884-7764.

'80 FORD MUSTANG, well-maintained, original owner, 4-cyl., 2-dr., AC, almost new tires, battery, $1,200. Filusch, 299-5932.

'94 MITSUBISHI, 4-WD, Alpine system, nice, $9,000 OBO. Bayless, 299-4656.

'84 MAZDA GLC, 2-dr., hatchback, meticulously maintained, runs extremely well, under NADA book value, $1,500. Ruby, 821-0982.

'84 FORD TEMPO GL, only 74K miles, 1 owner, 5-spd., 4-dr., loaded, very reliable, $1,995 OBO. Potter, 299-6053.

'91 SABLE GS, 56K miles, all power, alarm, airbag, tint, AM/FM cassette, cruise, original owner, $6,900. Lonsberry, 837-9345.

'89 CHEV. CAVALIER Z24, convertible, V6, loaded, AT, 35K miles, excellent condition, $8,900. Eatough, 343-0560.

'95 DODGE NEON SPORT, 4-dr., 5-spd., airbags, 4W-ABS, PW, PM, PL, cruise, CD, 9,600 miles, $12,300. Tweet, 293-6105.

'90 OLDS 98 REGENCY, top-of-line, excellent condition, 70K miles, 22-mpg, $9,500 OBO. Royer, 293-2350.

'91 CORSICA, great condition, one owner, front-wheel drive, 4-dr., white, $6,000. Sandoval, 237-1462.

'89 DODGE D-50 TRUCK, single owner, mint condition, mechanically sound, 4WD, $5,200. Goodson, 286-1267, ask for Don, 875-8389 pager.

'88 FORD RANGER, extended cab, 4x4, AT V6, 68K original miles, $6,995 OBO. Padilla, 281-9550.

'74 JEEP CJ-5, 4-WD, 304 V8, 27K orginal miles, red, mint condition, $6,000 firm. Zipperian, 286-1721.

RECREATIONAL

BOATING SAFETY COURSES, in power & sail, offered by Coast Guard Auxiliary, classes began Feb. 20, register. Gardiner, 298-0116.

SIX-PACK CAMPER, w/jacks, sleeps 4, stove, sink, icebox, fits mini-to-full size pickups, very good condition, $600 OBO. Letz, 299-9490.

LIBERTAS 19# ROAD BIKE, 521-DB frame, all Campagnolo, Sew-up & Michelin rims, extra 250g sew-ups, $800 new, will trade equipment. Boak, 474-4362.

RV ACCESSORIES, TV antenna, Winegard Roadmaster 2000, $70; air conditioner, Coleman TSR, 10,000-Btu, $300. Jones, 883-1284.

TIMESHARES, due to death in family, only 2 left, low prices. Ludwig, 856-5111.

SKI BAGS, $5-$25; Dynastar skis, 195cm, Tyrolia bindings, $40; phone answer machine, $14; cordless phone, needs battery, $6. Horton, 883-7504.

'94 ARCTIC CAT SNOWMOBILE, 2 seater, 440 liquid-cooled, 400 miles, Cougar longtrack, trailer, sled, & extras, $4,800. Marchi, 291-9681.

DIRT BIKES, '83 Honda XR500 & XR100, w/trailer & manuals, good condition, $1,200 OBO. Gockel, 294-6460.

NCAA TOURNEY TICKET, great seat, section 20 (near midcourt), row 14. $60 for 6 games. Lee, 256-0239.

RV MOTORHOME, 23-ft., low mileage, large awning, 4KW generator, twin AC, dinette & couch, $7,995 OBO. Deller, 298-5705.

TWO RED MOUNTAIN BIKES, 19-in. frames, one woman's and one man's, like new, $200/ea. OBO. Boissiere, 881-5064.

REAL ESTATE

4-BDR. HOME, Belen, 1,950 sq. ft., 2 baths, 2 fireplaces, large yard, great neighborhood, 40-min. commute to Bldg. 800. Kercheval, 864-6549.

3-BDR. TOWNHOME, 2-1/2 baths, 2-car garage, loft, French doors, new landscaping, bright, mountain views, $115,000. Stefanov, 298-5244 or 298-2259.

3-BDR. HOME, 1,348 sq. ft., 1-3/4 baths, 2-car garage, security system, screened porch, fireplace, fruit trees, sprinkler drip system, $113,000. Hampton, 293-3763.

3-BDR. HOME, FSBO, 1-3/4 baths, single-car garage, many new updates, 11000 Morris Ct. NE. Daniels, 292-5838.

3-BDR. MOBILE HOME, '87 model, 16 x 80, 2 baths, kitchen island, stove, refrigerator, nice yards, North Valley. Silva, 898-1001.

3-BDR. HOME, 2-car garage, 3-yr.-old home, quaint Cuahtemoc, Mexico, $30,000. Myers, 867-5688.

4-BDR. HOME, Sandia School District, 1,768 sq. ft., 2-3/4 baths, hot tub, workshop, $124,900. Sullivan, 298-5366.

WANTED

SINGER SEWING MACHINE, featherweight, w/case. Carpenter, 256-0614.

HOUSEMATE, large 4-bdr. NE Heights, hot tub, views, garage, quiet, landscaped, nonsmoker, no pets. Wells, 293-0468.

MOVIE PROJECTOR, 8mm (standard). Pfeiffer, 299-3951.

ROTOTILLER, 3-or-more horsepower. Prevender, 296-8586.

TWO ROOMMATES for June/July, 3-bdr. house, located 15 min. from Sandia, $225/mo., ideal for summer interns, assignments. Duran, 292-7588.

POODLE, standard or miniature, (female), reasonably priced, will get a loving, warm home. Dann, 892-2829.

DIVE COMPUTER, good condition, reasonable price. Clark, 857-0434.

BORROW, recording of PBS Masterpiece Theater "*House of Cards*" or "*To Play the King*." Magnuson, 839-4608.

PUMP RIFLE, .22 Remington; shell tumbler; Fisher, White or Garrett metal detector; small outboard; XR100 motorcycle. Plummer, 823-1619.

ROOM TO RENT, apartment or house, for mature 32-yr.-old male OT student, nonsmoker, June 26-Dec. 15. McAllaster, 856-7715.

OUTDOOR GLIDER OR SOFA, with or without cushions, good condition. Hart, 292-5110.

BALLOON CREW MEMBERS, for weekend flying and rallies, private pilot, no paying passengers, Fiesta included! Rightley, 293-9780.

LOST & FOUND

FOUND: Necklace, 10-strand, artisan or owner name tag attached, in Bldg. 887 (water tower) parking lot. Tom, 844-1454.

LOST: Pendant necklace, heart-shaped, blue topaz stone, in gold-prong setting, lost Feb. 21. Dann, 892-2829 or 844-0296.

Sandia News Briefs

CRADA focuses on improving ceramic manufacturing

Sandia and Los Alamos national laboratories have signed a cooperative research and development agreement (CRADA) with AACCMCI, Inc., a consortium of ceramic manufacturers, and the Advanced Materials and Manufacturing Processes for Economic Competitiveness (AMMPEC) Alliance. The CRADA is expected to last five years and will focus on developing software for advanced ceramic component manufacturing. The software will be used to develop more robust processes to reproducibly manufacture more reliable advanced ceramic components while reducing costs to manufacturers. The CRADA is unusual in that it is a "funds-in" agreement in which AMMPEC will contribute $500,000 to the labs during the first year. Most CRADAs are "in kind" agreements in which the labs and companies involved contribute personnel, equipment, and facilities. Sandia has assumed the technical and administrative lead in the CRADA. Project manager is Kevin Ewsuk, Ceramic Processing Science Dept. 1841.

Sandia's Small Business Initiative Team wins DOE award

Sandia's Small Business Initiative Team has won DOE's Process Improvement Achievement award, presented by Secretary Hazel O'Leary in a Feb. 15 ceremony in Washington. The team was cited for developing a one-page application process that allows real-time processing of requests, improving the processing of technical assistance requests. A long-term economic impact study found $55 million in annual revenues and 105 new jobs created are attributable to technical assistance provided to six New Mexico companies. The team previously was awarded a Sandia President's Quality Award. Members of the team include team leader Leland Traylor, Kevin Murphy, Barbara Jordan, Kim Ford (all 4221), Joanna Chavez (4213), Amber Cline (8842), and former Sandian Tom Brennan (previously 4221).

Charline Seyfer to head process improvement group

Charline Seyfer (3525), Manager of Sandia's Corporate Training and Development Program, has been named president-elect of the International Society for Performance Improvement (ISPI). She will take office in April and become president of the organization in 1997. ISPI, with 10,000 members worldwide, is the leading international organization dedicated to improving productivity and performance in the workplace. Members include training directors, human resource managers, instructional technologists, performance technologists, human factors practitioners, and organizational development consultants.

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

Coronado Club

March 1 — Western night dinner/dance. $6.95 all-you-can-eat buffet, 6-9 p.m. Music by Isleta Poorboys, 7-11 p.m.

March 3 — Sunday brunch buffet, 10 a.m.-2 p.m. $6.95 adult members; $1.00 for children 3 to 12; free for children 3 and under. Music for buffet by So Rare, 1-4 p.m.

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

March 8 — Western Night dinner dance. $6.95 all-you-can-eat buffet, 6-9 p.m. Music by Bobby Buttram, 7-11 p.m.

March 15 — St. Patrick's Day dance. $6.95 all-you-can-eat buffet, including corned beef and cabbage, 6-9 p.m.; floor show, 8-9 p.m. Music by Midnight Magic, 7-11 p.m.

March 17 — Sunday brunch buffet, 10 a.m.-2 p.m. $6.95 adult members; $1.00 for children 3 to 12; free for children 3 and under. Music for buffet by Bob Weiler, 1-4 p.m.

Take Note

Retiring and not seen in *Lab News* pictures: Raymond Carpenter (1525), 19 years; Bartolo Castillo (7618), 28 years; Richard Elrick (6423), 32 years; Peter Lysne (6111), 29 years; Joseph Melograne (7615), 20 years; Gary Swagerty (12364), 39 years; Betty Tolman (12615), 20 years; and Robert Zamora (7818), 27 years.

Fun & Games

Bowling — SANDOE Bowling Association October Bowlers-of-the-Month include: Scratch — Sharon Voccio (5905), 543; and Reyes Chavez (7433), 658; Handicap — Judy Hansen (10232), 519 and 627; and Glenn Folkins (ret.), 636 and 708.

November Bowlers-of-the-Month include: Scratch — Eileen Marek, 558; and Curtis Domme (7811), 686; Handicap — Lea Long, 490 and 646; and Jerry Long (ret.), 657 and 702.

Winner of the Four-Game Mixer Tournament held Nov. 11-12 at Holiday Bowl was Charles Lloyd (2111) with a 733 handicap series. Second went to Pat Sanchez (13913) with a 723 handicap series.

The 1994/1995 Bowler-of-the-Year tournament was held Dec. 3 at Fiesta Lanes. Winners include: Scratch — Cheryll Barton, 595; and Bob Barton (10221), 713; Handicap — Dolores Schumpert (DOE), 545 and 668; and R. E. Peppers (9341), 626 and 674.

* * *

Golf — The Sandia Women's Golf Association (SWGA) will hold its annual membership drive and meeting on Tuesday, March 12, at 5 p.m. in the Coronado Club Zia Room. The meeting agenda includes tournament schedules, league registration, and lesson sign-up. Membership applications will be accepted at the meeting. SWGA promotes all aspects of golfing for all levels of play; anyone interested may attend. If you are unable to attend the meeting and want to join, contact Karen Smith (6600) at 256-0562.

Congratulations

To Lisa (9536) and Christopher (7714) Mullaney, a son, Jack Erin, Feb. 8.

Favorite Old Photo

This photo of the Walt Disney baseball team was taken in 1946. Walt Disney is standing at the left, and my father, Joe Mickey, is kneeling (front row, left) looking at Disney. Dad was one of two Disney animators on the Disney baseball team. The team won the league championship, then won the state AA baseball crown. They lost the national title in Kansas City, 1-0, despite the fact that their pitcher, Gene Foster, threw a no-hitter. The opponent scored on a bizarre play featuring throwing errors by both the third baseman and first baseman after a bunt down the third base line. At the time of the photo, Dad was working on *The Three Caballeros*. It was the first live animation movie with real actors. Among other cartoons and movies Dad did a major part on was *Cinderella* in 1950. Dad was an animator for the Disney studios from 1944-1953, then joined Sandia as a technical illustrator in 1956, retiring in 1982. He continued working for Sandia as a consultant until 1990. He still lives in Albuquerque.

— Russell Mickey (7435)