

Supercomputers Improve Magnetic Resonance Imaging

Researchers at Sandia have found that supercomputing can be a powerful tool in the quest for clearer and more accurate medical images of the breast and brain.

The massive memory and computing capacities of the supercomputers have allowed production of detailed, three-dimensional images with data collected through magnetic resonance imaging (MRI). Computer programs, or "codes," are used to

animate the images, creating MRI "movies" that allow the viewer to better assess lesions (areas of altered cells) or other abnormalities.

This Sandia-developed technology "offers far greater capability than is currently available on MRI instruments or high-end computer workstations," says Carl Diegert of Parallel Computing Sciences Dept. 1424. With better images, he says, physicians are better able to determine the nature

of lesions and the extent of any tumors that might be present. "It's possible," says Carl, "that the method could one day be used with computer-aided design equipment and software for planning surgery and for computer-assisted surgery."

The work is being done in Sandia's Massively Parallel Computing Research Laboratory in conjunction with Baylor University Medical Center in Dallas and the Department of Veteran Affairs Medical Center in Albuquerque.

Dramatically Better than Mammography

A Baylor MRI research group led by Dr. Steven Harms recently produced dramatic results in a small study comparing the accuracy of mammography and three-dimensional MRI for breast cancer diagnosis. Mammography uses X-rays to image internal structures, while MRI uses radio waves and magnetic fields.

Using a technique that makes the fatty tissue in the breast less visible, Harms' group imaged the breasts of 57 women who were judged to be at high risk for having breast cancer. Tissue samples

"The method could one day be used . . . for computer-assisted surgery."

of 47 of these patients were then evaluated microscopically to determine the sensitivity of the new technique. MRI detected about twice as many lesions as mammography and detected all of the cancers.

Under ideal circumstances, mammograms detect about 90 percent of tumors. Early results indicate that MRI reveals tumors not visible on mammograms, providing critical information for subsequent treatment.

One of MRI's advantages is its ability to clearly distinguish tumors from normal tissue, scar
(Continued on Page Four)



CARL DIEGERT (1424) examines screens representing the type of data involved in analyzing magnetic resonance scans. (Photo by Randy Montoya)

More than \$3.7 Million

Bond Allotments Hit New Record

Sandians set a new record during this year's US Savings Bond drive. Allotments for the current year totaled \$3,706,169 — more than a 3 percent increase over last year, says Chris Olson (4504), 1992 Savings Bond Chairman.

"Sandians at all locations gave strong support to the bond effort," says Chris. "They recognize the importance of bonds to the country and their value in personal financial plans."

About 48 percent of Sandians are at the bond-a-month level (enough allotted to buy a \$50 bond each month).

Final results from the bond drive show that a bit more than 90 percent of Labs employees now buy bonds. "That participation rate is lower than last year's," says Chris, "but it's still a good level of support. And almost 950 Sandians increased their level of participation, by an average of nearly \$400 each. I especially tip my hat to those folks."

Among groups at or above the center level and composed of 10 or more people, four reached 100-percent participation — 1700, 4500, 5000, and 9900. Center-and-above groups composed of fewer than 10 people and achieving 100 percent were
(Continued on Page Four)

Management Holds 'Road Shows' — See Page Six



LAB NEWS

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Proposals Due by Jan. 4

DOE Invites 140 Organizations to Bid On New Five-Year Sandia M&O Contract

DOE has sent requests for proposals to manage and operate Sandia to 140 organizations, and says it anticipates that the new contract will be a cost-reimbursement type on either a fixed-fee or no-fee basis.

Four universities and many companies already involved in parts of DOE's nuclear weapons complex were sent the request for proposals (RFP) last

The new contract will run from Oct. 1, 1993, through Sept. 30, 1998, preceded by a two-month phase-in period.

Friday (Oct. 9). It is a several-hundred-page document that outlines Sandia's mission, history, organization, facilities, staff, and other facets, as well as instructions for preparing contract submissions.

The RFP includes language outlining some contract provisions, but in a cover letter to prospective bidders, Jim Hoyal of DOE's Albuquerque Operations Office and a member of the Source Evaluation Board dealing with the contract wrote,

"Notwithstanding the type of Contract contemplated, DOE reserves the right to negotiate a different type of Contract."

Proposals from bidders are due at DOE/AL no later than Jan. 4, 1993. There is no indication of when DOE plans to announce the awarding of the contract, which is expected to run from Oct. 1, 1993, through Sept. 30, 1998, preceded by a phase-in period of approximately two months.

Preproposal Conference

The RFP also announced that a Preproposal Conference (PC) will be held at the Albuquerque Convention Center Nov. 4-5. Prospective bidders are invited to send as many as five representatives each to the PC to hear presentations by DOE and Sandia managers describing Sandia and its work.

The PC will include a "drive-by" bus tour for bidders and media representatives on the afternoon of Nov. 5.

For Sandians interested in the PC:

- Although the conference will be open to the
(Continued on Page Five)

This & That

The Race Is On - Now that the request for proposals to manage and operate Sandia after AT&T departs has hit the streets (see page one), the wannabes will be scrambling to get proposals ready by Jan. 4. It'll be interesting to see how many proposals come in. About 140 groups received RFPs, but the number of "serious suitors" will likely be much smaller.

* * *

Howza Chile There, Al and Laura? - We're not sure how they found the place, but two Sandians on temporary assignments in Washington, D.C., have found themselves a little bit of home. Al Sylwester (6211), who begins a one-year assignment at DOE Headquarters on Monday, and his wife Laura Gilliom (5600) live on New Mexico Ave. in Washington. Wanna bet, though, that anyone else on that street can pronounce Tesuque or Pojoaque, let alone spell Albuquerque?

* * *

Road Show Review - If you missed the Sandia management "road shows" in late September, you missed some interesting details about the Labs' future directions. But, we have basic info in this issue (see page six), and we're planning some in-depth LAB NEWS coverage in future issues. Also, you can check out a video tape of one of the sessions from the technical library. To find out if/when a tape is available for checkout, call 294-3034 in Livermore or 844-2738 in Albuquerque.

* * *

"No-Frills" Family Day Tomorrow - Sandians in Livermore and Albuquerque may bring family members into many labs and offices from 9 a.m. to noon tomorrow, Oct. 17. It's the first-ever "no-frills" Family Day at the Labs. In Albuquerque, retired LAB NEWS Editor John Shunny will have those popular Sandia-logo souvenir items - coffee mugs, T-shirts, caps, knives - available for sale tomorrow in the hallway of Building 800.

* * *

Noteworthy Notes - Regarding the recent Sandia visits by George Bush (Sept. 15) and Bill Clinton (Sept. 18): President Bush sent a thank-you note to Sandia President Al Narath; it's reproduced on page six. Also, a senior DOE official sent a note to VP Paul Robinson (4000) praising Sandians who helped coordinate both visits (on very short notice). "Last week was another example of the capability of Sandians," the official said. "I'm so proud of you all. Your team is unbeatable."

* * *

End of an Era - That's how retired VP Bob Henderson (himself an early shaper of Sandia) refers to the death on Oct. 3 of Arthur Machen, retired Director of the Military Liaison organization, in Cottonwood, Ariz. "Beginning in early 1944 at Los Alamos," says Bob, "Art and his directorate personnel were responsible for all weapon assembly work, starting with Fat Man and continuing through early full-scale firing tests in the Marshall Islands." Bob notes that Art's group also prepared technical manuals and trained military instructors who in turn trained the people who care for the nation's nuclear stockpile worldwide.

* * *

Short Phrases, but Wise Words - The keynote speaker at Albuquerque's Sept. 25 Hispanic Heritage Community Day luncheon said lots of things worth repeating, according to Sandians who attended. Keynoter Jimmy Cabrera is a professional motivational speaker from Houston. Just a few of "Jimmy's gems" as recorded (paraphrased) by Linda Vigil-Lopez (600): Diversity is bringing people together. Kids spell love T-I-M-E. Make dust or eat dust. It's better for parents to leave a heritage than an inheritance.

•LP

Supervisory Appointments

RENE BIERBAUM to Manager of Reliability and Electrical Systems Dept. 8116.

Rene joined Sandia at Livermore in 1983 as an



RENE BIERBAUM

OYOC (One-Year-on-Campus) student. She worked in the Electric Instrumentation Department on the integrated control unit tester for the W82. After finishing her master's degree, she returned on-site in 1984, joining the Electronics Sensors Division as an MTS

involved in the development of an infrared imaging system.

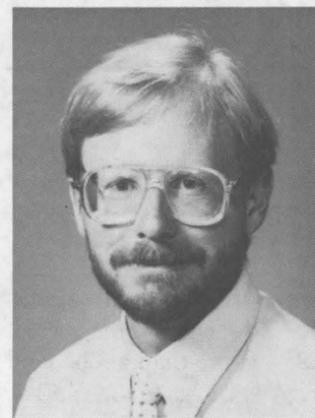
In 1986, she moved to the Systems Studies Division to work on tactical battlefield simulation software development and studies. In 1988, she transferred to the Electronic Subsystems Division as lead project engineer for the Joint Test Assembly Subsystem.

Rene has a BS from the University of Nebraska and an MS from Stanford, both in electrical engineering.

Rene and her husband Neal live in Fremont. She is a cellist in the Livermore-Amador Symphony and also volunteers in the MATCH program, which assists seniors and disabled people. Her other outside interests include reading, listening to music, backpacking, and bicycling with her husband.

GREG THOMAS to Manager of Exploratory Systems Dept. 8111.

Greg joined Sandia, Livermore in 1980, initially working on



GREG THOMAS

systems engineering and on component design and development for the use control system in the W84 program. Next he moved to the Exploratory Systems Department to do dynamic modeling and control system design work for pointing and tracking experiments in

the Strategic Defense Initiative program.

He then became system engineer for the W82 command and control system in the Systems Development Department. He also led a program definition study of accident tolerant containers for nuclear weapons. In 1990, he transferred to the Focal Point program as a project leader and program developer. He has recently supported the Defense Sector office in program planning.

Greg has a BS and MS in mechanical engineering from MIT. He is a member of the American Society of Mechanical Engineers.

Greg and his wife Susan reside in Livermore and have two children. Greg enjoys tennis, family and church activities, and coaching boys' soccer.

Take Note

People can buy and sell computer equipment at a "Computer Flea Market" Saturday, Oct. 24, in Albuquerque. The event takes place 9 a.m. to 3 p.m. in the UNM Student Union Ballroom. Proceeds benefit the scholarship fund of UNM's Data Processing Management Association student chapter. For more information, call Jerry Parsons on 898-0710 or Donna Campbell (7701) on 844-7722.

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ALBUQUERQUE, NEW MEXICO 87185-5800

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LARRY PERRINE, Editor (505/844-1053)

CHARLES SHIRLEY, Managing Editor (844-6210)

JOHN GERMAN, Writer (844-5199)

HOWARD KERCHEVAL, Writer (844-7842)

RANDY MONTOYA, Head Photographer (844-5605)

MARK POULSEN, Photographer and

Production Coordinator (844-0421)

JANET CARPENTER, Editorial Assistant (844-7841)

LISA CHAVEZ, Assistant (844-7841)

LAB NEWS FAX, (505/844-0645)

BARRY SCHRADER, Livermore Reporter

(510/294-2447)

Fun & Games

Fun Run - The Ronald McDonald House Board of Directors has selected the Ryan Patrick Strosnider Memorial Fun Run (Ryan's Run) as its major fundraiser. Ryan's Run is a 5K fun run and a two-mile walk. Proceeds from the run help maintain the nominal \$10 per night family fee for families who stay at the Ronald McDonald house, a "home away from home" residence for families of seriously ill children who are being treated at an Albuquerque hospital. The fifth annual Ryan's Run will be held Saturday, Oct. 17, at the Ronald McDonald House. For more information, call 842-8960 or 884-7666 during business hours. Ryan's Run was established four years ago as a memorial to Ryan Strosnider by his parents, who had experienced the emotional and financial stress of long hospital stays and many medical emergencies because of Ryan's congenital and finally fatal heart condition. Any family with a child 18 years of age or younger requiring medical treatment in Albuquerque may stay at the Ronald McDonald House.





Sandians Celebrate Hispanic Heritage

Sandians in Livermore celebrated Hispanic Heritage Month with two days of events that included a performance by the Ballet Folklorico Mexicano, a cultural display, and refreshments, all on Sept. 16. Then on Sept. 25 the Hispanic Leadership Committee at Sandia hosted Hispanic Student Outreach Day with tours of labs and demonstrations for high school students in the East Bay area. Also featured was guest speaker Richard Tapia, Noah Harding Professor of Mathematical Sciences at Rice University, who addressed the 250 students in the Bldg. 904 auditorium.



PERFORMING on the computer center patio Sept. 16 were members of the Ballet Folklorico Mexicano dance troupe.



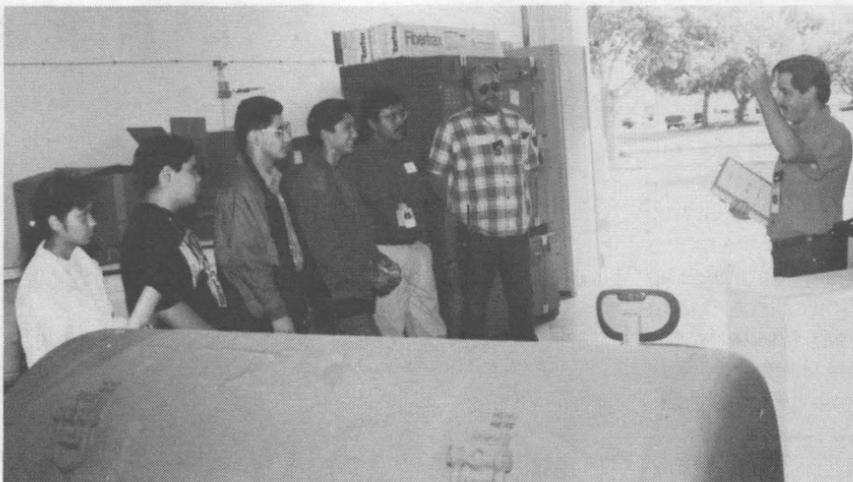
JUAN MEZA (8117) emcees the on-stage performance Sept. 16. Juan also introduced Richard Tapia to the student audience Sept. 25.



LOUIS BERNARDEZ (8342) explains in-situ Raman spectroscopy of growing diamond films in his Bldg. 916 lab to students from Stockton Edison High School during Hispanic Student Outreach Day.



RICHARD TAPIA (right) receives an Award for Excellence from Sandia VP John Crawford (8000) for his leadership in the Hispanic community and his inspirational remarks to the Hispanic Outreach Day student audience at Sandia.



PAUL LARI (5365) explains to student visitors the abnormal-environment drop test used to test the Transportation Accident Resistant Container (TARC) in the foreground. The TARC is designed for transporting hazardous materials



LEADING GROUP activities during the Asian Leadership and Outreach Committee (ALOC) luncheon Sept. 9 at the CRF mezzanine is Cliff Yokomizo (5301). The group hosted a buffet luncheon and shared Asian American culture with Sandia managers who also attended. The purpose of ALOC is to provide leadership for the growth, development, and full utilization of Asian Americans in support of Sandia's mission. More information is available from ALOC co-chairperson Judy Tejada (8484, phone 294-1275) or ALOC chairperson Pauline Ho (1126, phone 844-3759).

IMTL Dedication Today, Family Day Tomorrow

Dedication of the Integrated Manufacturing Technologies Laboratory (IMTL) complex is scheduled for today, Oct. 16, at the California Laboratory, with Family Day tomorrow.

The dedication of the IMTL begins at 9:30 a.m. just outside its main entrance. Featured speakers are scheduled to be Secretary of Energy James Watkins and Sandia President Al Narath.

Family Day open house will be from 9 a.m. until noon on Saturday and will include Sandians, on-site contractors, families, retirees, and invited guests. As part of the open house, there will be a Science Carnival on the Combustion Research Facility patio and a weapons display south of Bldg. 912. The new IMTL entrance building (Bldg. 940) and courtyard area will also be open for viewing by employees and visitors.

(Continued from Page One)

Supercomputers

tissue, or silicone. Frequently, women with silicone implants cannot be adequately evaluated by an X-ray method such as mammography because the silicone blocks the X-rays. The technique would also be helpful for women whose mammograms are difficult to read for other reasons, such as dense or fibrocystic breasts.

Although MRI is routinely used for diagnostic procedures in other areas of the body, early attempts at using it to image the breast failed. Since then, researchers including Dr. Harms have been working to improve the technique's resolution and contrast. About a year ago, Dr. Harms contacted Sandia's supercomputing group for help in analyzing the vast amounts of data produced by MRI.

MRI Overloads Analysis Capabilities

Sandia researchers are using the supercomputers to overcome shortcomings in available computer hardware and image-processing technology. With conventional MRI equipment, physicians are limited to looking at a series of two-dimensional

Without supercomputer speed, computer analysis of a scan would take hours.

"slices." The massive quantity of data acquired in MRI scans strains the capacities of even specialized computing equipment.

"The fertile ground here lies in using sophisticated image-processing techniques to gain more information than we would have by evaluating the raw data itself," says Dr. Harms. The group is working on improving both the speed of diagnosis and the quality of the image.

It takes about five minutes to complete an MRI scan of a patient. But subsequent data analysis is the time-consuming part of the process because of the enormous amount of data involved. Thousands of images can be generated, depending on the number of planar views that are analyzed.

Sandia researchers programmed their Connection Machine CM2 supercomputer to manipulate and display large data sets — on the order of 8 million bytes — from Baylor's MRI instruments.

One code slices through the data, displaying an animated view of each slice as the plane moves through the patient. A second code animates an observed region, allowing a viewer to rotate or manipulate a three-dimensional lesion in the breast, or an arterial tree feeding the brain. With the synthetic motion, a viewer can quickly deter-

(Continued from Page One)

Savings Bonds

2000, 2900, 4000, 4400, 5200, 5800, 6000, 8000, 9000, and 9400.

Reaching 97 percent participation or more were 5300 and 6500.

Coming in at 95 percent or more were 5500, 6300, 6900, 8200, 8400, 9200, and 9500.

The top division was 4000, with 94.4 percent participating. The division with the highest percentage of increased allotments was 8000, in which 17.8 percent of employees increased their participation level. Not far behind was 6000, with 16.5 percent increasing their allotments.

"Because of the Sandians who responded so well to the bond drive," says Chris, "the work of campaign committee members, division representatives, center coordinators, and campaign canvassers paid off.

"Thanks to all the people who supported the bond effort." ●CS

mine the structure of a lesion or arterial stenosis (narrowing).

Expertise Arose in Weapon Development

Weapon and other engineering development at Sandia has driven supercomputing applications to include many that fall outside the supercomputing mainstay of numerical simulation.

"With our massively parallel supercomputers we can digitally reduce and analyze an entire image sequence — a videotape record of an experiment — or observed volume," says Carl. "These methodologies, even the computer codes to apply them, appear to be remarkably useful in medical applications."

With just a few minutes of supercomputer computation, it appears that a viewer can obtain displays to assess the extent of a tumor with unprecedented accuracy. If a biopsy or lumpectomy were necessary, geometrical information, extracted from the MR scan, could guide the surgeon through the procedure.

Without supercomputer speed, computer analysis of the scan would take hours, and the computer could not be used to assist surgery. However, it could be used to produce a videotape that could be used by a surgeon to assist in planning a procedure.

Not Routine, but Lifesaving

With today's MRI machines, MRI will not replace mammography as a routine breast cancer screening tool because of its cost — about \$800 to \$1,000 — but it can provide more definitive information once there is reason to suspect cancer may be present.

It is doubtful that most hospitals could afford their own supercomputer, but the possibility exists for networking. Sandia researchers have already executed high-resolution, full-motion medical visualization remotely on the CM2 using a high-speed link covering 19 kilometers.

The goal is to refine the concept and then move toward reducing its cost, Harms says. Sandia is already working with several vendors of computing equipment to help shape the technical develop-

Why Medical Researchers Sought Sandia's Expertise

Sandia has extensive experience in the creation of computer graphics from raw data, including the creation of animated close-ups in three dimensions. Such images can help scientists and medical workers meet a contemporary challenge — data overload.

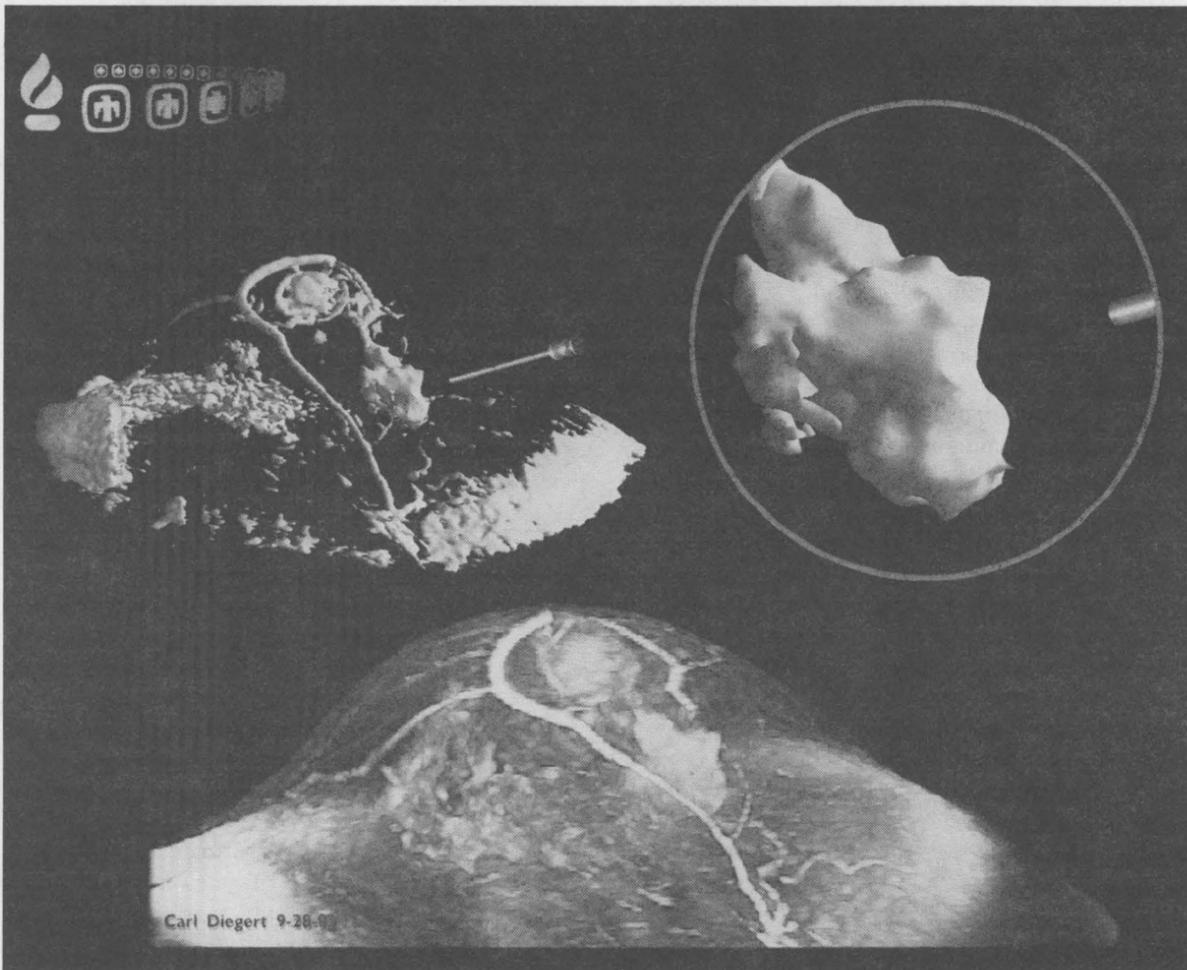
Scientific visualization, the branch of computer graphics dedicated to transforming numbers to pictorial form, allows analysts to "see" their work. Data bases of several gigabytes — billions of characters — can be turned into color-keyed graphics or animations that reveal changes over time. It's also possible to rotate, slice, or otherwise manipulate the pictures.

High-performance computing and computer simulation at Sandia involves an interdisciplinary team of more than 500 researchers. Some 50 Sandians are involved specifically with massively parallel computing and its applications.

Massively parallel computers work by breaking problems down into parts that can be solved simultaneously. For complex scientific and engineering problems that can be approached this way, they are substantially faster than conventional supercomputers, which solve problems sequentially.

ment and economic deployment of future computing equipment.

In the future, Sandia plans to work on analytic and statistical computations that would analyze multiple MRI scans of the same patient over time. Researchers have also recently produced an animation representing a computer-assisted biopsy procedure. ●JClausen(7161)



COMPUTER-GENERATED composite illustrates a potential application of Sandia's work pairing conventional magnetic resonance (MR) images and supercomputers. In the bottom image, a Connection Machine supercomputer produced a "synthetic X-ray" of an entire MR scan, revealing a clouded area representing a lesion. The image is just one of hundreds of different views that would be instantly available to radiologists for analysis. In the upper left image, Sandia's Intel supercomputer processed the MR scan to produce the geometric information shown (note relationship to bottom image). The area of interest is enlarged in the upper right corner. The information could be used to mechanically guide a surgeon in conducting a biopsy, as illustrated by the needle.

(Continued from Page One)

M&O Contract

public, non-participant seating will be limited.

- No mechanical, electronic, or verbatim recording of its sessions will be allowed.

- As already mentioned, some Sandians will be conference participants. Others who want to attend as spectators must arrange vacation or other personal time to do so.

In the offer letter, DOE says, "The RFP places emphasis on the value added and contribution of the Parent Organization(s) to assure the Contractor shall sustain and enhance the Laboratory's ability to function as a multi-program Federally Funded

Employees may examine the RFP in the Technical Library. Copies have also been provided to Center offices.

Research and Development Center while assuring accomplishment of its primary assignment as a nuclear weapons research, development, and engineering laboratory. This assignment encompasses a requirement for stewardship of the nation's nuclear weapons."

The document requires the new contractor to commit to: "(a) offer employment, except for Laboratory Key Personnel [Officers], to all other Regular and Part-time Laboratory personnel currently employed and at their existing salary rates; (b) take over existing pension plans established specifically

New Savings Plans to Mirror AT&T Plans

Transition Executive Lee Bray (30) says DOE/AL has approved Sandia's request to develop stand-alone Sandia Corporation Savings Plans with the same fundamental benefit plan design — including employer matching contribution levels — as the AT&T Savings Plans.

"The new plans will be in place before the termination of the DOE/AT&T contract a year from now," Lee says in a *Transition Council News* bulletin to all employees. "Sandia will be working closely with AT&T, which fully supports the change, to develop the successor plans."

Lee also says that, although it is too early to provide information about the successor plans and investment options, it is Sandia's intent to retain participant balances in an AT&T Shares Fund for some extended period.

This would be similar to the process that occurred with divestiture of the Bell Regional Operating Companies with respect to their stock owned in the Diversified Telephone Portfolio, he says.

"In Sandia's situation," Lee says, "no new contributions could be made to the AT&T Shares Fund after the initiation of the new plans, and AT&T stock dividends would be reinvested in another investment option. Of course, Sandia participants would be allowed to move balances from an AT&T Shares Fund into other investment options."

Although no further details of the savings plans are available now, current employees and retirees are encouraged to check on them and other aspects of the transition process periodically by phoning Sandia Line on 845-6789.

New Experience for Sandians

Proceed with Caution When Dealing with Potential Bidders

The processes involved in transitioning from AT&T to a new management and operation (M&O) contractor are new to Sandians. Since the activities of some organizations planning to bid on the contract are likely to increase in the weeks and months ahead, a few cautionary words seem to be in order.

Here are some things bidders might do:

- Open local offices.
- Advertise themselves in local media.
- Contact Sandians individually to promote their companies to employees or seek information to support a bid.
- Stage public activities such as picnics or wine and cheese sessions as means for establishing communication with employees.

Take Care in Discussions

Any employee, of course, is free to talk with a representative of a potential bidder, but here are some guidelines provided by the

Transition Program Office (33):

- Bidder-sponsored activities should be attended only off Labs premises, out of working hours, and on an unpaid basis. No documents should be taken to such events.

- You should not carry one bidder's information to another.

- Be careful to avoid conflicts of interests, particularly with bidders who are also suppliers to the Labs.

- And, of course, be careful not to reveal classified, proprietary, or other sensitive information. A simple test is: Could I discuss this with my neighbor?

In summary, this is new to all of us, and we all have to be careful not to compromise ourselves as individuals, or compromise Sandia and its work.

For the most part, rely on common sense. If in doubt, ask your manager.

for the current contract and establish or take over savings plans at the same employer and employee contribution rates allowable under the AT&T savings plans; (c) credit employees' length of service with the incumbent contractor toward any length of service requirements of the replacement contractor for fringe benefits such as severance pay and enrollment in group insurance plans; and, (d) recognize the currently certified collective bargaining agents and their existing bargaining agreements."

Health care, life insurance, disability insurance, vacation time, and other employee benefits are discussed in a draft appendix in the RFP. DOE indicated that all or parts of that appendix might be negotiated with the successful contract bidder, which could change some current benefits. The LAB NEWS will discuss these in more detail in future issues.

All 140 organizations are listed in the RFP,

copies of which are available for public inspection in the reading room at the National Atomic Museum at Kirtland AFB and in the Document Control Room, Building 800, Room 104. Copies also have been sent to the Technical Library and to all Center offices. •

Take Note

The annual adult conference of the Albuquerque Association for Gifted and Talented Students, "The Future of Gifted Education: The Challenge," will be held tomorrow, Oct. 17, at the Albuquerque Academy from 8 a.m. to 4 p.m. The featured speaker is Barbara Clark of California State University. For information, contact Connie Molecke on 296-5850 or Kay Schardein on 292-3524.



WINNING ENTRY — Larry Yellowhorse (6215) makes adjustments to a solar detoxification system that destroys organic toxins in groundwater. The detox system — which uses a reflective parabolic trough to focus the sun's energy on a long glass tube — was one of four Sandia technologies that recently won 1992 R&D 100 awards sponsored by *R&D Magazine*. The award was shared between Sandia and the National Renewable Energy Laboratory. Key Sandia contributors to the system's development were Craig Tyner, Jim Pacheco, Mike Prairie (all 6216), John Holmes (6304), and Larry.

Focus of Future Articles

New Responsibilities and Strategies Emphasized During 'Road Shows'

Focusing on the trend of growing Sandia cooperation with industry, Labs President Al Narath and several vice presidents discussed emerging Sandia responsibilities and sector strategies and how the Labs' core competencies contribute to them during management "road shows" in Albuquerque and Livermore in late September.

The LAB NEWS plans in-depth coverage of the main issues and ideas discussed during the road shows — including some first-person articles by Sandia's vice presidents — so the ideas are discussed only briefly here. The sessions were videotaped; interested employees may call the technical library in Albuquerque (844-2783) or in Livermore (294-3034).

VPs Paul Fleury (1000), Roger Hagenruber (5000), Dan Hartley (6000), and Gerry Yonas (9000), along with Al, presented six sessions of the show on Sept. 28 and 29 in Albuquerque and two on Sept. 30 in Livermore. VP Heinz Schmitt (2000) was also scheduled to speak, but a conflict developed in his schedule; Al substituted for Heinz, discussing Sandia's advanced manufacturing technology initiative.

Importance of Core Competencies

Describing Sandia's core competencies as the "resources, talents, capabilities, and facilities we have developed over the years" and the "fundamental strengths essential for our long-term success," Research and Exploratory Technology VP Paul Fleury emphasized their relationship to Sandia's new sectors — Defense Programs, Energy and Environment, and Work for Others. He also emphasized how Sandia applies the core competencies through technology initiatives to develop solutions to problems of national importance.

Sandia's core competencies are: (1) Computational Simulation and High Performance Computing, (2) Engineered Materials and Processes, (3) Microelectronics and Photonics, (4) Physical Simulation and Engineering Sciences, and (5) Pulsed Power.

VP for Defense Programs Roger Hagenruber discussed the Department of Energy's "Complex 21" (the name describing the evolving, more compact complex of DOE laboratories and production facilities) and the role that Sandia will play in helping DOE bring it about. "We need to capitalize on the unprecedented opportunities during this time of change, rather than try to fortify ourselves against the threats," he said. Roger also discussed emerging opportunities that Sandia has in the areas of stockpile dismantlement and in non-proliferation (he is sector leader for

non-proliferation technologies).

Sandia wants to significantly "grow" its energy and environment work, said Energy and Environment VP Dan Hartley, and is aggressively seeking opportunities to team with other Sandia sectors and programs. "We seek broader involvement of other divisions in planning, marketing, and executing energy and environment programs," he said. Dan presented Sandia energy and environment revenue projections showing a growth to \$361 million by FY96. This would be an increase of about \$100 million from FY92's estimated \$260 million. Dan is sector leader for the Labs' transportation initiative.

Difficulties and Opportunities

System Applications VP Gerry Yonas talked about changing national R&D strategies and both the difficulties faced and the opportunities presented by the combination of an enormous federal deficit, weak economy, and no emerging military threat. Gerry, sector leader in both space and health-biomedical technologies, explained that with the general decline in nuclear weapon activities, Sandia is focusing program development activities on specific high-impact initiatives (transportation, space, advanced manufacturing, etc.). (Gerry also discussed some of his ideas about another initiative dealing with advanced conventional weapons that he calls RSTAKA — reconnaissance, surveillance, target acquisition, kill, assessment. We'll leave it to Gerry to explain the details in a future article.)

Filling in for VP Heinz Schmitt, Al emphasized the future importance of "agile manufacturing" to US industry. He said the departments of Energy and Defense share a common, urgent need with US industry to be able to respond to rapidly changing market demands; to shorten the "product realization" cycle; to develop flexible, cost-competitive production systems; and to minimize environmental impact. Al said Sandia will make contributions in these areas through its new Center for Advanced Manufacturing Technology, working with industrial, government, and university partners. (Look for a LAB NEWS feature article soon about Sandia's programs and plans in this area.)

More Road Shows Planned

Other Sandia vice presidents will speak to Labs employees during future management road shows in Livermore and Albuquerque, says Shanna Lindeman, Executive Assistant to President Narath. The next sessions are being planned now and will likely take place in December, she says. ●LP

'Greening' Your Comings & Goings

The "average" employee who uses an alternative mode of transportation to get to work every day for a year drives 2,500 fewer miles, saves 150 gallons of gas, and keeps 200 pounds of pollutants out of the air, according to the Denver Regional Council of Governments. Albuquerque and Livermore aren't Denver, but similar savings are possible.

Several alternatives are available to Sandians who want to reduce their commuting costs while protecting the environment, says Linda Stefoin (7544), coordinator of Sandia's Rideshare program. Below are some common alternatives that many Sandians have found successful:

Ride Your Bike — Cycling eliminates fuel costs, does not pollute the air, and keeps you healthy. The City of Albuquerque has an extensive bike path system. Maps are available from Linda on 844-RIDE (844-7433) or the Sandia Employees Recreation Program (SERP) office. Cyclists must show their Sandia badges or employee ID cards to guards as they ride through Kirtland AFB gates.

Take the Bus — Nine SunTran buses run morning and evening commuter routes from such areas as Rio Rancho, downtown Albuquerque, north Wyoming Blvd., north Eubank Ave., Louisiana Blvd., Chelwood and Candelaria area, and the Comanche and Morris area. Also, a regular Wyoming bus runs all day. Cost is 75¢ per ride, or Sandians can purchase no-limit commuter passes for \$21 a month from the Credit Union. For route information, call Linda on 844-RIDE (844-7433).

Sanchez provides commuter bus service from both Belen and Los Lunas to Sandia. Drop-off and pick-up points at Sandia vary depending on the needs of riders. Although Sanchez buses can no longer drop riders off inside tech areas, they do stop at various Labs locations, including gates to most tech areas. Cost is \$35 to \$45 per month. For more information, contact Sanchez on 877-0697 or Linda.

Join a Vanpool — Vanpools are available for Sandians who live in outlying areas such as Santa Fe, Rio Rancho, Corrales, Bosque Farms, Los Lunas, Belen, Cedar Crest, Edgewood, Moriarty, and McIntosh. Current costs are between \$33 and \$93 per month, depending on the distance to Sandia. Contact Linda for more information.

Start or Join a Carpool — Sandians who carpool can set their own commuting schedules, and special Sandia parking spaces are reserved for carpools. Linda can help find other Sandia carpools who live close by and who have similar commuting needs.

In Livermore, Contact Cindy

Similar alternatives for getting to and from work are available to employees at Sandia, Livermore. Cindy English (8522) has bike route information, bus schedules, and vanpool and carpool information. Contact her on 294-2723. ●JG

PRESIDENT THANKS Sandians — President George Bush sent the note at right to Labs President Al Narath. Bush visited the Labs Sept. 15, and Bill Clinton visited just three days later. Both of the presidential candidates discussed their ideas about R&D and, in particular, the roles they foresee for Sandia and the other national labs as the US and other nations rely less on nuclear weapons (LAB NEWS, Sept. 18 and Oct. 2).

GEORGE BUSH

WASHINGTON

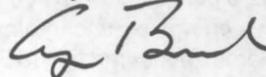
September 18, 1992

Dear Albert,

Just a short note to say how very much I enjoyed my visit to Sandia National Laboratories. It was fascinating to see the robotics lab and I was especially impressed with the pendulum. Please thank all the employees for their incredibly enthusiastic welcome.

I really appreciate all you did to make my trip such a success. Many thanks!

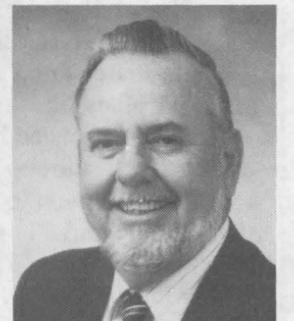
Sincerely,



Recent Retirees



Vern Zipprich
5102



Ross Yingst
35 5113

30



'The Guy with 120 Gears'

Sandian Helped Pioneer the Sport of Mountain Biking

These days, Tom Mayer of Advanced Vehicle Development Dept. 9616 helps build autonomous vehicles out on Sandia's robotic vehicle range. But 30 years ago, when Tom was a just a teenager, he enjoyed tinkering around with a different sort of experimental vehicle, in those days called "fat tire bikes."

Those early experiments with off-road bikes by Tom and a handful of other enthusiasts eventually evolved into the multi-million dollar industry and favorite pastime of thousands of Americans, known today as the sport of mountain biking.

During Fat Tire Bike Week in Crested Butte, Colo., recently, Tom was honored by fellow mountain biking aficionados as one of the "founding parents" of the sport. His photo and a plaque will be displayed at the Mountain Bike Hall of Fame in Crested Butte, next to the tributes of other mountain bike greats such as Tom Ritchey, Gary Fisher, John Tomac, and Ned Overand. In all, some 35 outstanding racers, frame builders, association founders, and sport pioneers have been inducted into the museum since it opened five years ago.

Junk Frames, Spare Parts

The sport of mountain biking has come a long way since the early days, says Tom. Back in the early '60s, when the sport officially "began," there was just a handful of riders in such places as Marin, Calif., and Durango, Colo. It was in Durango in 1963, at the age of 15, that he built his first "fat tire" bike — a "27-speed bike when 10 speeds were all they made," he says.

"Back in those days," he says, "we used anything we could find to build a bike. I had a pile of old junk frames that I found at auctions. I'd dig through and pick the lightest frame, then add spare



EARNING A PLACE in the Mountain Bike Hall of Fame signifies a new pinnacle in Tom Mayer's 30-year involvement in the sport.

parts and tires. The widest tires I could find were only 1-3/8 inches. Some parts had to be hand made. The old steel rims were always bending."

During the early years, Tom built numerous bikes, experimenting primarily with gearing. He says his first "decent" bike, by standards of those days anyway, was a Western Flyer that he welded freewheel sprockets onto. "I was known as the guy who had 120 gears on his bike," he says.

His tinkering with gears and gear ratios eventually led to the development of the Mountain Tamer Quad 4th chain ring, an adapter that allows an extra sprocket to be attached to the front chain ring.

"In college I went into electrical engineering," says Tom. "But I always enjoyed the mechanical stuff. I think tinkering around with bikes when I was young had a lot to do with what I do now." He also helped organize the first Iron Horse Stage Race in Durango (now called the Iron Horse Classic) in 1972.

Nowadays, says Tom, he constructs and maintains trails for mountain biking all over the Southwest. In his spare time, he teaches mountain biking classes and owns his own mountain biking equipment business. He says he rides "only about six days a week."

"The typical mountain biker has changed a lot in 30 years," he says. "In the early days, we were all 'die-hards,' building and testing our own equipment. Then the sport caught on in

the early '80s, and better equipment was being manufactured and sold in stores. Now anyone can get good equipment. As a result, mountain bikers today are typically people just interested in getting exercise and enjoying the outdoors."

"He truly deserves this honor," says Mike Lucero (7812), who has ridden with Tom and known him for years. "In his own quiet way, he's built trails and done lots of other work in the Albuquerque area for mountain bikers." ●JG



ROUGH RIDE — Thirty years ago, Tom Mayer (9616) would have had to spend time in the garage building his own bike before he could ride like this. But thanks in part to his experimentation with "fat tire" bikes as a teenager, sophisticated mountain biking equipment is readily available in stores today.

(Photos by Randy Montoya)

Welcome

Albuquerque — Lisa Chavez (7162), Linda Cleland-Ortiz (21), Margaret Davis (21), Lavender Fernandez (154), Margaret Grayson (21), Carey Holmes (154), Judy Jones (21), Marilyn Lewis (21), Roberta Lomadofkie (154), Janet Madden (21), Jeanne Martin (21), Rhonda Mendez (21), Debra Noel (21), Scott Rogers (155), Patricia Runyan-Beebe (21), Deanna Vanderhoofven (21), Tatia Veltkamp (21); *Other New Mexico* — Evalee Harley (21), Charles Olguin (7723).

Elsewhere: Massachusetts — Charles Potter (7715), William Rhodes (7722), Randall Saunders (1815); *Oklahoma* — Timothy Stanley (250); *Virginia* — Thomas Palmieri (4503).

Earnings Factors July 1992

Long-Term Savings Plan for Management Employees (LTSPME)	Earnings Factors
AT&T Shares	1.0200
Government Obligations	1.0139
Equity Portfolio	1.0399
Guaranteed Interest Fund	1.0067
South Africa Restricted Fund	1.0454
Long-Term Savings and Security Plan (LTSSP)	
AT&T Shares	1.0200
Guaranteed Interest Fund	1.0067
South Africa Restricted Fund	1.0441
Equity Portfolio	1.0398
Employer Stock Fund	1.0203

Supervisory Appointments

DENISE REED to Manager of Clinic Operations Dept. 7033.

Denise joined Sandia in 1980 as a staff nurse in the Industrial Medicine Department. In 1987, she



DENISE REED

was promoted to Supervisor of the Occupational Health Nurses Section. From 1990 to 1991, she was on a special ES&H assignment and was primary author of Occupational Medicine Program and subprogram documents.

Denise has a bachelor's degree in nursing from UNM and is a Certified Occupational Health Nurse. Before coming to the Labs, she was a staff nurse at Presbyterian Hospital Center from 1970 to 1973, and staff nurse and then head nurse at Kaseman Presbyterian Hospital from 1973 to 1980. Denise is a member of the American Association of Occupational Health Nurses and the New Mexico Association of Occupational Health Nurses.

She enjoys swimming, camping, and family activities. She and her husband Scott (2476) have two children and live in Paradise Hills.

CHRISTINE HAILEY to Manager of Parachute Technology and Unsteady Aerodynamics Dept. 1552.

Chris joined Sandia in 1985 as a member of the Aeroballistics Division, where she did aerodynamic



CHRIS HAILEY

analysis of bombs and helped develop water-entry technology. In February this year, she joined the Flight Dynamics Division and was project manager for Lightweight Exoatmospheric Projectile (LEAP) Program Support.

Chris has a BS in mathematics from Colorado State University and an MS and PhD in mechanical engineering from the University of Oklahoma. Before joining Sandia, she was a graduate teaching assistant and academic counselor at the University of Oklahoma. Chris is a member of the American Institute of Aeronautics and Astronautics.

She enjoys embroidery, camping, and fishing. Chris and her husband David have one child and live in the NE Heights.

EDWARD SAUCIER to Manager of Human Resources Information Systems Dept. 7532.

Ed joined Sandia in 1982 as a member of the Financial Systems Design Division. He was an analyst programmer on the accounting processor, payroll, and Management Information Data Access (MIDAS) development teams. He was also the financial production support project leader. In 1986, he transferred to the Procurement Systems Design Division as a member of the automated accounts payable team and became project leader of Integrated Procurement System Redevelopment. In 1991, he



ED SAUCIER

joined the Information Systems Development Division as the financial information system development project leader.

Ed has a BBA in accounting from the University of Texas and an MS in management information systems from Texas Tech University. Before joining the Labs, he worked for El Paso National Bank and a CPA firm in Lubbock, Tex. Ed has been on the board of directors for the local chapter of the American Red Cross and is the project manager for application development at SHARE, IBM's national user group.

Ed enjoys travel, volleyball, golf, photography, and target shooting. He and his wife Geri (7700) have one son and live in the NE Heights.

KENNETH HANKS to Manager of Nuclear Systems Project Management Dept. 6516.

Ken joined the Labs in 1983 as a member of the Central Project Office for Pulsed Power Projects, where he was project manager for the Saturn Project.



KEN HANKS

He provided project management support for PBFA II, Hermes III, Strategic Defense facilities, and other projects. In 1986, he joined the Facilities Organization and continued project management. He was project manager for the High-Power Microwave Project for the Air Force Weapons Lab (now Phillips Laboratory) and project management leader for the Weapons Production Primary Standards Laboratory. He was a member of the ad hoc committee to review the STRYPI XI Rocket project for Sandia management.

Ken was named Acting Supervisor in 1990 of the department he now heads, a department that is a focal point for program and project team building, planning communication, program development, documentation, and training activities.

Ken has a BS in mechanical engineering from New Mexico State University. Before joining Sandia, he worked for Ling-Temco-Vought, Los Alamos National Laboratory, and Los Alamos Technical Associates. Ken is a member of the Project Management Institute and the American Society of Mechanical Engineers. He was named a member of the College of Engineering's 100 Outstanding Alumni at the NMSU Centennial in 1988.

He enjoys restoring '50s cars, tennis, skiing, snowmobiling, and other outdoor activities. Ken has three sons and lives in Tijeras Canyon.

GERALD HOCHREIN to Manager of Aerospace Systems Test and Assembly Dept. 9813.

Jerry joined Sandia in 1966 as a member of the Reentry Vehicle Aerothermodynamics Division, where he performed thermal design calculations and aerodynamic heating analyses on rocket payloads and reentry vehicles.



JERRY HOCHREIN

He joined the Applied Fluid Mechanics Division in 1973 and was primary aerothermodynamics analyst for the Sandia/Air Force Materials Study rain erosion program. In 1976, he transferred to the Exploratory Systems Division and was an analyst for terrain-guided navigation projects for the Navy and Air Force. Jerry transferred to the Advanced Systems Division in 1984. He was project manager for maneuvering systems technology, technology development flights, and penetration-aids development programs for the Air Force, Army, and Strategic Defense Initiative. He also served as chairman of the 9800 Ex-

plosives Operations Self-Assessment Team (EOSAT).

Jerry has a BS in mechanical engineering and an MS in mechanical and aerospace engineering from the Illinois Institute of Technology. In 1992, he was named a Distinguished Member of the Technical Staff. He also received a Corporate ES&H Award for his EOSAT work.

Jerry enjoys camping, fishing, skiing, hiking, and traveling. He and his wife Marie have two children and live in the NE Heights.

Red Ribbon Week

Support a Drug-Free Lifestyle

A red ribbon can show your endorsement of a drug-free lifestyle, says Michaeli Portman of Preventive Medicine and Employee Assistance Program Dept. 7035.

The last week of October — this year, Oct. 24-Nov. 1 — is a time when the Drug-Free America Red Ribbon campaign gives communities and employees nationwide a special chance to focus on drug awareness and prevention. The first campaign was in 1980, and there has been organized participation at Sandia for the last three years.

Michaeli urges Sandians to wear red clothing to work on Wednesday, Oct. 28, and to wear a red ribbon all week.

Total Life Concept (TLC) is sponsoring "action booths" where red ribbons and campaign information will be available the week before the campaign. Times and places: Bldg. 800, 7:30-9 a.m., Oct. 20 and 21; Gate 4, 7:30-9 a.m., Oct. 20; Gate 6, 7:30-9 a.m., Oct. 21; Cafeteria, 11:30 a.m.-12:30 p.m., Oct. 21 and 23; and Bldg. 823, 4-4:45 p.m., Oct. 21. Ribbons and information will also be available at the TLC office in MO170.

The organization with the most people picking up ribbons will be recognized for its support.

TLC and Sandia's Employee Assistance Program (EAP) work year-round to promote drug-free, healthful lifestyles. TLC courses, classes, and seminars — announced in the *TLC Update* — focus on health, stress management, fitness, and nutrition. EAP offers assistance with alcohol and drug problems, marital concerns, job worries, problems with children, and other needs.

Special EAP Seminars Scheduled

To better serve employees, dependents, and retirees, the Employee Assistance Program (EAP) has recently expanded its counseling services. Two seminars will provide information about new procedures and added services. The seminars are both at the TLC conference room (MO170), on Oct. 22 and 29, from 11:30 a.m. to 12:30 p.m.

Take Note

Sandians and retirees interested in forming a Lions Club should call Harry Kovaschetz on 293-4710. Lions volunteer their time and raise funds to help needy members of the community, in areas such as drug awareness, diabetes awareness, sight conservation and work with the blind, hearing and speech action and work with the deaf, and environmental services. In addition to such service projects, Lions enjoy each others' fellowship. The International Association of Lions Clubs includes more than 38,000 local clubs with membership exceeding 1.3 million in more than 160 countries.

Congratulations

To Carol (1815) and Doug (1513) Adkins, a son, Jeremy Ray, Sept. 22.

To Penny and Vince (6115) Tidwell, a son, Austin Ryan, Oct. 3.

Sandia News Briefs

Open House Today Celebrates TRED's One-Year Anniversary

Sandia and DOE are sponsoring an open house today (Oct. 16) to mark the one-year anniversary of the Technology-Based Regional Economic Development (TRED) program. The TRED program targets Sandia's technology transfer efforts at small and medium sized businesses in the Southwest. In its first year, TRED worked with more than 100 businesses and conducted various tours and technical workshops.

The open house will take place at the University of New Mexico Research Park conference room (901 University Blvd. SE) from 3:30 to 6:30 p.m. Employees from Technology Transfer Center 4200 will be present to talk with local business people, state economic department employees, and community leaders. Anyone interested in working with the Labs is welcome to attend, along with interested Sandians.

New Group to Oversee Transfer, Cleanup of DOE Sites

DOE has established the Office of Facility Transition to coordinate and oversee the transfer and cleanup of department facilities formerly used for defense and energy research programs. Willis Bixby, former Deputy Manager of DOE's Richland Field Office in Washington state, was named Deputy Assistant Secretary in charge of the new office, which is part of the Office of Environmental Restoration and Waste Management. Bixby's organization is charged with ensuring that proper financial and environmental policies are followed during the transfer and cleanup of contaminated sites during the next few years.

Labs, Bus Maker Designing Wheelchair Lift for Buses

Sandia has teamed with Transportation Manufacturing Corporation (TMC), the nation's leading bus manufacturer; in applying advanced sensor technology to develop an improved wheelchair lift mechanism. The project with the Roswell, N.M., company is being administered through Sandia's Technology-Based Regional Economic Development (TRED) program.

Dale Brandt of Real-Time Monitors and Controllers Dept. 2337, the project team leader, says the collaboration is a good example of how Sandia and industry can work together to create better products.

The hydraulic lift the team is developing, which carries wheelchair passengers from the curb to the bus, would use Sandia-developed sensor technology to enhance its sensitivity to load changes and uneven surfaces under the lift.

Sandia, Los Alamos, and Phillips Labs Create Space Institute

Gerry Yonas, VP for Systems Applications 9000, met with representatives from Los Alamos National Lab and the Air Force Phillips Lab recently to sign into agreement a new three-lab Institute for Advanced Space Materials and Structures. The Institute is the latest outgrowth of a strategic alliance established by the three laboratories in January 1991.

The Institute — which will focus on qualifying new materials, processes, and structural concepts — is expected to improve the reliability and reduce the long-term costs of new US spacecraft and space-based systems. The program is also expected to involve several research universities and other DOE and DoD laboratories.

Send potential Sandia News Briefs to Editor, Dept. 7162.

Upcoming Quality Month Events

Sandia's commitment to Total Quality Management (TQM) stems from the perception that the Labs' future will depend on combining good business practices with good technology.

To emphasize the importance of TQM and increase awareness of the progress Sandia has made in that area, yesterday's forum, Successes in a New Culture, will be followed up Oct. 26 with a Quality Action Request focus. It will be presented in Building 822; Rooms A and B, from 1 to 3 p.m.

During the forum, both those who submitted requests identifying areas for improvement in Sandia's work processes and those who implemented them will talk about their successes and the lessons they learned from the process.

Here is a schedule of events planned for the remainder of National Quality Month:

Oct. 20 — "Creative Problem Solving & Continuous Improvement," Chic Thompson, president of Creative Management, 8:30-11:30 a.m., Technology Transfer Center (TTC), Albuquerque.

Oct. 22-23 — "AT&T Quality Conference," 12:30-4:30 p.m. each day, TTC, Albuquerque; simultaneous screening (11:30 a.m. to 3:30 p.m.), Building 904, Livermore.

Oct. 26 — "Successes in a New Culture Forum," Quality Action Request focus, 1-3 p.m., Building 822, Rooms A and B.

Oct. 29 — "Quality — You've Got to Believe It to See It," Ed Guss, senior executive at the Federal Quality Institute, 10-11:30 a.m., TTC, Albuquerque; simultaneous screening (9-10:30 a.m.), Building 904, Livermore.

fixed feedback

Q: I have experienced near collisions with vehicles twice within the past three weeks as I left Gate 11. These incidents occurred on the street outside the Tech Area while I was trying to cross the street at the marked pedestrian crossing. I suggest the placement of speed bumps on both approaches to the marked pedestrian crossing to improve the safety of pedestrians crossing at this location. Would you please contact the appropriate Sandia and Kirtland authorities to investigate this situation?

A: The Gate 11 situation has been surveyed by the Sandia Traffic Committee. The actions taken as a result of the survey were installation of "Pedestrian Crossing" signs, posting of 15-mph speed limit signs, and the repainting of the crosswalk. Speed bumps were deemed unnecessary and unsafe, a decision endorsed by the Kirtland AFB Traffic Department.

You should always be aware, though, that crosswalks and signs do not automatically ensure safety to pedestrians. One should always be aware of vehicular traffic before entering the crosswalk. If you notice a vehicle that deliberately does not stop or, in your opinion, is going faster than the posted speed limit, please note the license plate number of the vehicle and contact Capt. Garland Tilley (7435) on 4-6410.

Neil Hartwigsen (7900)
Joe Archuleta (7104)

Q: I notice that the lights installed in the parking lot south of Buildings 821, 822, 823, and 825 were removed and replaced with stronger poles.

• Did the contractor absorb the cost for the

deficient design?

• Who paid for the damage to the employee's car that was damaged when one of the lights blew over?

A: The parking lot lighting poles you refer to (as well as those in two other locations) were installed toward the end of 1990. In October 1991, one of the light poles fell onto a Sandia employee's car (fortunately there were no injuries). Subsequent investigation revealed evidence of premature failure at the base weld connection in other light poles. Researching the design and installation revealed no inadequacies. Metallurgical analysis of the pole indicated failure due to fatigue. It was deduced that due to the straight square shape of the poles that a harmonic vibration was induced by wind, which caused unexpected stress at the plate connection.

The poles were then taken down while replacement poles were ordered. The new poles are of a "soft-square" design; they have large radius bends which will lessen the wind effect. Additionally, there are vibration dampeners installed as well, to attenuate the vibration.

Since there was neither fault nor negligence by Sandia, all financial ramifications were borne by the contractor, such as damage to the employee's vehicle and pole replacements.

Neil Hartwigsen (7900)

Q: As a relative newcomer to Sandia after 25 years in commercial industry, I was delighted to find that Sandia did not have nearly its share of "incompetent empires" that placed themselves in the way of getting things done.

In recent months, the situation seems to be

changing. A very smart way to handle telephone directory updates is gone, replaced by an obsolete-on-issue, bound book that won't even stay open while you hold the telephone. This book is defended as cost-saving without even considering the cost of staff trying to find each other.

Please consider the price of nonconformance, which includes staff hours coping with new obstacles to project-completion. Don't expect staff to change; fix the problem.

A: We anticipate completion soon of a new automated phone directory system that will provide on-line update and retrieval of directory information. Individuals or organization secretaries will then be responsible for keeping their directory information up to date.

The hardcopy directory will be published using this data, making it much less costly to produce: The latest issue took more than two months to collect, compose, and print. We plan to deliver a new issue about every three months, which will meet the needs of most Sandians.

It's unfortunate that you find the new Sandia directory format such a disappointment. The full directory is no less accurate when issued than the directory updates were when they were issued; the source for the information is the same. Also, the bound directory is preferred to the old loose-leaf version with periodic updates by 80 percent of those who responded to a survey on the subject.

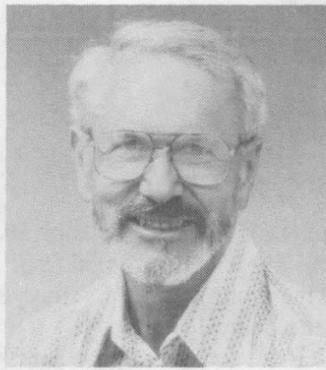
I hope the changes we made in producing the current directory, more timely issues of the directory, and the availability of an on-line directory will better meet your needs.

Grant Claycomb (7151)

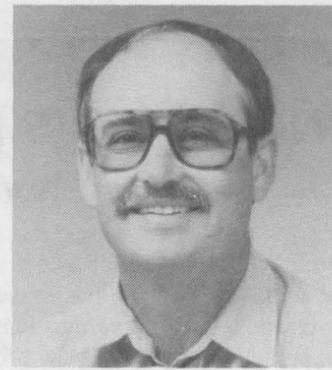
MILEPOSTS

LAB NEWS

October 1992



Lyle Schultz
5151 35



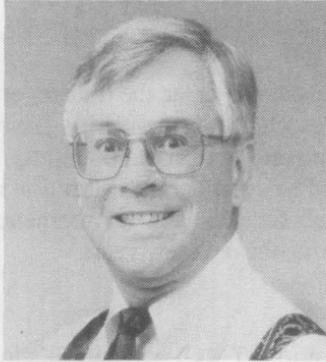
David Stout
7435 15



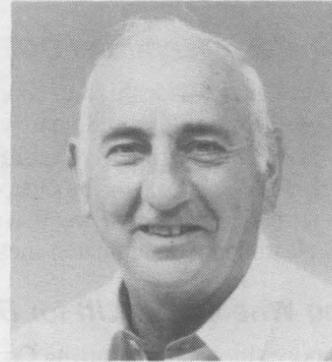
Patricia Neiswander
6623 30



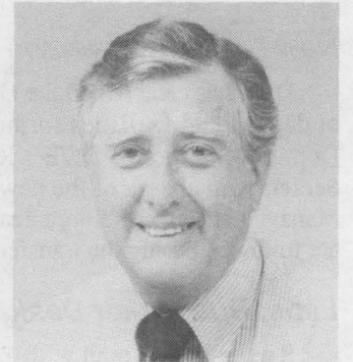
Edwin Oakes
2663 35



Gerald Barr
6903 25



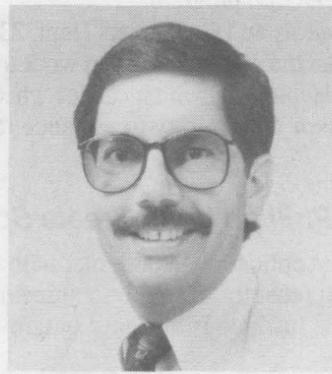
Lawrence Kent
2761 35



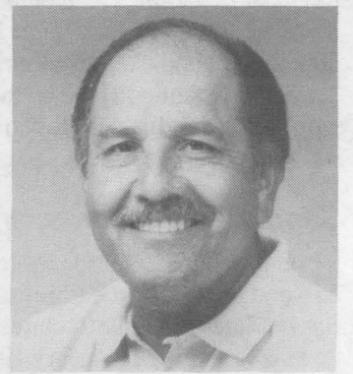
Fred Gunckel
2643 25



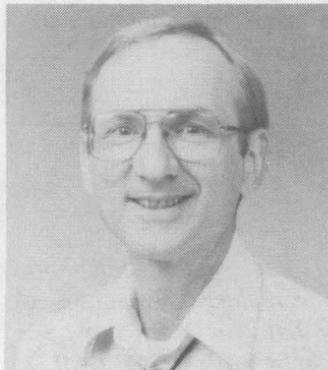
David Schafer
6347 30



David Palmer
7221 15



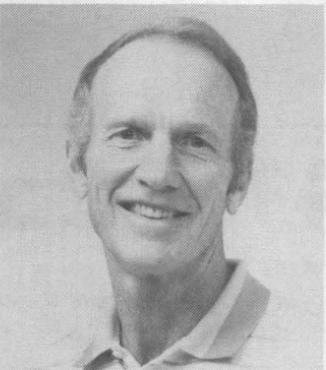
Jerry Silva
9236 25



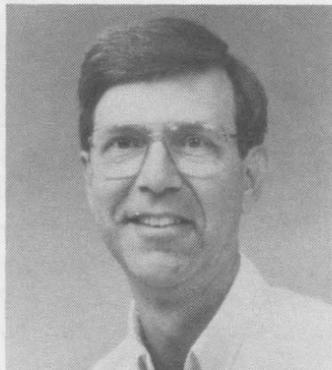
Thomas Sullivan
9133 30



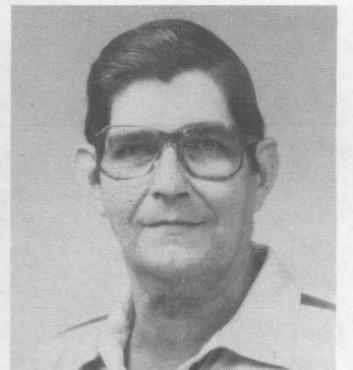
Linda Erickson
7031 15



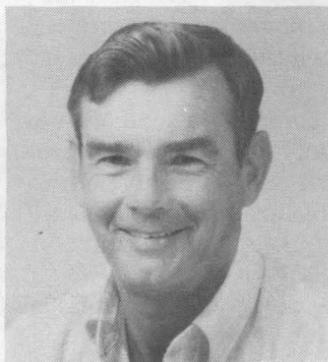
Louis Cropp
6474 30



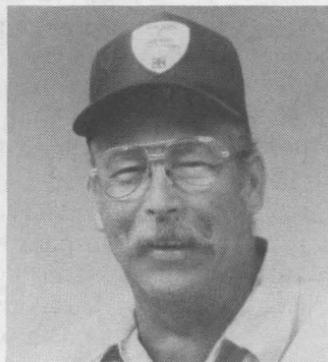
David Benson
1512 20



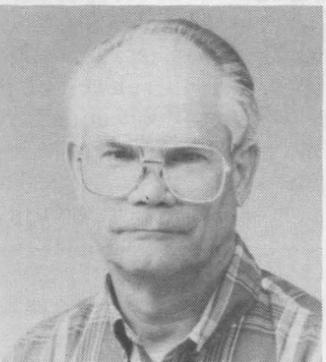
Jim Clabaugh
5115 30



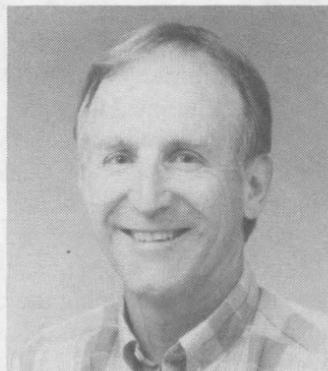
Arthur Lynch
7722 30



Jerry Powell
7614 15



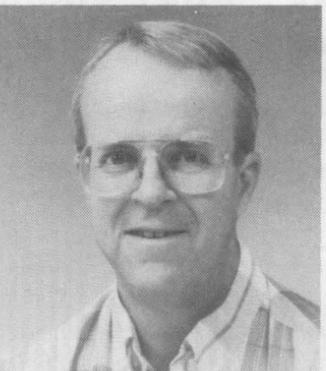
Kenneth Shrock
9811 35



Charles Healer
2481 25



Curtis Mueller
2818 30



Bob Easterling
323 25



Robert Isidoro
9321 35

Take Note

Collaborative opportunities for US-Japan research and development is the subject of a symposium to be held Nov. 2 at the Hyatt Regency Hotel in Albuquerque. Sponsors include the Center for the Study of Japanese Industry and Management of Technology of New Mexico and the University of Texas at Austin, along with other US and Japanese organizations. Symposium topics include

electronic devices, energy, information technologies, computing, environmental technologies, and emerging technologies. Participation is free to those responding before Oct. 19. Attendance is on a first-come basis. For more information, contact Wallace Lopez on 277-1025.

The Rio Grande monthly chapter meeting of

Association of Records Managers and Administrators International will be held Oct. 28 at La Posada in Albuquerque. Wendy Cain (Dean Witter account executive and certified financial planner) will present "How to Get Nowhere from Here." Optional dinner is at 6:30 p.m., and the meeting begins at 7:30. For reservations and more information, call Kay Schardein on 292-3524.

UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS

Deadline: Friday noon before week of publication unless changed by holiday. Mail to Dept. 7162.

Ad Rules

1. Limit 20 words, including last name and home phone (the LAB NEWS will edit longer ads).
2. Include organization and full name with each ad submission.
3. Submit each ad in writing. No phone-ins.
4. Use 8 1/2 by 11-inch paper.
5. Use separate sheet for each ad category.
6. Type or print ads legibly; use only accepted abbreviations.
7. One ad per category per issue.
8. No more than two insertions of same "for sale" or "wanted" item.
9. No "For Rent" ads except for employees on temporary assignment.
10. No commercial ads.
11. For active and retired Sandians and DOE employees.
12. Housing listed for sale is available for occupancy without regard to race, creed, color, or national origin.
13. "Work Wanted" ads limited to student-aged children of employees.

MISCELLANEOUS

DOUBLE GARAGE DOOR, 16-ft., translucent rose colored fiberglass and aluminum, w/all hardware, \$60; king-size waterbed frame, dark pine, \$30. Stermer, 255-1083.

SOFA, rust, 8-ft., excellent condition, \$300 OBO; Certnin-Vega speakers, 15Rs, excellent condition, \$250 OBO. Mares, 877-4210 after 6 p.m.

TOYS: Cabbage Patch dolls, "Oh, Jenny" dollhouse, tree house, pool, including people and furniture, good condition. Duda, 292-2015.

FIVE NINTENDO GAMES, \$45. Munson, 822-1497.

IMPEX RECUMBENT EXERCISE BIKE, 62 miles on odometer, paid \$199, sell for \$75. Durkee, 255-4211.

TWO CONCERT TICKETS: Crystal Gale at the Pit, Nov. 7, choice seats, \$22 ea. Case, 293-5466.

COMPUTER PRINTER, \$75; 3X9 range finder rifle scope, \$95; 200-amp electrical service, \$95. Dean, 299-3281.

HEATHKIT MANUALS for GR200 solid-state TV, \$20; TV w/o picture tube, free w/manuals. Loepke, 299-7338.

MOVIE CAMERA, projector, projector table, screen, light, 3 take-up reels, splicing tapes, instructions, \$50/all. Smith, 299-7151.

VASQUE HIKING BOOT, size 8-1/2, almost new, \$30; backpack, body-style, excellent, \$30; shotshell reloader, 20-gauge, \$30. Wright, 296-3850.

CHIHUAHUA/SCHNAUZER CROSS PUPPY, female, 7 wks. old, \$40. Fajardo, 296-6845.

CAMPER SHELL, custom-made fiberglass, fits Isuzu and Chev. S10 pickups, screen windows, 2 yrs. old, more than \$600 new, asking \$350 OBO. Camal-Elder, 891-3643.

INFANT WALKER, swing, crib mobile, changing table, soft seat, best offers. Laderach, 888-0712.

SOUNDESIGN RACK SYSTEM, AM/FM stereo w/cassette, 8-track, & phonograph, \$75 OBO. Sikora, 881-4741.

EXERCISE EQUIPMENT: Schwinn Bowflex machine, \$499; extensive Olympic weight set, w/bench, leg extension, cable pulldown, squat cage. Jakowatz, 299-9271.

SKI BOOTS, Lange Z-Sports, size 12-1/2, good condition, \$30. Gunckel, 298-1749.

SOFA SLEEPER, queen-size, \$100; sofa 3-cushion, \$50; color TV, \$50; recliner, \$50 OBO. Landa, 821-3210.

SEARS CAMCORDER, \$350. Murphy, 260-0082.

CANON AE-1 CAMERA, manual with 28mm, 80-200mm lenses, & Vivitar flash, excellent condition, includes leather body case, \$350. Garcia, 293-2810.

REFRIGERATOR, 17 cu. ft., w/ice-maker, 23 yrs. old, similar 33-yr.-old model still in use, Sears, copertone, \$175. Hale, 298-1545.

GARAGE SALE: Oct. 17 & 18, 8 a.m.-4 p.m., Childcraft learning toy, books, tapes, paperbacks, more, 9509 Cargo Ave. NE. Dobias, 822-0013.

'82 STARCRAFT CRANKUP TENT TRAILER, sleeps 5, 3-way refrigerator, added storage space, toilet, awning, excellent condition, \$2,200. Henderson, 255-1941.

SKI & TRAM SEASON PASS, for Sandia, tram valid through June '93, \$300. Schultz, 821-5158, 883-0555.

CHILDREN'S CAR RESTRAINTS (2), 40 lbs., \$20 ea.; Tike's treehouse, ladder, & slide, \$25; Hedstrom 16-in. tricycle, \$15. Karnowsky, 255-4045.

RUNNING BOARDS, diamond pattern, 7'6" long, can be shortened, \$55; NPR 86P piston/eye set, 356/912 Porsche or VW, \$65. Fine, 281-2116.

BAR STOOLS (3), wooden, w/swivel tops, back & arm supports, fruit-wood color, sturdy. Branstetter, 292-5978.

METAL DESK, \$25; truck toolbox, \$65; screen door, \$15; overstuffed chair, \$10; child's kitchen, \$25; hamster cage, \$20. Parr, 892-5618.

SKI BIB, size 12, hot pink, by Inside Edge, excellent condition. Wagner, 823-9323.

STAIR CLIMBER, Sears model 3000P, excellent condition, digital performance readout, \$100. Schoeneman, 281-0036.

LOBO BASKETBALL SEASON TICKET, section 23, row 32, \$238. Sanchez, 298-3130.

GARAGE SALE: lots of misc., Oct. 17, 7:30 a.m., 1209 La Charles N.E. Everett, 296-0920.

KENMORE REFRIGERATOR, 25 cu. ft., freezer side-by-side, cold water & ice dispenser, like new, \$700. Lopez, 883-4860.

MEDITERRANEAN-STYLE BEDROOM SET, 5-piece, includes queen-size headboard, 2 dressers, 1 mirror, \$250 OBO. Plummer, 296-4327.

RANGE HOOD, black, new, \$20; antiques: unusual 9-drawer cherry desk, \$200; oak Queen Anne entry table, \$200. Sisneros, 899-8048.

PIMENTAL GUITAR, acoustic, steel strings, w/rosewood back & sides, spruce top, ebony fingerboard, great sound, \$595. Mills, 823-4484.

GAS DRYER, Sears Kenmore, top model, full features, used 1 yr. only, excellent condition, must sell, \$250 OBO. MacCosbe, 281-0775.

TYPEWRITER, Casio, memory w/spell check, fonts, like new, \$90; trailer hitch wheel, \$25; boat motor, \$450. Moreno, 294-4268.

COUCH & LOVE SEAT, 2 recliners, kitchen table set w/4 chairs, tables, phone hutch, waterbed, much more. Marchi, 291-9681.

GT2000 CHILD CAR SEAT, 5-point harness, adaptable from baby through 4-yr.-old; Gerry Toddler car seat, almost new, \$40/ea. or \$70/both. Jones, 298-2067.

RYDER TOW DOLLY, 2-wheel, w/light kit for car in tow, \$575. Jeffrey, 294-4676, leave message.

PAMPAS GRASS PLANTS, 5 gal. size, available Oct. 26, \$5/ea. Kidd, 256-1020.

ANTIQUA MAPLE BED, single, low, new firm mattress, \$100. Pendall, 265-3008.

GARAGE & MOVING SALE: 4734 Tierra Encantada NE, Oct. 17 & 18. Ayers, 888-8922.

WEIGHT SET/BENCH, \$75; queen-size waterbed, \$70; garbage disposal, 3/8-hp, \$35. Barnard, 256-7772.

COFFEE TABLE, glass & wood, like new, \$50. Romero, 857-0466.

IBM PS/2 COMPUTER, model 25, needs mother board repair. Ginn, 883-0004.

WINCHESTER FEATHERWEIGHT XTR70 RIFLES (2): .270, w/3-9X Leopold scope, \$575; .243, w/Redfield rings & mounts, used once, \$425. Zaorski, 281-9194.

BABY FOOD JARS, free. Krause, 299-0931, leave message.

BARBIE DOLLHOUSE, 3'H x 4'L, w/furniture, horse, piano, \$85; twin bed comforter, w/drapes, \$20; dry-erase board, w/tray, 24" x 36", \$20. Newcom, 293-5180.

PINE LIVING ROOM SET, 6-piece, sofa, love seat, chair, coffee table, 2 end tables, oatmeal-colored cushions, \$200 OBO. Smith, 898-2459.

WEIGHT MACHINE, Soloflex, excellent condition, w/butterfly & leg extensions, \$750. Biffle, 293-7043.

STUDENT VIOLA, 3/4-size, w/case, \$200. Bradley, 293-9586.

DISHES, 20-piece place setting for 4, Faltzgraff stoneware, "Aura" pattern, \$15. McCall, 266-4483.

POOL TABLE, regulation-size, leather end caps, wood rails, 1-in. full slate, accessories, Delta Billiards, \$600. Sons, 294-5965.

SCRAP PLYWOOD & 2 x 4s, free. Armentrout, 294-4140.

WASHER & DRYER, Frigidaire, almond, 4 yrs. old, \$250. Harrington, 294-6368.

AT&T 6300 COMPUTER, 30-Meg. hard drive, 640K, co-processor, color monitor, \$400. Sutherland, 345-1183.

CHICAGO BULLS TICKETS, Friday, Oct. 23, 7:30 p.m., section 17, row 5, 4 seats. Shortencarrier, 293-8053.

AT&T 6300 COMPUTER, 640K RAM, 20MB HD, mono monitor, all original manuals, \$295 firm. Roady, 299-6084.

'82 COACHMAN TRAVEL TRAILER, 24-ft., deluxe pkg., 2 doors, island bed, front lounge, awning, AC, TV antenna, clean, \$5,750. Luikens, 881-1382.

TWO AIRLINE TICKETS, 1-way to San Francisco, Nov. 2, female names, best offer. Zeuch, 296-4969.

TRAVEL TRAILER, '87 Sprinter, 24-ft., sleeps 7, like new, automatic pilots on all appliances, \$7,500. Pritchard, 299-3543.

ELJER BAR SINK, new, beautiful stainless steel & teak wood, lists for \$700, asking \$350. Curzi, 296-5386.

TRANSPORTATION

'71 BUICK SKYLARK, V-8 engine in good condition, AC, bucket seats, \$700. Petraglia, 889-0725.

GIRL'S BICYCLE, 20-in., good condition, \$35. Duda, 292-2015.

'79 SUZUKI GS 425 MOTORCYCLE, 19K miles, \$500 OBO. Loepke, 299-7338.

'80 MAZDA PICKUP, w/camper shell, good overall condition, \$1,895. Lucero, 265-4824.

'80 FORD FAIRMONT, 4-dr., AT, PS, AC, cruise, new engine, \$900. Bryce, 881-4858 after 6 p.m.

'86 ISUZU TROOPER II, 4-WD, 2-dr, AC, 5-spd., brown, 95K well-maintained miles, \$5,200 or trade for car. Boyce, 293-1465.

FORD MUSTANG FASTBACK, V-8, rebuilt engine & transmission, \$1,500 OBO. Rainhart, 268-1148.

BOAT, 16-ft. Runabout, sunshade, 55-hp Chrysler engine, fishfinder, w/drive-on trailer, \$1,250. Revels, 344-3033.

'69 MERCURY MONTEGO, AT, AC, PB, 80K miles, 1 owner, \$1,000. Hall, 881-2344.

'88 BOUNDER 33W MOTORHOME, loaded w/extras, including auto hydraulic leveling system, will take reasonable trades. French, 298-9292.

'89 GMC JIMMY S-15, Sierra Classic Pkg., 4-WD, 4.3L EFI, AC, PS, AT, wheels, cruise, 64K miles, book \$11,375, asking \$10,600 OBO. Lyons, 281-9283.

'49 PLYMOUTH SPECIAL DELUXE, 90% restored, new interior (perfect), 80K miles on original engine, new paint. Dawson, 293-2804.

'74 FORD F100 PICKUP, LWB, AT, PS, rebuilt V-8 engine, camper shell, runs well, body good, \$2,000. Stuart, 265-7315.

'79 CHEV. C-10 PICKUP, new paint & tires, shell, SWB, standard, very good condition, \$2,100 OBO. Marquez, 836-5153.

'92 MAZDA B-200 PICKUP, 5-spd., very low miles, AM/FM cassette, red exterior, gray interior. Smith, 292-7540.

'85 FORD F150 PICKUP, supercab, 8-ft. bed, 302 EFI, AC, AT, cruise, 77K miles, custom topper shell w/carpeted inserts, \$6,500. Mitchell, 299-5144.

BOY'S DIRT BIKE, \$25. Barnard, 256-7772.

'86 HONDA ACCORD LXI, hatchback, standard, runs well, 79K miles, asking \$4,500. Schultz, 292-0686.

'85 CAN-AM 500 ASE ENDURO, excellent condition, many new components, garaged last 3 yrs., must sell, \$1,000 OBO. Zarick, 836-5703.

'87 DOLPHIN MOTORHOME, 21-ft., 23K miles, excellent condition, \$15,900. Prekker, 892-4107.

'85 MERCURY MARQUIS BROUGHAM, 1 owner, gray, 4-dr., AC, AT, PB, PS, cruise, tilt, AM/FM cassette, new radials, \$2,995. Gregory, 344-1436.

'74 SCOUT II, 4-WD, AT, \$1,500. Burchett, 281-0708.

BICYCLES: 20-in. dirt bike, \$30; boy's Schwinn 10-spd., 24-in., \$50; girl's 26-in. touring 10-spd., \$50. Bradley, 293-9586.

'88 JEEP CHEROKEE, 4-dr., full power & air, call for details, \$9,000 OBO. Wiseman, 292-2827.

'82 MAZDA RX-7, 98K miles, 5-spd., AC, sunroof, 1 owner, new engine & clutch, all service records, \$3,000 OBO. Godshall, 294-2214.

'88 FORD TAURUS LX STATION-WAGON, fully loaded, V-6, AC, third seat, immaculate, 61K miles, \$800 below book, \$6,995. Sanger, 828-1678.

'72 CORVETTE, w/T-tops & luggage rack, AT, 350 engine, yellow, in good condition, best offer. Nicolary, 291-1943.

'83 NISSAN SENTRA WAGON, AC, sunroof, good condition, 125K miles, \$1,400 OBO. Lambert, 281-5798.

'83 MERCEDES 380 SL, silver blue, both tops, excellent condition, \$23,500. Hezlep, 293-3146.

'86 BUICK CENTURY, 4-dr. custom sedan, AT, AC, tilt, stereo, 61K miles, \$3,500. Davis, 294-4614.

GIRL'S SCHWINN BICYCLE, 10-spd., 24-in. Wagner, 823-9323.

REAL ESTATE

1 ACRE, Forest Lakes, Durango Vallecitas area, all utilities, tall pines, beautiful, valued at \$13,000, sell for \$5,500. DeHaan, 881-3967.

4-BDR. HOME, beautiful, NE Heights, 2,900 sq. ft., professionally decorated, LR, DR, family room, wet bar, below appraisal at \$195,000. Jones, 298-2067.

NE DUPLEX, \$320 plus rent from other apartment pays mortgage, (down payment plus closing is \$6,000), \$90,000. Grant, 821-3822.

3-BDR HOME, .315 acre, near Ladera Golf Course, 1-3/4 bath, 1,340 sq. ft., pool, patio, kennel, play area, \$87,500. Zarick, 836-5703.

4-BDR. HOME, Nor Este Estates, 2 baths, 2-car garage, Presley, fully landscaped, La Cueva High School, 1,925 sq. ft., excellent condition, \$149,900. Sanger, 828-1678.

3-BDR. HOME, in La Cueva area, new carpet, ceramic tile, 2-car garage, large yard, \$106,900. Neal, 823-2739.

WANTED

REFRIGERATOR, almond, also washer & dryer, must be in good condition and reasonably priced. Need around Nov. 1. Tremi, 888-3917.

"HOOKED ON PHONICS" SET, to rent or borrow, to examine before buying one. Fajardo, 296-6845.

WORD PROCESSING PROGRAM, "Omni Writer," to run on Commodore 64. Coleman 884-5009.

HOMES, for Wolf/Hybrid, neutered, 1-2 yrs. old; English springer spaniel, black & white, 6 mos. old, spayed, shots; Shepherd-cross, 6 mos., neutered, shots, loves kids. Rex, 764-9655.

FOUR OLD PUTTERS, to cut down for grandchildren. Underhill, 294-5774 after 6 p.m.

IBM PS/2 COMPUTER, model 25, complete or just the mother board. Ginn, 883-0004.

NAMES OF SANDIA MEMBERS of Midtown Athletic Club, corporate membership rates available if there are 5 or more Sandia members. Duncel, 268-9991.

BIBLE LIBRARY CD-ROM SOFTWARE PACKAGE, advertised in DAK and other mail order catalogs. Schofield, 292-7220.

AVON CHAMPAGNE FLUTES, w/hummingbird design, need 3-4. Krause, 299-0931, leave message.

'82 THROUGH '84 HONDA, single-owner car, in excellent condition, w/less than 90K miles (Civic 2-dr. hatchback preferred). Jones, 296-3998.

WORK WANTED

UNM GRADUATE STUDENTS will tutor students in English & related subjects, reasonable rates, references available. Hunter, 842-0300.

SHARE-A-RIDE

CORRALES RIO RANCHO VANPOOL has space available for new riders. Kuszmaul (892-4466) or Boatman (892-3570).

Coronado Club Activities**Kids' Bingo Tonight: Somebody's Gonna Win a Game Boy!**

BINGO AND BUFFET are on the Club calendar tonight, Oct. 16. First, enjoy the a la carte buffet, beginning at 5 p.m. and continuing until 7 p.m. Then let the youngsters grab their game cards and get ready to yell "Bingo!" Bingo starts at 7 p.m. and features a grand prize that just about any kid would love: a Nintendo Game Boy system. This is an evening for the whole family!

BOO! Wanna visit a haunted house? Wanna see a magical entertainer? C-Club members' kids (and guests) will get scads of scares and loads of laughs at the annual Children's Halloween Party on Sunday, Oct. 25. The action starts at 6 p.m. and continues until 9 p.m. — that's three full hours of games, activities, and goodies. Admission is \$1.50 (guests \$2.50) for the kids, and Moms and Dads get in free.

BOO AGAIN! There's something special at the regular Thursday bingo night Oct. 29. In honor of Halloween, all players in costume will

receive \$1 off bingo packets, and winners in costume will find a little something added to the pot. The big prize is \$250 worth of groceries from Smith's Supermarket. Card sales and the buffet line open at 5:30 p.m., and early-bird bingo starts at 6:45 p.m. Remember — Club members who show their membership cards always get \$1 off their bingo packets.

CATS COME BACK — Bob Weiler and his Cats play for the Tea Dance this Sunday, Oct. 18, from 1 to 4 p.m. Before the dance, it's brunch time — from 10 a.m. to 1 p.m. That's all you care to eat for just \$6.95. (Members' guests pay \$7.95, children 4-12 are charged \$2.50, and kids 3 and under are free.) Reservations are required — call 265-6791 now.

GET YOUR KICKS on the dance floor next Friday, Oct. 23, when the Isleta Poor Boys make music that won't let you stop dancing. When these Club favorites are pickin' and singin' their tunes

from 7 to 11 p.m., you'll feel like a real country boy or girl. No Friday evening would be complete without some fine vittles, so here's your choice: New York sirloin strip (\$11.95), grilled halibut (\$10.95), or the famous all-you-can-eat buffet, featuring baron of beef and turkey breast (\$6.95). Reservations definitely recommended (265-6891).

TRAVELERS TIPS — The T-Birds retiree group has scheduled a couple of fabulous outings for the next few months. Just imagine a week at the Jack Tar Village in Puerto Vallarta, Nov. 6-13, with an optional stopover in Dallas afterward to see the Cowboys play the Rams. The cost is \$925/person, double occupancy (\$895/person for T-Birds), plus \$150/person double occupancy for the Dallas extension. Only a few places left, so grab the phone and call Art Hasenkamp (255-8946) or Bob Butler (299-5626). And while you have one of them on the line, ask about the Disneyland and Rose Parade trip, Dec. 29-Jan. 6.

Events Calendar

Events Calendar items are gathered from various sources. Readers should confirm times and dates of interest whenever possible.

Oct. 16-25 — "Matachines," by Rudolfo Anaya, directed by Elena Citlali Parres, La Compañia world premiere presentation; 8 p.m. Thurs.-Sat., 2 p.m. Sun.; KiMo Theatre, 242-7929.

Oct. 16-18 — Storyfiesta: storytelling with panels, workshops, traditional and revivalist storytellers, presented by Storytellers International; call for times, Indian Pueblo Cultural Center, 897-0713.

Oct. 16 — Subscription Concert I: Chamber Orchestra of Albuquerque with guest pianist Nohema Fernández, featuring works by Mozart, Liszt, Turina, and Dvorák; 8:15 p.m., St. John's United Methodist Church (2626 Arizona NE), 881-0844.

Oct. 16 — "An Evening of Ghost Stories," presented by Storytellers International; 7 p.m., Indian Pueblo Cultural Center, 897-0713.

Oct. 16-18 & 22-25 — "A Christmas Carol Ballet," cast of 150 performers in a Victorian setting, based on Charles Dickens story, New Mexico Ballet Company; 7:30 p.m., 2 p.m. matinees; Popejoy Hall, 277-3121.

Oct. 17 — New Mexico Pageant of Bands, 15 New Mexico high school bands compete; 9 a.m.-4 p.m., Wilson Stadium (Lomas & Chelwood NE, Manzano High School), 298-7740.

Oct. 17-18 — Corrales Harvest Festival: annual celebration, hayrides, juried arts & crafts fair, farmers' market, food fair, entertainment, competition; 10 a.m.-5 p.m., Corrales Village, free, 898-5610.

Oct. 17-18 — Valleyfest: presentation of the colorful and mysterious Matachina dances; 10 a.m.-1 p.m., Indian Pueblo Cultural Center, free, 843-7270.

Oct. 17-31 — 1992 National Pastel Painting Exhibition, juried exhibit of pastel paintings from throughout the country; 9 a.m.-9 p.m., Fine Arts Gallery, NM State Fairgrounds, 265-1791, ext. 454.

Oct. 18 — Crafts for Christmas, arts and crafts by new Mexico artisans, bake sale, sponsored by Alpha Phi sorority to benefit New Mexico heart charities; 10 a.m.-4 p.m., Ramada Classic Hotel, 344-5373.

Oct. 18 — Very Special Raspberry Festival: brunch and festival featuring raspberry tastings, art auction, art activities, demonstrations, and entertainment; noon-2 p.m., Holiday Inn Pyramid, 298-5833.

Oct. 18 — Keller Hall Series: The Seraphin Trio; 8:15 p.m., Keller Hall, 277-4402.

Oct. 18 — African Violet Show and Sale, judged exhibit; 10 a.m.-4 p.m., Albuquerque Garden Center (10120 Lomas NE), free, 296-6020.

Oct. 20 — Keller Hall Series: New Mexico Brass Quintet; 8:15 p.m., Keller Hall, 277-4402.

Oct. 22 — "The Ceramic Science/Archaeology Connection," lecture by David Kingery, National Academy of Sciences member and Professor Emeritus at MIT; 7:30 p.m., Maxwell Museum of Anthropology, 277-5963.

Oct. 22 — "True Images of Nicaragua in Transition," South Broadway Cultural Center slide show presentation and discussion on recent developments in

Nicaragua; 7 p.m., Main Library (5th & Copper NW), 848-1320.

Oct. 22-24 — Willow Creek Craft Faire; 5-8 p.m. Thursday, 9 a.m.-6 p.m. Fri., 9 a.m.-5 p.m. Sat.; 1205 Lawrence Ct. NE (2 blocks east of Tramway, 2 blocks south of Lomas), 299-3403.

Oct. 23 — UNM Jazz Bands, directed by Bruce Dalby and John Bartlit; 8:15 p.m., Woodward Hall, 277-4402.

Oct. 23-31 — "Whodunnit?" English farce that takes place in a creepy mansion with murder afoot, presented by Silver Bear Productions; call for times, Silver Bear, 881-6203.

Oct. 24 — Holiday Creations Craft Show, annual craft show sponsored by the Bernalillo County Extension Homemakers; 10 a.m.-3 p.m., 4-H Center (1500 Menaul NW), 299-1271.

Oct. 24 — "Baila! Baila!" dance extravaganza; 7 p.m., UNM Continuing Education Center (University & Indian School NE), 277-1160.

Oct. 24 — UNM Opera Theatre, directed by Marilyn Tyler, excerpts from the wonderful world of opera; 8:15 p.m., Keller Hall, 277-4402.

Oct. 24-25 — "Say It with Mums," Albuquerque Chrysanthemum Society's 22nd Annual Show and Plant and Bloom Sale; 2-5 p.m. Sat., noon-5 p.m. Sun.; Albuquerque Garden Center (10120 Lomas NE), 298-4939.

Oct. 24-25 — Civil War Congress Living History Encampment, through 3:30 p.m. Sun.; Albuquerque Museum front lawn, 243-7255.

Oct. 25 — Explorations in World Music Series: "Music of Renaissance Spain," Musica Antigua concert/lecture, 3 p.m., Maxwell Museum of Anthropology, 277-5963.

Oct. 25 — Keller Hall Series: Puebla Chamber Players, music includes Mozart's "Parto, Parto" for clarinet, soprano, and piano and the "Reinecke Trio" for horn, clarinet, and piano; 4 p.m., Keller Hall, 277-4402.

Oct. 25 — "The Baroque and the Beautiful," Sangre de Christo Chorale, directed by Sheldon Kalberg, music by Bach and Durufle; 7:30 p.m., St. Paul Lutheran Church (1100 Indian School NE), 662-9717.

Oct. 25 — Fine Arts Series: The Dutton Family, fiddle, banjo, and mandolin music; 4 p.m., First United Methodist Church (4th & Lead SW), 243-5646.

Oct. 25 — Native American Music, concert of primarily Native American music and exhibit of art by American Indian children; 4 p.m., St. Michael's Episcopal Church (601 Montano Rd. NW), 265-9333.

Oct. 25 — Concert Choir, directed by John Clark; 8:15 p.m., Keller Hall, 277-4402.

Oct. 26 — "Los Pleneros De La 21," African-Caribbean music and dance, presented by the South Broadway Cultural Center and Outpost Productions, Inc.; 7:30 p.m., UNM Continuing Education Center (1634 University NE), 848-1320.

Oct. 27 — Carol Channing and Rita Moreno, two great ladies of the American stage present their memorable numbers; 7:30 p.m., Popejoy Hall, 277-3121.

Oct. 27 — People of the Southwest Lecture: "New Light on the Colonial Archaeology of New Mexico," by Frances Levine, instructor at Santa Fe Community College and independent ethno-historian consultant; 7:30 p.m., Maxwell Museum of Anthropology, 277-5963.

Oct. 28-Nov. 1 — "Pilgrims of the Night," Southwest premiere of Obie-award-winning Len Jenkin play, seven strangers converge at a ferry crossing only to learn the boat has left; 8 p.m., Rodey Theatre, 277-4402.

Oct. 29 — UNM Symphony Orchestra, directed by Jorge Perez-Gomez; 8:15 p.m., Popejoy Hall, 277-4402.

Oct. 30 — Radio Theatre: "War of the Worlds," based on the Orson Welles original adaption almost 50 years ago, with a new twist, the Martians land in Roswell, presented by the Silver Bear Radio Players; 8 p.m., Silver Bear (6921 Montgomery NE), 881-6203.



"I DON'T HAVE ENOUGH" is among the six excuses for not donating blood listed on Suzette Brooks' (7544, left) new "Blood Donor Excuse Mug." United Blood Services — represented here by Martha Cheromiah — is giving away the new mugs to all blood drive participants during blood drives in October and November. Linda Stefoin (7544), Sandia's blood drive administrator, says there are eight more opportunities to get your excuse mug. Watch the *Weekly Bulletin* for blood drive dates and times.