

Sandia pursues biotechnology as new technology area

Labs' biotech initiatives draw on Sandia's intrinsic strengths, make new areas of research possible

This is the first in a series of Lab News articles on Sandia's biotechnology initiatives. Future stories will focus on three biotech-related Laboratory Directed Research and Development Grand Challenges and individual biotech research.

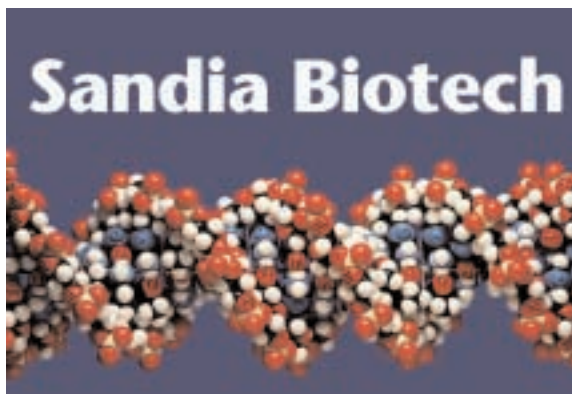
By Chris Burroughs

"The same way computers dominated the past 20 years, biology is going to dominate this new century like nothing else will. How can Sandia not go into biology?"

Those words from Bill Camp, Director of Computers, Computation, Information & Math Center 9200, tell a tale of revolutionary change at Sandia that is redefining research focus and causing ripples of excitement among scientists across the Labs.

Biotechnology — the coming together of traditional inorganic sciences of physics, engineering, and chemistry with biology — is making new and complex types of research possible. Sensors, computing, nanoscience, robotics, and materials science are all benefiting from the influx of biotech into their worlds, just as the biological sciences are advancing from the new interfaces with the physical and engineering sciences.

The focus on biotech started about three years ago when Al Romig, VP for Science & Technology and Partnerships 1000, and Mim John, VP for the California Laboratory 8000, began advocating that Sandia expand research efforts in the new field that was already high on radar screens of other national laboratories. They



"I knew as far back as the early 1990s that biotech was going to explode. It became apparent that if Sandia didn't go into biotech, we were going to be left behind."

felt that the Labs could have an even a greater impact on keeping the US safe by adding biology to the science and technology base at Sandia for nuclear weapons and other purposes.

"I knew as far back as the early 1990s that biotech was going to explode," Mim says. "It became apparent that if Sandia didn't go into biotech, we were going to be left behind."

Al adds that Sandia had a "clear mission dri-

ver" for pursuing biotech — countering bioterrorism and biowarfare.

"We knew that long before 9/11. And we have a lot of intrinsic strengths that make us a competitive biotech player — sensors, electronics, mathematical algorithms, and computational ability. It only makes sense that we do this."

A second part of the vision, Al says, is the bio/nano/info interface.

"I am very excited about how bio will be a key enabler of nano and lead to new materials and devices," Al says. "To stay at the cutting edge of nanoscience, materials science and micro/nano devices we *must* invest in bio. I would bet that someday bio-inspired materials and devices will appear in Sandia national security systems and nuclear weapons."

For more than 10 years Sandia has pursued some biotech research. Among the first were Gary Carlson (12300) and colleagues' insulin pump and Dave Haaland's (1812) noninvasive glucose monitor, which were developed with industrial partners in the 1980s and early 1990s. Others followed: a Laboratory Directed Research and Development (LDRD) investment area on biomedical technologies, Paul Gourley's bio-cavity laser, Mort Lieberman's prosthetics, Maher Tadros' decontamination foam, and Al Zelicoff's Rapid Syndrome Validation Project (RSVP). But no concerted effort existed to use this new technology in a big way.

In 1999 Mim and Al, with strong encouragement from former 1000 VP Bob Eagan and

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Sandia LabNews

Vol. 54, No. 13

June 28, 2002

Managed by Lockheed Martin for the National Nuclear Security Administration



Labs attains 70 percent in annual Savings Bond campaign

Participation level on upswing after several-year decline

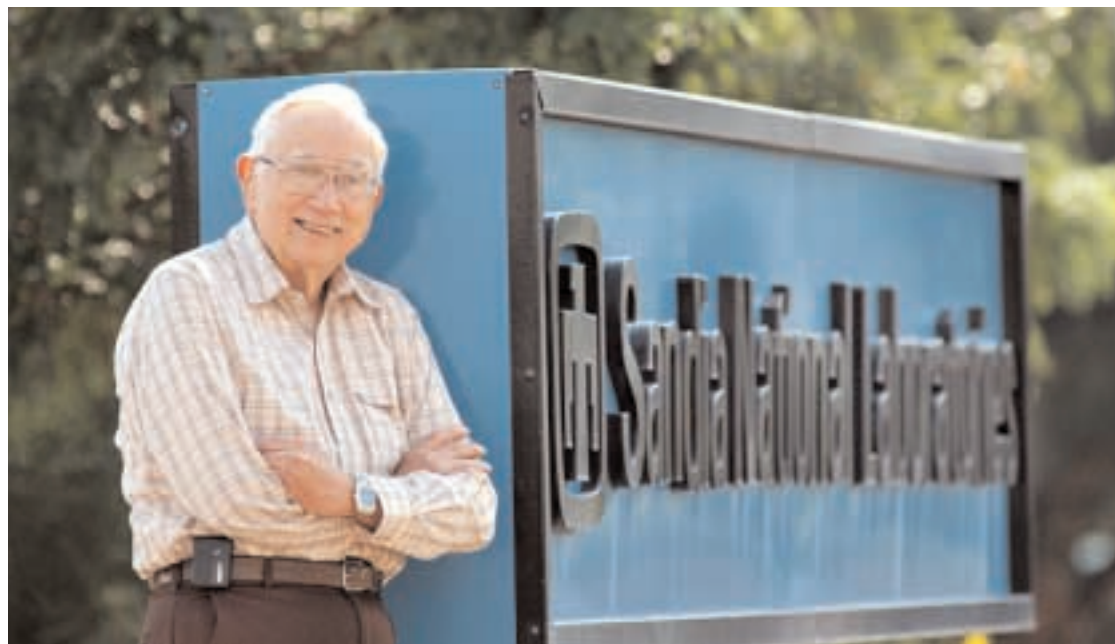
The 2002 Sandia Savings Bond Campaign, apparently topping out at a 67 percent participation level (a level similar to that of last year) at the close of the regular campaign period on June 7, surged to 70 percent after Labs President C. Paul Robinson decided to extend the campaign for another week. It formally ended on June 14, but Sandians are free to establish their own personal Savings Bond programs throughout the year.

As the campaign wound to a close, Paul reminded Sandians of the significance of their participation in the program: "I am delighted 70 percent of our people have chosen to buy savings bonds this year," he said. "I thank everyone who bought bonds for supporting our campaign. There are several reasons for buying bonds in addition to being a good way to save for your future. Sandia is a national laboratory with a vital national mission. Our buildings are owned by the government, we are paid with taxpayer dollars and most of our revenue comes from government agencies. Therefore, I believe it is important Sandia be seen as good corporate citizen. One way we can demonstrate our pride in Sandia and our commitment to our nation is by buying savings bonds. This year you have helped us send the message the Sandia team is behind America. Thank you."

Executive VP Joan Woodard and 2002 San-

(Continued on page 4)

Merrill Jones retires after 54 years at Sandia



WHEN IT'S TIME FOR YOU TO GO YOU'LL KNOW IT — After 54 years at Sandia, Merrill Jones is retiring. He is the only Sandian who has been at the Labs during its entire 53-year history as an independent laboratory. Read about his career in Iris Aboytes' feature on page 9. (Photo by Randy Montoya)

Neuron research co-authored by Sandian featured in *Science*

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California lab renamed Micro and Nano Technologies Laboratories

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Seven individuals, 21 teams win Weapons Excellence Awards

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Habitat house becomes a home at dedication ceremony

What's What

As we've come to expect in the post-9/11 world, security measures change now and then, to conform to changing conditions. After evaluating the world situation and its impact on Kirtland AFB with her staff, Base Commander Col. Kathleen Close ordered a change in the Force Protection Condition from Bravo+ to Alpha+ last week. That change was pretty much invisible to the thousands of people who drive onto the base every day.

What did get everyone's attention – and especially the people who had been dozing through the Gibson-Louisiana Gate every day – was traffic backed up to the intersection and creeping the rest of the way to the checkpoint beginning June 17. Being among those droopy-eyed commuters, I wondered what was going on. I couldn't see anything – the towering pickup just ahead of me prevented that – but after lurching along for about 30 minutes, I discovered the reason: There was a construction project under way in one of the two lines normally open to morning commuters.

Scheduling is everything, of course, and there were these guys in hardhats installing steel barrier posts to replace the giant plastic water jugs that ran us all through an eye-opening chicane on the way to work every day. And the morning rush hour seems like a perfectly reasonable time to get to work.

There were some huffers-and-puffers jockeying to get a car-length or two up on the rest of us, of course, but most everybody just lurched along in step and got to work a little late. A woman in the car behind me read her newspaper. I listened to Don Imus on the radio. I did have the good sense that first day to call about my first morning appointment, and settled that without fanfare. Ken just unlocked my office and turned the coffee maker on for me. No worries.

* * *

Oh, one other note about the gate work: After a couple of days of frustration in lines, some people aptly applied logic and decided to imitate water and flow around the obstruction. The next day they went to the Wyoming Gate. Then it got backed up.

But it will all be over soon, so do what the woman behind me did – just relax and read the morning newspaper. Or listen to Don Imus.

* * *

Broadcasters have always had a little perk that print people can't have: Most of them have distinctive sign-offs. There's Paul Harvey's "Good DAY!". . . and Carole Simpson's ". . . and . . . GOOD night!". . . and NBC News' Tom Brokaw's "Seeyabackheretomorrownight". . . and, of course Uncle Walter's ". . . and that's the way it was, Thursday, June 27th, 2002. . . ."

I was thinking about the proposed Department of Homeland Security and whether Lawrence Livermore will be in it or not, or how much of it will be in, if any, and what that part might be, if at all, and I remembered steely-eyed Dan Rather of CBS startling his millions of viewers one time by peering at them at the end of the broadcast and saying firmly: "Courage!"

Maybe they could get a copy of that broadcast at Livermore. . . .

— Howard Kercheval (844-7842, MS 0165, hckerch@sandia.gov)

Sandia's John Finn co-authors paper on neuron research in *Science* magazine

The journal *Science* has published work on neuron self-destruction co-authored by Sandia/California scientist and researcher John Finn (8112).



JOHN FINN

In a review article titled "Axonal Self-Destruction and Neurodegeneration," in the May 3 *Science*, John and co-authors Martin Raff and Alan Whitmore analyze recent scientific advances related to the death of neurons and the degeneration of their relatively lengthy processes, axons, which transmit electrochemical signals to muscle, organs, and other neurons. Raff and Whitmore are with the MRC Laboratory for Molecular Cell Biology and the Biology Department, University College, London.

Neuronal cell death takes place in neurodegenerative diseases including glaucoma and Alzheimer, Parkinson, and Huntington diseases, but the authors suggest that axonal degeneration "may make a more important contribution to the patient's disability." They discuss "some examples of axonal degeneration in disease and in normal development" of the nervous system, when initially too many neural connections are formed and those that are not needed are eliminated. They present the evidence that, in a hereditary neurodegenerative disease found in a strain of mutant mice, "axonal degeneration, rather than neuronal death, seems to be responsible for clinical progression and death."

The three authors review recent breakthroughs that suggest that axonal degeneration may occur through a biochemical process distinct from the process that mediates the degeneration of the parent neuron. They hypothesize that the same molecular program may be used by axons during normal development and in response to injury or illness and propose experiments and make predictions to test their theory.

They say research toward understanding axonal self-destruction and neurodegeneration may eventually help those who suffer from neurodegenerative diseases, developmental disabilities, and chronic neurological injuries.

— Mike Janes

Sandia LabNews

Sandia National Laboratories

<http://www.sandia.gov/LabNews>

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Sandia National Laboratories is a multiprogram laboratory operated by Sandia Corporation, a subsidiary of Lockheed Martin Corporation and a prime contractor to the US Department of Energy.

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Lab News fax 505/844-0645

Classified ads 505/844-4902

Published on alternate Fridays by Media Relations and Communications Dept. 12640, MS 0165



Program seeks employees, retirees who suspect exposure to beryllium, silica, or radiation

Representatives of the Energy Employees Compensation Resource Center in Espanola will set up offices at the Sheraton Uptown in Albuquerque July 9-12 to hear from current and retired Sandia and DOE employees who have been diagnosed with cancer resulting from radiation exposure, chronic beryllium disease, or silicosis while working at a DOE weapons facility.

On hand to answer questions and take claims will be Floyd Archuleta, who heads the Espanola center, and claim workers. The center is one of 10 in the country set up to help people who have experienced such exposure and may be ill as a result.

Office hours at the Sheraton Uptown will be 9 a.m.-7 p.m., July 9-11, and July 12 from 9 a.m.-noon. People who wish to talk to a claim representative are urged to call the toll-free number,

866-272-3622, to set up an appointment.

Individuals exposed to beryllium, silica, or radiation may be eligible for benefits under the Energy Employees Occupational Illness Compensation Program. The program was established to locate people who became ill as a result of exposure to beryllium, silica, or radiation while working in the nuclear weapons industry for DOE. Individuals who developed cancer from exposure may be eligible for a \$150,000 lump-sum compensation and medical expenses provided through the act.

Claims filed through the Energy Employees Compensation Center will be sent to the Department of Labor regional office in Denver for processing. More information can be obtained by calling the center or by visiting the Department of Labor's website at www.dol.gov.

White House briefing note on the national labs and the new Department of Homeland Security

The following is excerpted from the transcript of a background briefing by a senior administration official on homeland security June 18, as issued by the White House Office of the Press Secretary. The occasion for the briefing was the White House transmitting to the Congress legislation implementing the President's June 6 proposal to create a new Cabinet-level Department of Homeland Security.

"And then there were four areas where we did what we think are rather small refinements of what was initially proposed. . . .

"Third area concerns Lawrence Livermore National Laboratory. The materials released on

Thursday suggested that the entire laboratory was being moved over and assigned to the Department of Homeland Security. The President's legislation refines that and basically has in mind a system where there will be a substantial facility based at Lawrence and an R&D and science and technology program related to homeland security that will occur in many different places, in many different national laboratories. So it won't be just work at Lawrence Livermore, it will also be work at Los Alamos, Sandia, a number of other laboratories around the world — around the country." . . .

Micro and Nano Technologies Laboratories' new name signifies future directions

In renaming celebration, MANTL takes up the mantle from IMTL

By Nancy Garcia

The Sandia/California laboratory unveiled 10 years ago as the "Integrated Manufacturing Technologies Laboratory" underwent a renaming celebration earlier this month proclaiming the facility's new incarnation, the Micro and Nano Technologies Laboratories (MANTL).

Initially approved as a defense engineering laboratory for the Strategic Defense Initiative, the lab was originally dedicated in 1992 by then-Secretary of Energy Adm. James Watkins. At that time, pointed out Materials and Engineering Sciences Center 8700 Director Rick Stulen, Sandia was anticipating being operated by a new contractor other than AT&T, the site had just added signs designating its existence at highway exits (right above those for Lawrence Livermore), and there were rumors of an upcoming retirement incentive package. "It's time for a new name," he said.

"We realized we really weren't in manufacturing anymore," California Laboratory VP Mim John added. "We were in technology development to support process development [at the micro and nano scale]" With yet another focus

for its activities, the facility is living up to its original intent to become an all-purpose laboratory.

She said the MANTL initials were selected for forming a short, pronounceable acronym based on a building title that represents "what we have started today and where we want to be in 10 years . . . MANTL speaks to a really strong and vibrant future." In fact, a new wing is expected to rise to one side of the facility to support more activities in microfabrication.

A plaque from the lobby of the existing building was officially "retired" at the ceremony amid recollections by Government Relations Manager Ron Stoltz (12122). He recalled that a version mailed to Admiral Watkins resulted in evacuation of the Forrestal Building in Washington, D.C. when X-ray screening indicated the plaque was equipped with a suspicious-looking battery-operated light.

Rick presented Mim a small new plaque embedded in a microchip carrier (members of the crowd suggested that it might be displayed with a magnifying glass).

Following the ceremony at a site-wide outdoor barbecue luncheon, attendees visited the lobby for desert and a poster session displaying current work in micro and nano technologies.

Director Don Cook (1900), Program Director of the MESA Program (Microsystems and Engineering Sciences Applications) that includes work in MANTL and future construction to be added to MANTL, reminded the group how the new-facility focus supports enduring missions in the Nuclear Weapons Strategic Business Unit.

"The past is prologue," he said, since to keep the nuclear deterrent safe, secure, and reliable, the



LOOK CLOSE — Rick Stulen and Mim John hold aloft the new MANTL name plaque, scaled to indicate the "micro and nano" thrust of research activities in the building. (Photos by Randy Wong)

Sandia California News



A HOT DEAL — The renaming celebration included a barbecue lunch in the sunny outdoors.

stockpile must be modernized through engineering R&D. Even in the 1950s, future physics Nobel laureate Richard Feynman, then a new Caltech professor, remarked about promising avenues of research (his award concerned quantum electrodynamics): "There's plenty of room at the bottom," Don pointed out. "That's all the way down to the molecular scale — nano and microtechnology are the underpinnings of microsystems."

The corollary, he added, is that at the top of engineering design, there's not room for errors that might impact safety, security, or reliability.

Overall, Rick said, the name change celebrates both "where we've come, and where we're going." The future, Mim added, "is very exciting."

See more on MANTL on page 4.

Feedback

Any help in sight for soaring housing costs in Livermore?

Q: According to the Association of Bay Area Governments, the median price of an existing home in Livermore has increased by nearly \$150,000 over the past three years. The resulting disparity in standard of living between new employees and those who have been in Livermore for just a few years is appalling. A new SMTS can no longer purchase a home in a decent neighborhood, let alone support a family.

Given the importance of home ownership for staff retention, does SNL plan to help its California employees purchase a home? Previous measures, such as sponsoring home-buying seminars and touting the credit union's mortgage rates, are ineffective against such a large increase in price. A cost-of-living increase for all California Technical Staff — though long overdue — will not address the inequalities that affect recently hired employees.

A: Sandia/California management is concerned about the significant escalation in housing prices in the Greater Bay Area. You are correct in stating that it is both an attraction and retention issue. It is a problem for which there is no easy, single answer. One

only needs to read the newspaper to see that many other employers are struggling with the same issue. We have taken a number of steps and are continuing to pursue alternatives.

To ensure that our employment pipeline programs remain viable, we now negotiate with local apartment complexes to reserve blocks of apartments for interns to share at reasonable rental rates. We assisted 101 interns with accommodations in FY 01. Benefits and Health Services have made arrangements for Sandia/California employees to utilize the services of a mortgage brokerage service through our affiliation with the Livermore Chamber of Commerce. We are actively exploring options with the Sandia Credit Union. We have held, and will continue to provide, home buying seminars and home financing seminars. We have introduced the services of "equity share" companies to our employees. Equity sharing is a mechanism to assist first-time homebuyers. Equity share companies pair an investor who can make a down payment with a first-time homebuyer.

The two agree to share the appreciation in the home's value for a specified period, usually 3-5 years. Hiring managers are also encouraged to discuss issues related to a new hire's relocation and housing concerns with our Recruiting and University Relations Department staff to explore possible options consistent with today's policies.

We are committed to continue to pursue alternatives to assist employees. The Compensation Department has committed to study the issue of geographic salaries for employees hired from a national market. The product of this study will be a presentation and recommendation to the VP salary committee. California site's Benefits and Health Services Department has also issued an invitation to site employees to be part of a focus group on retention issues, including the impact of cost of living; the group will brainstorm ideas and develop potential proposals for management consideration. If you are interested in being a part of the focus group, please contact Kristy Sibert, 8527.

— Pat Smith (8500)

Bond campaign

(Continued from page 1)

Sandia Bond campaign chairman Gerry Yonas (VP 16000) echoed Paul's sentiments.

"Time and time again, Sandians have demonstrated their dedication to service to our lab and the nation, and this is just one of countless examples, for which I am grateful and proud," said Gerry.

"We take great pride in Sandia being known as a world leader in engineering and science," Joan said. "We take equal pride in Sandia being valued by our community and our nation as a good citizen. Buying bonds is one way we can demonstrate to Congress and our government customers our support of America and its programs."

She also noted in comments published in the *Sandia Daily News* a corporate connection between Sandia's participation and Lockheed Martin's support of the nation's bond program. "Lockheed Martin Chairman Vance Coffman is this year's national chairman of the US Savings Bond campaign," Joan said. "Sandia's excellent performance in the bond campaign is a nice way to show Vance how much we appreciate his active support to get our improved pension approved. Thank you again for buying bonds. Every day you find new ways to make Paul and me proud of you and Sandia."

Juanita Sanchez (12660), Sandia's long-time Savings Bond Program coordinator, noted that due to attrition throughout the year (mostly as a result of retirements and resignations) the Labs began the 2002 bond campaign period at a 55 percent participation level. Seeing that her work was cut out for her to get the participation levels back up to at least the status quo of 2001, Juanita and Savings Bond representatives scheduled more presentations than ever before — more than double the number from 2001. During the presentations to all-hands gatherings across the Labs, Juanita — sometimes dressed in her trademark Uncle Sam costume — provided education and information about the benefits of bonds.

"We did a lot of fun events," says Juanita. "We did a lot of ice cream socials. I never ate so much ice cream in my life!"

In California, campaign coordinator Jay Foulk (8726) and the Center leaders likewise carried the bond message to all-hands meetings and

other gatherings.

"We are grateful to those who continue to invest in both the country and themselves through the ongoing purchase of Savings Bonds," Jay said as the campaign wound to a close.

And the result of efforts across the Labs? The interest level this year, she says, was higher than she's ever seen it, a fact that she attributes to the increase in patriotic sentiments in the post-9/11 world — and in the sluggish performance of the stock market.

"After the presentations, my phone rang off the hook," she says. "I probably took 400 to 600 calls, especially from younger Sandians just starting a savings portfolio and from older Sandians interested in buying bonds for their grandchildren."

Although Juanita thinks patriotism was a factor in getting peoples' attention, the buy/not buy decisions were based on the merits of bonds as investments — as one part of a diversified savings portfolio.

Juanita also credited US Treasury Department spokesman Jerry Chavez for the series of effective presentations he made at centers around the Labs on behalf of the bond program.

The 70-percent rate marks a turnaround from the trend over the past several years in which Savings Bond participation rates have been declining. Certainly the hard work by Juanita, Gerry Yonas, and Savings Bond champions at the centers throughout the Labs played a key role in boosting Sandia to the 70 percent level. But Paul's decision to extend the campaign — and his direct intervention to appeal to Sandians to participate — may have made the final difference.

"Ten years ago, 97 percent of Sandians bought savings bonds," he reminded readers in a special *Sandia Daily News* message. . . . You can buy a bond-a-year for as little as \$2 per pay period.

Although, I hope everyone will choose to buy more

than that to save for their future, buying a bond-a-year will help you save a little for your future and also help to get our participation numbers back to where I believe they should be."

Juanita notes that the extra week also gave Sandians who might have been on vacation or on travel a bit of extra time to get on board the Savings Bond program.

By the end of the campaign, some 5,500 Sandians had opted to invest in savings bonds. In addition, more than 170 temporary employees participated, as did a number of Sandia contractors. Juanita expressed special appreciation for those contractors, as they aren't able to participate through direct payroll deposit; they had to take the extra step of buying bonds through their banks.

Sandia has a long tradition of Savings Bond support. It is the only national laboratory to have ever been the recipient of the Treasury Department's National Honor Roll Award, which is reserved for employers of 5,000 or more that attain a 50-percent-plus participation rate. Sandia has made the honor roll every year since it was established and is one of only a handful of US organizations to be so consistently honored.

Sandia Savings Bond Honor Roll

Centers with 100 Percent Participation

Center	Director
1200	Carolyne Hart
1300	Dave Goldheim
Div Office 2000	John Stichman (VP)
Div Office 8000	Mim John (VP)
9400	Pace VanDevender
9900	Michael Vahle
Division 11000*	Robert Kestenbaum (VP)
11100	Ellen Gallegos
11200	Lawrence Greher
11300	Elizabeth Krauss
11500	Russell Elliot
11600	Kurt Olson
11700	Robert Park
12600	Don Carson
15100	Patrick Eicker

* Division 11000 was the only Labs Division to reach 100 percent participation.

MANTL draws international interest

By Nancy Garcia

Signifying the international impact of the expertise developed at Sandia/California, the first group of distinguished visitors to visit the newly renamed Micro and Nano Technologies Laboratories (see article on page 3) was a science and technology subcommittee from the British Parliament's House of Lords.

"We've spent a year taking evidence in the U.K. to study the climate for development of new technology," said Lord Oulton Wade of Chorlton, chair of the Science and Technology Sub-Committee II's inquiry into "Innovations in Microprocessing."

They will propose ideas "that might galvanize research into new opportunities" for technology to supersede conventional microprocessors as advances face anticipated obstacles in the next decade, he said. Suggestions taken up by the British government would then be debated in Parliament.

"The strength and creativity of our science base is a key national asset as we move into the 21st century," British Prime Minister Tony Blair told the Royal Society, the venerable London-based scientific association, in a speech last month. "We could choose a path of timidity in the face of the unknown," he said. "Or we could choose to be a nation at ease with radical knowledge, not fearful of the future, a culture that values a pragmatic, evidence-based approach to new opportunities."

Overall, California Laboratory VP Mim John

(8000) told subcommittee members, partnerships with industry represent about 3 percent of the Labs' annual budget. As changing policies and legislation in the late 1980s and early 1990s created more incentives and opportunities to collaborate with industry and facilitate the licensing of intellectual property, she said, "We learned how to work to industry's needs and schedules, as opposed to the government's. That was as valuable to us as anything. It was very different from our year-to-year experience with government sponsors."

When Republicans became the majority party in Congress in 1996 and demonstrated an aversion to the perception that the activities were "supporting industry with federal funds," she continued, matching funds for Cooperative Research and Development Agreements from DOE were canceled. Nonetheless, collaborations continued with in-kind contributions from the laboratory matched by industry funding.

Following up on a contact initiated when Laura Santos (8529) of Business Development Support responded to a British Consulate request for information, the lords were given a tour and briefing by Materials and Engineering Sciences Center Director Rick Stulen on the Extreme Ultraviolet Lithography program for future microchip manufacture.

Rick and Mim explained how industry was initially attracted to research advances in materials made by researchers such as Glenn Kubiak, leader of Nanoscale Science and Engineering Section 8732, during research into X-ray lasers for the Strategic Defense Initiative. "We wondered if there



A MATERIAL WORLD — Members of a House of Lords subcommittee agreed that materials are key to future challenges and opportunities in microprocessing. Here, Mim John chats with their specialist adviser, Prof. Steve Furber, who is on the computer engineering faculty at the University of Manchester.

could be something useful done with it," Mim said.

Rick outlined how Sandia combined expertise with Lawrence Livermore and Lawrence Berkeley national laboratories to work as a single, Virtual National Laboratory in the five-year industrial partnership.

In addition to visiting Sandia, the lords said they had met with leading players at Stanford University and were also scheduled to visit Intel and IBM to learn more about the future of silicon-based CMOS transistors and LBNL for a briefing on distributed sensor systems.

Biotech

(Continued from page 1)

Advanced Concepts Group VP Gerry Yonas, sponsored a study for the Labs Leadership Team (LLT) to determine if Sandia should play a role in the biotech arena and, if so, what areas should be Sandia's focus. Len Napolitano (8130) was tapped to lead the study, joined by John Hinton (8114) and John Howard (8910).

"We spent three months exploring what the role of biotechnology should be in addressing Sandia's current and future national security mission needs," Len says. "We concluded that biotech at Sandia is inescapable. We were obligated. We couldn't avoid it. And (by the way) it was already here."

Among bio-strategy decisions that needed to be made were: What areas of biotechnology should Sandia pursue? Should the application of biotechnology extend beyond defense against biological weapons? To what extent should we commit resources? How do we develop and implement corporately focused strategy?

The report noted that bio was already "part of our current national security missions."

"Many current capabilities were already integrating biotech — materials sciences, computational analysis and simulation, physical diagnostic techniques, microfabrication, technology integration — and we anticipated that future missions will require even more bio capabilities," Len says.

The LLT — having taken a neutral position on biotech earlier in the 1990s, later becoming strong advocates — agreed to establish a biotech focus area working on projects where Sandia could establish its own technical niches.

In 2000 the Biotech Science & Technology Council was created to lead Sandia's efforts to transform the Labs into the biotechnical laboratory of choice for national security problems. Heading up the council were Bill; John Vitko, Director of Exploratory System and Development Center 8100; and Tom Picraux, then Director of Physical and Chemical Sciences Center 1100. Support was provided by Len (8130), Grant Heffelfinger (now 1802), and Terry Michalske (now 1040). When Tom took a leave of absence from Sandia, the new director of 1100, Julia Phillips, replaced him on the council.

Three new departments, representing primary research endeavors, were established to focus on biotech. Len became manager of Biosystems Research Dept. 8130 in California; Grant became manager of New Initiatives Dept. 9209;



SANDIA BIOTECH PIONEER — Paul Gourley's bio-cavity laser was among the early biotech initiatives at the Labs.

(Photo by Randy Montoya)

and Terry Michalske became manager of Biomolecular Materials & Interfaces Dept. 1140. Dept. 9209 later split into two departments, Dept. 9209 and a new one, Computational Biology Dept. 9212, which Grant headed until his recent appointment to a Level II manager.

In 2001 a biotechnology portfolio was established as part of the LDRD program to provide "seed" funding for this new science and technology area. This included the Interfacial Bioscience Grand Challenge (IBIG) led by Len and Joe Schoeniger (8130) that is focused on the development of new bioanalytical tools for the study of membrane protein structure and function.

In addition, there are two other LDRD Grand Challenges that have a significant biological component. One is the Molecular Integrated Microsystems (MIMS) Grand Challenge, led by Terry and Len, which has as one of its goals the combining of molecularly tailored nanomaterials with addressable microdevice architectures to demonstrate the first-ever programmable microsystem devices for protein and peptide analysis.

The second is the Bio MicroFuel Cell Grand Challenge led by Douglas Loy (6245) and Ken Schubert (1763). This first-year challenge will develop new compact power sources that can operate using fuels from biological sources.

Even with the new emphasis on biotech at Sandia, don't expect that Sandia will transform its science and technology base in any wholesale way. Biotechnology investment is about 5 percent of Sandia's research budget, which is considered to be a threshold level for developing new competencies. This fiscal year about \$21 million of Sandia's \$1.7 billion annual budget is devoted to biotech projects. Some \$9.8 million of that goes to the three Grand Challenges and nine other LDRD projects.

"We will be working in the 'sweet spots' in physical and bio areas where we have expertise and where there is the greatest need," Al says. "This will be activities like understanding how bioagents and other pathogens attack and penetrate cell membranes, bioinformatics to 'mine and understand' the emerging explosion of biological data, and computational biology to tie all this understanding together in working models of cells and higher order structures.

This will have direct and major impact on our bioterrorism efforts and will also have important medical spinoffs."

Al notes that for Sandia to succeed in its biotech endeavors, the Labs will have to partner more with other laboratories, universities, and hospitals.

"We can't do this alone," he says. "We are not going to grow a major life sciences program here. We'll have to have interdisciplinary scientists and form lots of partnerships."

And what is the future of biotech at Sandia? As funding for biotech increases from DOE, Homeland Security, and the National Institutes of Health, Bill speculates that biology will eventually make up 25 percent of the Labs' endeavors and involve an interdisciplinary mix of physical scientists, computational scientists, biologists, and engineers.

"Biotech promises huge opportunities for enormous breakthroughs in the areas of national security and health," Bill says. "We can have an impact on both."

Sandians share thoughts about biotech



"I'm a big believer that the greatest advances occur at interfaces of disciplines. We are at the intersection of materials science, computer science, engineering,

chemistry, physics, and biology. This new biotech is not your grandparents' biology."

— Al Romig (1000)



"Biotech will touch everything we do in ways I cannot even imagine."

— Mim John (8000)



"Most research scientists and engineers agree that the global research endeavor is moving rapidly to new frontiers in the biological sciences and their interfaces with

health and physical sciences and engineering."

— Grant Heffelfinger (1802)



"This is the beginning of a whole new technology. We don't know what to expect. It's very, very exciting."

— Alan Burns (1141)



"To me personally this explosion in bioscience is the most exciting area of science."

— David Haaland (1812)

Century of the new biology

19th Century – The century of mechanical engineering and chemistry
20th Century – The century of physics, the atom, electrical engineering, and computer science

21st Century – The century of the new biology
— Al Romig (1000)

Why is biotech important to Sandia?

In the FY02 LDRD call for proposals in the Biotechnology Investment Area, Alan Burns (1141), Len Napolitano (8130), and Grant Heffelfinger (1802) provide a clear explanation why biotechnology is important to Sandia. In their call, they say:

"Biotechnology is destined to play an increasingly important role in our nation's security and economic prosperity. In order for Sandia to continue responsibly addressing its national security missions and to

remain in the top tier of national laboratories, it must develop its own core technical capabilities in biotechnology. The goal of this Investment Area is to develop and support science and technology projects that will lead to a strong and sustainable biotechnology core capability at Sandia. Our overall goal is to place Sandia at the forefront of systems biology for national security and ensure Sandia's role in the impending biotechnology revolution."

Seven individuals, 21 Sandia teams to receive DOE Weapons Award of Excellence

By Chris Burroughs

Seven individuals and 21 teams will be awarded the DOE Weapons Award of Excellence during ceremonies next month in New Mexico and California.

The Sandia/New Mexico ceremony will be July 15 from 2-4 p.m. at the Steve Schiff Auditorium. The Sandia/California ceremony will be July 30 from 2-4 p.m. at the Combustion Research Facility auditorium. The ceremonies will be open to award winners' spouses, guests, and managers.

"The DOE Award of Excellence is an annual celebration that allows us to come together to recognize the achievements of Sandians for the important work that we do for our Defense Programs customers," says Tom Hunter, Senior VP 9000. "This year we will recognize seven individuals and 21 teams that include a total of 335 winners from multiple divisions across Sandia. Many of this year's awardees are from our California site."

The award was created in the early 1980s to give special recognition to those people at the laboratories and plants directly associated with the stockpile modernization program.

Today the awards honor exceptional contributions to the stewardship and management of the stockpile.

Individual award winners

Alvin (Al) Baker (8222): Al will receive an individual award for his leadership and initiation of the Robust Nuclear Earth Penetrator (RNEP) Phase 6.2/6.2A project. The RNEP Phase 6.2/6.2A authorization, which was approved by the Nuclear Weapons Council, is the culmination of several years of leadership by Al. This effort grew out of several earlier studies in which Al was instrumental in providing focus and structure. These earlier studies were combined into the hard and deeply buried target study which, as a result of Al's dedication and leadership, resulted in the RNEP Phase 6.2/6.2A authorization.

Ronald Bentley (9700): Ron will receive an individual award for significant contributions to strategic planning for the Nuclear Weapons Complex. After 18 years at the Tonopah Test Range, Ron began the second phase of his career at Sandia in 1993 with a Washington assignment. From 1993 to 1996, Ron served as a Special Scientific Advisor on nuclear matters in the Office of the Assistant to the Secretary of Defense for Nuclear, Chemical, and Biological Weapons, immediately followed by a one-year assignment at DOE/HQ Defense Programs office. Since the end of that assignment, Ron has proven himself invaluable as an advisor to many offices in DOE and Department of Defense on issues related to the Nuclear Weapons Complex.

John Brainard (2564): John will receive an individual award for revolutionizing neutron tube design through the introduction of a resintered ion source that advances and reduces manufacturing

complexity. He leveraged breakthroughs in brazing technology and came up with an improved ion source for the neutron tube. The advent of the resintered source eliminates seven processing steps and affords the opportunity to automate mask alignment for evaporation, currently a tedious and time-consuming manual process.



JOHN BRAINARD, one of the individuals honored in the annual DOE Weapons Award of Excellence program, displays a component from a neutron tube. John's breakthroughs in brazing technology contributed to development of an improved ion source for the neutron tube. (Photo by Randy Montoya)

Mike Chiesa (8727): Mike receives an individual award for revolutionizing the design, modeling, and manufacturing of weapon critical forgings for Gas Transfer System reservoirs. He developed forging process modeling tools that have significantly reduced production times and costs and increased final part quality. Mike's application of this technology, working closely with Honeywell Federal Manufacturing & Technology at the Kansas City Plant (H/FM&T) and commercial forging vendors, has had a significant impact on the design of critically needed reservoirs this year.

William (Bill) Ling (9813): Bill will be given an individual award for significant contributions to enhancing the nation's nuclear weapon deterrent. He has made a significant contribution to

national security by developing a technical interface between Sandia and US Strategic Command (STRATCOM) that has served both agencies well for over ten years. The exchange of information, ideas, and solutions between Sandia and STRATCOM attributable to Bill has increased the quality, utility, efficiency, and safety of the nuclear weapons deployed and planned by STRATCOM.

Marcus (Jim) Martinez (2131): Jim receives an individual award for outstanding leadership in the Advanced and Exploratory Program in the areas of hard and deeply buried targets and agent defeat. His contributions have led to major successes that will influence the future of the nuclear weapon stockpile. He led a multilab/multi-agency team tasked with developing schedules and cost options for a Robust Nuclear Earth Penetrator weapon, which were presented to and approved by the Nuclear Weapons Council in November 2001. At the same time he led a project to develop technologies in support of Agent Defeat.

Thomas (Tom) Massis (2552): Tom receives an individual award for more than 40 years of energetic materials and components expertise supporting DOE weapon applications. He has dedicated his career to the devel-

opment and understanding of energetic materials properties, performance, and applications to DOE weapon components. During his four-decade career, he has developed new analytic techniques for characterization of materials during the entire component life cycle: conceptual design, development, production, surveillance, and dismantlement. Tom has also developed methods for predicting component life and energetic material compatibility before energetic components are introduced into the stockpile.

Sandia team winners

Aging and Radiation Effects Team

The Aging and Radiation Effects Team will be recognized for its technical accomplishments leading to the advancement of experimentally validated, model-based certification of weapons components in Stockpile-to-Target Sequence transient radiation environments. The team developed a validated "First Principles" model for predicting the transient radiation response of tritium-containing components exposed to intense radiation environments.

G. Cook Story (ret, Co-Team Lead), Steven Robinson (8243, Co-Team Lead), Arlyn Antolak (8723), Ray Baldonado (8231), Rion Causey (8724), Phillip Cooper (6423), Don Cowgill (8724), Kristin Hertz (8724), Daniel Morse (8723), and George Thomas (8724).

B83 Alt 355 Team

The B83 Alt Team will be recognized for outstanding stockpile stewardship resulting in Alt 355, a B83 GTS upgrade. It engineered, qualified, and fielded a robust upgrade to the B83 gas transfer system (GTS) as a response to unexpected surveillance test results. It

(Continued on next page)

Honorees asked to RSVP

Award winners, their guests, and managers are invited to attend the DOE Weapons Award of Excellence ceremonies. All winners have received invitations and should RSVP to Dolores Maes for the New Mexico ceremony at (505) 845-0491 and to Joan Bersie for the California ceremony at (925) 294-2912.

Those award winners bringing guests to the New Mexico ceremony must meet them at one of the Kirtland Air Force Base entry points and escort them to the Steve Schiff Auditorium. Only US citizens can access the auditorium.

DOE's annual Weapons Award of Excellence program honors notable achievements among weaponeers

(Continued from preceding page)

also developed the procedures needed by the Air Force to install the Alt 355 hardware. The first production unit was accepted and shipped to the Air Force in mid-December 2001, one and a half months ahead of schedule.

Robert Monson (8243, Team Lead), Scott Anderson (8233), Dennis Carlson (H/FM&T), Frank Carrillo (Air Force), Lupe Cruz (82253), Roger Everett (8221), Bob Franssen (82253), Thomas Gaffney (8221), Walt Ghio (8221), Ed Hoffman (8114), Ken Kvam (2193), Jim Lauffer (8727), Carol Michaels (9103), Dennis Nelson (82253), Nick Paradiso (8119), John Tootle (8221), and Peter Van Blarigan (8243).

BUSFET Development Team

The BUSFET Development Team will be recognized for invention, implementation, and validation of the Body-Under-Source Field-Effect Transistor (BUSFET) as a novel approach to achieving single-event and total-dose radiation hardness in silicon-on-insulator field-effect transistors. The BUSFET reduces cost and improves manufacturability for radiation-hardened integrated circuits.

James Schwank (17621, Team Lead), Vicki Clark (1748), Paul Dodd (17621), Bruce Draper (1748), Anthony Farino (1746), Richard Flores (1735), Gerald Hash (17621), Tom Hill (1748), Robert Jarecki (1747), Glen Laguna (9224), Rhonda Loemaker (17621), Timothy Meisenheimer (1748), Michael Nicholas (1746), Marty Shaneyfelt (17621), Robert Timon (1746), and Gary Tipton (1747).

Code Management System Team

The Code Management System Team will be recognized for ingenuity and dedication in the development of the CMS USEUCOM/USAFE application. They completed a multiyear development activity with the delivery of the full system to USEUCOM and USAFE. The system became operational in November 2001. Fourteen specific hardware and software products comprise the delivered system. All were submitted to the NNSA Qualification Assurance Inspection Process, and all were accepted. The delivery resulted in a significant reduction in training and complexity for the field users.

J. Doug Clark (2115, Team Lead), Stephen Becker (2341), Harry Caton (2116), Timothy Chandler (H/FM&T), Carol Christensen (2102), Nancy Clark (2522), Manuel Contreras (2115), Marvin Dechant (H/FM&T), Brian Geery (2116), David Gelet (2116), Rosemary Gergen (NNSA), Reed Jackson, Jr. (6514), Marianna Mauritz (2116), Thomas Obenauf (6514), Harvey Ogden (6536), Barbara Pass (2116), David Peercy (12316), Steven Rezac (2116), James Turner (2115), Melissa Wilson (2115), and Terry Yotter (H/FM&T).

Common Radar Design Team

The Common Radar Design Team will be recognized for excellence in engineering during the redesign of the Common Radar. The team displayed sustained initiative, technical excellence, and creative thinking in solving a problem caused by electrical failures that halted production of the MC4033 Common Radar. The team successfully diagnosed, quantified, and characterized a design vulnerability which manifested itself as an electrical failure of the MC4033 Common Radar; developed, validated, and qualified a robust

new design which corrected the problem; used independent assessments to enhance the redesign process; and implemented numerous production improvements, qualified production processes, and resumed full production at the Kansas City Plant.

Bill Schaedla (2333, Team Lead), Elmer Collins (12335), Kevin Ennis (2333), Floyd Gentry (12336), Saundra Monroe (1843), Michael Neilsen (9123), Kenneth Peterson (14171),

(1843), Neil Sorensen (1832), Ronnie Stone (14192), Donald Susan (1822), and Bruce Tuttle (1843).

Isentropic Compression Experiment (ICE) Team

The Isentropic Compression Experiment Team will be recognized for significant contributions of Isentropic Compression Experiments to stockpile problems. The team's most recent achievement was to extend isentropic compression pressures to 4 Mbar and launch flyer plates on the Z accelerator to velocities of about 28 km/s, which is nearly four times the capability of existing high-velocity guns. The ICE and associated flyer plate capability opens an entirely new subfield of materials testing and has recently been used to resolve a scientific controversy over the high-pressure equation of state (EOS) of hydrogen and its isotopes by acquiring accurate EOS data on liquid deuterium in the several hundred kbar pressure region to validate *ab initio* theories.

James Asay (1610, Project Lead), James Bailey (1677), Dennis Barker (Bechtel Nevada), Jean-Paul Davis (1611), Christopher Deeney (1612), Michael Furnish (1612), Clint Hall (1612), David Hanson (1673), Dennis Hayes (ret.), Randy Hickman (1611), Robert Johnston (1611), Marcus Knudson (1611), Raymond Lemke (1674), Joshua Mason (1611), John McKenney (1670), David Reisman (LLNL), Chris Russell (Schafer Corp.), Rick Spielman (former Sandian), David Tanner (Schafer Corp.), and Arthur Toor (LLNL, ret.).

Lab Test Data System Modernization Team

The Lab Test Data System Modernization Team will be recognized for work on the B61 surveillance lab test data system modernization project. The team developed a new data system for the B61 Test Equipment at Sandia's Weapon Evaluation Test Laboratory located at Pantex. The new system has many enhancements over the old data system. The team met the required schedule window between testing cycles within the planned budget.

Biu So (2955, Team Lead), Jerome Biedscheid (2951), Patricia Bonham (2955), William Carroll (2951), Veronica Chavez-Soto (5735), Rodney Depoy (2955), Sharon Fisher (2955), Richard Fitak (2955), Lynn Fugelso (2955), Oscar Hernandez (2955), Gary Jones (2953), Frank Love (2953), Dean Martin (2955), Jerry McClellan (2951), Anna Otero (2955), Roberto Pacheco (2953), Jill Rivera (9232), Michael Rogers (2955), Bryant Sterling (2955), James Walker (5852), and David Wesley (2953).

MC3730 Product Realization Team

The MC3730 Product Realization Team (PRT) will be recognized for delivery of the MC3730 Detonator in spite of overwhelming obstacles. The team solved two contamination problems and qualified a new supplier during the Lot 18 production process of the MC3730 Detonator. If allowed to persist, the contamination source would prevent qualification and acceptance of the parts jeopardizing the W87 weapon-ready status. The PRT's quick actions enabled an ahead-of-schedule delivery to the next assembly step. The original Lot 17 parts, which were initially determined to be unusable, were subsequently accepted by DOE and supplied for Test Bed activities at Pantex, preventing the complete loss of these valuable components.

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CALIFORNIA WEAPONER Mike Chiesa was honored this year for revolutionizing the design, modeling, and manufacturing of weapon-critical forgings for Gas Transfer System reservoirs. He developed forging process modeling tools that have significantly reduced production times and costs and increased final part quality. (Photo by Bud Pelletier)

Edward Russick (1811), John Schwartz (2952), Randy Van Cleave (8221), Paul Vianco (1835), Gary Andrews, Brad Baumgartner, Gary Becka, Mike Gerding, Bruce Lenhardt, David Prigel, David Richards, David Schoenherr, Larry Waters, and Ed Wenski (all H/FM&T).

EA Web Team

The EA Web Team will be recognized for its excellent service for developing an Engineering Authorization (EA) web application that allows engineers and designers to directly create, release, and revise Engineering Authorizations from their desktop or from any other facility via an Internet connection. The team's contributions allow engineers within the Nuclear Weapons Complex to better manage WR Product configuration.

Richard Graham (2995, Team Lead), Lauren Hancock (2995), Del Klinetobe (2995), Raymond Ng (8224), Glenda Ross (8224), Dirk Vanwestrienen (9329), and Frank Vigil (2995).

Glass-to-Metal Seal Process Improvement Team

The Glass-to-Metal Seal Process Improvement Team will be recognized for developing processes and defining requirements to achieve robust glass-to-metal seals while meeting programmatic time constraints. The purpose of the team was to create the information necessary to facilitate restart of glass-to-metal seals in connector shells to be used for LAC production at Kansas City. They accomplished the goal within the time constraints, made significant contributions to the knowledge of product engineers, and established a model for future design agency product engineers to follow.

Terry Ernest (1733, Co-Team Lead), Saundra Monroe (1843, Co-Team Lead), Marcey Abate (2102), Dick Brow (University of Missouri-Rolla and former Sandian), Steven Burchett (9126), Wayne Buttry (1822), Terry Guillinger (3030), Phil Hoover (2111), Alice Kilgo (1822), Tom Matthews (ARC Associates, Plymouth, Minn.), Bonnie McKenzie (1822), Joseph Michael (1822), Clay Newton

Weapon awards

(Continued from preceding page)

William Tarbell (2553, Project Lead), Rick Cottrell (H/FM&T), Edward Culver (H/FM&T), John Davis (H/FM&T), Roy Dickey (2554), Carlos Esparza (H/FM&T), Ken Ferguson (H/FM&T), David Huskisson (2552), Adam Jimenez (2554), John Larson (H/FM&T), Roy LeBlanc (2553), Albert Lucero (10252), Steve Marten (H/FM&T), Thomas Massis (2552), Herb Mirfasihi (H/FM&T), Manish Patel (2552), Bob Patton (2552), Ronald Sauls (8266), N. Robert Sorensen (1832), Sandra Tonnesen (2993), and Terry Witt (2553).

MC4368A Neutron Generator Process Development Team (PDT)

The MC4368A Process Development Team (PDT) will be recognized for providing accelerated development of laser weld, assembly, and cleaning processes to support production of the MC4368A Neutron Generator Subassembly in 2001. The Process Development Team also delivered reliable, documented manufacturing drawings and processes to support MC4368A PPI and Qualification lots.

Naomi Christensen (12323, Team Lead), Paul Cunningham (14184), Errold Duroseau (14402), Muhammad El (14401), Phillip Fuerschbach (1833), Al Garcia (14402), James Kajder (14407), Louis Malizia (2525), Kenneth Pierce (12323), Gary Pressly (14402), James Lyn Provo (14402), Adrian Romero (14405), Joseph Romero (14405), Gloria Roybal (14402), David Schmale (1835), Deanna Sevier (14402), Robert Stiers (2561), Theda Jean Williams (14402), Anthony Wingate (14408).

Neutron Tube Production R&D Team

The Neutron Tube Production R&D Team will be recognized for use of scientific tools to improve yield and reliability of neutron tubes. The team applied science tools to advance understanding of the source and target films and the plasma behavior in neutron tubes. This understanding extends to the non-destructive analysis of as-produced films as well as to the characterization of the films during and subsequent to their operation. These studies have resulted in direct improvement in film production quality, in identifying problems, in tube reliability, and in significant cost savings in manufacturing.

Paul Miller (1118, Project Lead), Ben Aragon (1118), Jim Banks (1111), Dale Blankenship (14405), Jim Browning (14405), Steve Balsley (14405), Greg Hebner (1118), Bill Wampler (1111), Stuart Van Deusen (1111).

Nuclear Weapon Strategic Business Unit Policy and Processes Team

The Nuclear Weapon Strategic Business Unit Policy and Processes Team will be recognized for outstanding leadership and technical excellence in the development and deployment of the Nuclear Weapons Strategic Business Unit Policy and Processes.

Gail Willette (9821, Project Lead), Carolyn Bucklen (9821), Jeanne Evans (9821), Kay Holswade (2102), Allison Kane (9821), Chuck Loeber (2911), Karen Marlman (9821), Kim Mitchiner (9800), Mary Ann Monia-Archibeque (9821), and Linda Reckaway (9821).

Phoenix Implementation Team

The Phoenix Implementation Team will be recognized for exemplary teamwork and technical achievement in the replacement of gas sampling carts at Pantex. The team used modern gas handling technology, dry pumping systems, and very short gas sample lines to design and build new Enhanced Gas Sampling Carts with greatly improved measurement of water vapor concentration. The improvement will pay dividends in determining desiccant end-of-life for weapon systems as well as provide a red flag for potential areas of materials degradation due to excess moisture.

Terry Gullinger (3010, Co-Team Lead), Sandra Chavez (2951, Co-Team Lead), Stephen Crowder (12323), Guy Dahms (12336), Martin Fuentes (12333), Mike Kelly (1822), David Krukar (2541), Roger Lizut (2950), Lori Maestas (2114), Kenneth Miller (2952), Gerry Mitchell (2952), Michael Newman (2114), Todd Sterk (2952), Steve Thornberg (1812), and Joel Wirth (2131).

Photonic Driver Team

The Photonic Driver Team will be recognized for its creativity in developing photonic driver techniques

for performing shock wave science at the microscale. This development establishes a novel and unique capability for determining dynamic properties of materials that will be crucial for the future needs of the nuclear weapons program. In addition to its potential to greatly reduce the time and cost of shock experiments, the new development will find unique applications including the study of bulk-processed materials with minimal dimensions, very scarce or hazardous materials, and materials that can only be made with microscale dimensions.

Robert Setchell (1122, Team Lead), Dante Berry (2612), Jaime Castaneda (9112), Archie Farnsworth (9232), and Wayne Trott (9112).

Pinch Weld Quality Team

The Pinch Weld Quality Team will be recognized for resolving a serious MC2597A production problem to assure delivery of safe and reliable reservoirs. The team identified the root cause of the problem and evaluated and implemented corrective actions to resolve a serious production problem to assure delivery of safe and reliable gas transfer system reservoirs to the W62 stockpile.



Donald Kasberg (8243, Team Lead), Karl Arnold (H/FM&T), Charles Cadden (8724), Joe Chiu (12336), Miles Clift (8723), Marty Cunningham (H/FM&T), Bob Dearth (H/FM&T), LaRoux Gillespie (H/FM&T), Mary Grant (H/FM&T), Dan Grote (H/FM&T), Ken Hicken (8243), Wayne Highland (H/FM&T), Alice Johnson (8241), Carol Kestin (Savannah River site), Jack McGrath (H/FM&T), Carl Pretzel (8243), Foster Robinson (H/FM&T), Jose Samayoa (H/FM&T), Wayne Simonis (H/FM&T), Bill West (Savannah River site), Nancy Yang (8723).

W76-0/Mk4 Type 2F (JTA) Redesign Team

The W76-0/Mk4 Type 2F (JTA) Redesign Team will be recognized for the design, development, and FPU of the redesigned W76-0/Mk4 Type 2F (JTA). The team was focused on designing and developing a new telemetry system to support the extended life of the W76-0/Mk4. The team also focused on meeting requirements for additional higher-fidelity DOE and Department of Defense data, reducing development and unit production costs, and meeting schedule to avoid interruption

to the W76-0/Mk4 Surveillance Program.

Karen Shin (2113, Team Lead), Thomas Brewer (12336), Robert Chan (8216), Dean Clark (8211), Guy Dahms (12336), Rex Eastin (8211), John Freie (ret.), Paul Gabaldon (2113), Gerald Gurule (12326), James Hanlon (1733), Matthew Johnson (8211), Paul Kuehne (2102), Mark McConkie (8211), Timothy Mooney (1732), Hal Radloff (2114), Danny Rey (2565), Karl Ricker (12326), Pete Royval (8216), Ray Sanchez (12336), Doug Schuler (2952), and John Williams (5741).

W80 Plastics & Materials Implementation Team

The W80 Plastics & Materials Implementation Team will be recognized for creating and maturing new materials-intensive surety technologies for the SLEP Program. With program, engineering performance, and manufacturability in mind, the team worked together committed to expediting the "research to development to application" cycle for new surety component architectures. By integrating aspects of design, research, testing, fabrication, and assessment, the team was able to offer the W80 SLEP Project Group significant design flexibility in dealing with volume and weight constraints.

Jack O'Connor (8244, Team Lead), Thomas Bennett (8722), Edwin Bochenski (8722), Paul Dentinger (8722), James Dremalas (8244), William Even (8722), Michael Foley (8267), Steven Goods (8725), Donald Herron (8256), Marion Hunter (8722), Marion Jackson (8244), Patrick Keifer (8722), Scott Lindblom (8244), Jenny Pierce (H/FM&T), Jerome Stofleth (15322), David Straub (5933), LeRoy Whinnery (8722), Marion Wilde (5933).

W87 Alt 345 Gas Transfer System Team

The W87 Alt 345 Gas Transfer System Team will be recognized for the development of a novel technique for quantifying unit-to-unit variability in weapons. This team of system engineers and designers, working with associates at Kansas City, Savannah River, and Pantex, designed, and qualified the Alt 345 with associated transportation and handling hardware. The Alt 345 team reached the First Production Unit (FPU) at the Pantex BWXT facility on schedule in FY01. The first field replacement of Alt 345 was completed on the same day as the Pantex BXWT FPU. Since reaching FPU, the Alt 345 production has continued on schedule.

Kenneth Buck (8225-3, Team Lead), Robert Anderson (ret.), Lorenzo Asia (8224), William Bopp (2913), Jennifer Chan (8731), Joe Chiu (12336), William Delameter (8268), G. Hicken (ret.), Jay Huttenhow (29550), Lois Johnston (8361), Carol Michaels (2912), Dennis Nelson (ret.), Bennie Odegard, Jr. (ret.), Donald Osbourn (8225-3), Albert Reichmuth (8221), Conrad Stayner (2913), Todd Sterk (2952), G. Cook Story (ret.), Dale Walker (8231), David Zanini (8118).

WALS Robotics Team

The WALS Robotics Team will be recognized for the development of the first robotic system to handle exposed (unpacked) nuclear pits in the stockpile. The WALS system will significantly reduce human exposure to radiation by eliminating much of the hands-on contact with nuclear materials by technicians in the weigh and leak check facility at Pantex.

William Drotning (15272, Team Lead), Howard Kimberly (15272), Paul Johnson (15272), Al Jones (Ret.), Kevin Jones (15272), Brian Kast (15272), Charleene Lennox (15272), James Majors (15272), Carla Montoya (ret.), James Spalding (ret.), Walter Wapman (15272), Robert Watson (9811), Charles Yagow (2992), Joel Kuhlmann, David Darras, Ellis Dawson, and Dan Homan (all no longer at Sandia).

Weapon System Unit-to-Unit Variability Characterization Team

The Weapon System Unit-to-Unit Variability Characterization Team will be recognized for development of a novel technique for quantifying unit-to-unit variability in weapons. The team identified the need, proposed the approach, obtained programmatic support from the US Navy and Royal Navy, coordinated hardware needs with Joint Test Program participants (Los Alamos, Lockheed Martin, ITT, and AWE), and conducted the experiments necessary to create this unique insight into understanding of the degree of unit-to-unit variability.

Randall Mayes (9125, Team Lead), David Clauss (9125), Larry Dorrell (9125), Paul Gabaldon (2113), Anthony Gomez (9125), Jeffrey Gruda (2113), David Kelton (9125), Thomas Paez (9133), and Angel Urbina (9133).

Adios, hasta luego: Merrill Jones retires after 54 years at Sandia; his career spans Labs' entire history

By Iris Aboytes

"When it's time for you to go you'll know it." These are the words of Merrill Jones (5743) as he prepares for his retirement on July 11 after 54 years at Sandia.

Merrill is the only employee who has been at Sandia during its entire 53-year history as an independent laboratory. "In the early years, this was a place of mystery," he says, "Everybody suspected they knew what went on out here, but they didn't really know. They did know, however, that there was money in it."

Merrill started at Sandia on July 6, 1948. Sandia was still a branch of Los Alamos, and a major construction effort was just being started to erect permanent structures (including Bldg. 800, Sandia's first permanent brick structure). His work at Sandia has gone from working in the electronic instruments calibration unit, the Primary Standards Lab, to working in the computer security arena, and most recently to being a part of the teams working on the Multispectral Thermal Imager (MTI) satellite. Both of these teams, the MTI Integration & Test Team and MTI Launch & Operations Team were awarded Employee Recognition Awards.

When Sandians were notified in 1949 that President Truman had given AT&T the opportunity "to render exceptional service in the national interest" by managing Sandia, he says his own reaction was atypical and very personal. Among the many different reasons that brought him to Sandia was the possibility of furthering his education. He thought that would be encouraged by the University of California, so he was naturally disappointed. "In the end things worked out OK," Merrill says. He earned his master's degree (with dual majors in mathematics and computer science) while working at Sandia.

He feels one of the greatest changes at Sandia is that we have become more community-conscious and responsible citizens of the nation and the world. This is something he wants to keep doing when he retires. He wants to find something that engages him and to make a direct contribution to the community. "There are lots of needy people and injustices that need attention," Merrill says. "We have to do what we can; if we don't, we don't have much hope."

Asked why he would come to Sandia if he were 25 and coming out of Harvard, Merrill says, "I suppose that prestige would be very important to me, and I can't think of a more prestigious place to be hired into for my first real employment. In addition, I would think that there are people already there that I could learn a lot from. But, then I never went to Harvard."

Merrill has seen many great technological accomplishments the last 54 years. "The ones



WALKING THE WALLS waiting for retirement, Sandian Merrill Jones demonstrates the young-at-heart attitude that has kept him on the payroll at the Labs for 54 years. His service actually predates the establishment of Sandia as an entity separate from Los Alamos. (Photo by Randy Montoya)

"Retiring is harder than you think, especially when you have been close to the center of things. This is why I have stayed so long – the work was challenging and every day I felt privileged to be working with the wonderful people around me."

that impressed me the most," he says, "were solid-state devices (transistors, integrated circuits, light-emitters and detectors), the communication infrastructure, the personal computer — all because of the way they have impacted our lives in terms of economy and culture."

About the terrorist attacks of Sept. 11, Merrill says, "I felt very, very sad. I didn't anticipate anything like it, though I know that we are not well-

liked by everyone, an understatement.

"Sandia has a lot of very interesting people with great abilities, exceptional talents, and strong personalities," Merrill says. "Retiring is harder than you think, especially when you have been close to the center of things. This is why I have stayed so long — the work was challenging and every day I felt privileged to be working with the wonderful people around me. It's great to make contributions in a fashion that is both constructive and helpful." Merrill will still be around making contributions: He will be back at Sandia as a consultant.

Merrill has four sons. He says they are disappointed that their dad is retiring. After all, they like to tell people that dad is 77 and still has a full-time job. Of course, they recognize that their dad is entitled to do what he wants to do. His wife of 52 years, Frances, is happy he will be home. Two of his sons are in the health care system and keep telling him how well he is doing for his age. "I'm not an athlete — actually when I was a kid I was kind of a weakling. I try to eat right and get some exercise, but I actually do nothing special," Merrill says. "I just selected good ancestors."

Asked what he'll do when he retires, Merrill came up with just a few little things he wants to do in his free time: "I want to learn to play the piano; I want to learn to read and speak at least one more language. I want to find out more about my grandparents and great-grandparents, at least one of whom was a Shawnee Indian.

"I want to write some notes about what I remember of my relatives and friends who are gone, and

of the world as it used to be. I want to do something constructive for society, for the problems I see there with an aging and a culturally displaced population.

"I want to keep on learning more about how things work and why they don't — in the physical world, the economy, in society, between people and nations. . . . Well, that's a partial list, anyway. The problem, as you see, will be paring the list."

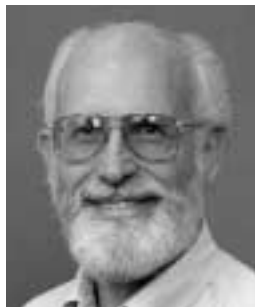
Pulitzer Prize author David McCullough says, "Real success is finding your lifework in the work that you love." Merrill Jones obviously found real success in a life that he dared to share with Sandia.

More on Merrill

The *Lab News* featured a substantial story about Merrill when he celebrated his 50th anniversary at the Labs. It touched on many of the highlights of his career. Read it at www.sandia.gov/LabNews/people/jones_story.html.

Mileposts

New Mexico photos by Iris Aboytes
California photos by Bud Pelletier



George Clark
40 2616



Larry Stephenson
40 1123



David Smallwood
40 9124



"Andy"
35 2552



Wilson Barnard
35 1736



Leland Byers
35 9334



Milton Clauser
35 9227



Rondall Jones
35 6523



Don Osbourn
35 8225



Renee Foster
30 3031



Ronald Hadley
30 1742



Peter Royval
30 8233



John Boyes
25 6251



Billy Brock
25 2345



Christopher Cameron
25 6215



John Dunton
25 14111



Stephen Dupree
25 5914



Dwight Jennison
25 1114



Eugene Marquez
25 3131



Philip Rodacy
25 2552



Veronica Chavez-Soto
20 5735



Mike Daniels
20 5933



Daryl McCollister
20 12332



John Norwalk
20 14403



Thomas Paez
20 9133



Thomas Sanford
20 1677



Karen Shanklin
20 6516



Ray Shaum
20 15201



Patrick Smith
20 2612



Sanford Ballard
15 6533



Jimmy Brown
15 2613



David Gallegos
15 6533



Roxana Jansma
15 5931



Timothy O'Hern
15 9112

Lockheed Martin sponsors . . .

A Capital Fourth



For the 15th straight year, Lockheed Martin is again a sponsor of "A Capitol Fourth," the annual Fourth of July celebration on the National Mall in Washington, D.C. This year's event will feature an evening of patriotic music topped with a dazzling display of fireworks. The program will air live on public television stations around the country on July 4 from 8-9:30 p.m. Eastern Time (check local listings). It will also be broadcast on National Public Radio and the American Forces Radio and Television Network. The illustration above is a detail from a painting, the "Spirit of America" by artist Thomas C. Kozar, commissioned by Lockheed Martin in honor of this year's celebration.

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

MISCELLANEOUS

- FLORIDA CONDO, 1 week, you choose dates, sleeps 6, 1 mile from Disney World, \$700. Lockwood, 821-6331.
- PIMENTAL GUITAR, steel strings, model Acoustica GM, \$500; push-reel-type lawn mower, w/catcher, \$35. Aragon, 888-3473.
- FURNITURE, Ethan Allen, excellent condition; 52-in. Zenith TV, \$750; diamond ring, \$2,400; stamp collection, \$400. Phelps, 821-1151.
- PUSH MOWER, Craftsman, rear bagger, 20-in. cutter, runs great, must sell, \$40. Graham, 896-2231.
- GENERATOR, Coleman Powermate, 5000W, 9-hp/OHV, 50% quieter, B&S engine, used <10 hrs., manuals, excellent condition, \$495. Reynolds, 286-0858.
- POOL, Dough Boy, 16-ft. diameter, 4-ft. deep, no rust, no leaks, includes everything you need, \$1,100. Penn, 883-4195.
- BOOKCASE, black, \$15; couches, \$30; wing-back chair, \$10; white pantry, \$20; small, white dressers, \$10 ea. Quiroz, 833-5420.
- TIRES, 4, Kumho Powerguard MT833, 31x11.50R15LT, on Weld Racing Scorpio V 15x8, Ford 5-hole, <1,000 miles. Grazier, 292-7926.
- REFRIGERATOR, 22-cu. ft., white, side-by-side, w/ice dispenser, General Electric, 8 yrs. old, \$500. Dwyer, 271-0741.
- FOUR-POST BED, antique, double, new Serta spring & mattress, \$350; twin frame & Serta box spring, \$55. Gritz, 292-3244.
- UPRIGHT PIANO, Young Chang, 7 yrs. old, gorgeous concert quality sound, beautiful cherry finish, \$1,750 OBO. Blaich, 235-3178.
- SODA VENDING MACHINE, ice-cold refrigeration, \$160 OBO; janitor-stylo mop bucket w/strainer, \$18 OBO. Montano, 363-2906.
- DIGITAL STICK CONTROLLER, Wingman Extreme, \$22; Ultimate Doom F-22 & Commanche \$8 ea. Dietz, 286-8244.
- SOFA, olive green, denim style fabric, 3 yrs. old, purchased at Heritage House, close to base, must sell, \$225. Mares, 385-7687 or 299-2236, ask for Michelle.
- DINING ROOM TABLE, extends from 42-in. to 60-in., dark particle board, good condition, free, you pick up. Wilson, 293-2228.
- LOFT BED, homemade, twin-size, built-in bookcase, desk, chest of drawers, good condition, \$250. Wright, 299-6443.
- MONITOR, Dell 21-in. Trinitron UltraScan 1600 HS, 19.8-in. viewable, 4 yrs. young, manual available, \$150 OBO. Lauffer, 867-2043.
- METAL SHED & FOUNDATION KIT, 8x10, gambrel roof, still in box, don't need in new home, paid \$300, asking \$250. Lewis, 323-7268, ask for Barbara.
- RUNNING SYSTEM, Nike SDM Triax, high tech (speed & distance), 3 mos. old, retail \$230, asking \$75. Lizut, 842-1028.
- FISH TANK, 29-gal., w/black wood stand & hood, \$200 OBO. Elliott, 884-2349.
- DESK/HUTCH/PRINTER TABLE, fair condition, \$25; rowing machine, \$10. Henderson, 254-1803.
- NAIL GUN, Hitachi NR83AA framing nailer, completely refurbished, works like new, \$150. Clevenger, 821-0046.
- MOTORCYCLE CARRIER, fits 2-in. receiver hitch, has ramp & tie points, \$250; recliner/rocker, beige, excellent shape, \$95. Sullivan, 298-4880.
- ARABIAN GELDING, 1 yr. old, sorrel, imprinted, buddy, loves people, & easy to catch, excellent conformation, would make excellent 4-H project, \$1,200. Arana, 228-4134.
- FINE CHINA, Rosalinde by Theodore Haviland, made in France, 32 pcs., \$1,100 replacement value, asking, \$550. Martin, 296-6727.
- ALTO SAXOPHONE (Bundy), 6 yrs. old, used for 4 yrs., good condition, paid \$1,200 new, asking, \$600. Fitzpatrick, 292-1630.
- EVAPORATIVE COOLER, Champion Model 4800, roof-mount downdraft, 1/2-hp motor, mounting legs, new, never used, \$250. Russell, 344-0290.
- TIRES, 4, LT24.5/75/R16 Hankook Mud & Snow radials, only used about 8K miles, load range E, \$225. Vieth, 281-2003 or pager, 561-1638.
- SANYO TV, 19-in., has intermittent vertical linearity problem, it is fixable & free. Dubes, 550-5827.
- INDOOR SWAMP COOLER, 16" x 21" x 24", sits on floor, 3-panel intake, ivory color, \$75 OBO. Newman, 266-6928.
- DINING TABLE, 36" x 60", brass/glass, 4 chairs, \$300; couch table, end table, coffee table, excellent condition, \$200. Zamora, 294-3737.
- STEPLADDER, 12-ft. fiberglass, type 1A heavy-duty, like new, too tall for new home, \$175. Church, 821-0268.
- SEAT, 60/40 bench out of '94 Ford Ranger, blue cloth high-back, excellent condition, like new, \$400. Whiston, 292-1541.
- PAGER, Motorola LS350 numeric, w/manual, has 1 mo. service renewal, \$60/yr., \$10. Ganter, 265-5007.
- LAWN MOWER, Sears 20-in., w/grass catcher, \$45. Blickem, 271-1413.
- '99 TAKAMINE GUITAR, G-series steel-string acoustic/electric, solid wood top w/case, Peavy KBA-60 Amp, \$650. Schneeberger, 286-3254.
- POLY PIPE, black, over 475 ft. of 2-in., 350 ft. of 1-in., irrigation or sprinklers, \$75 takes all. Riley, 869-2119.
- DOONEY & BOURKE PURSE, black w/brown, great condition, \$140. Gutierrez, 922-7390.
- SOFA SLEEPER, w/mattress, beautiful condition, blue w/details, \$100; computer desk, dark wood, \$40. Lewis, 294-0766.
- BASS GUITAR, 6 string, amber quilt maple arch top, gold hardware, 2 soapbar pickups, like new, \$315. Kureczko, 286-4426.
- TOTAL BODY WORKOUT, Aerobic Rider & Swing step exerciser, \$30 ea. OBO. Sanchez, 898-9598.
- NEW AMP, 10-in. subwoofer, \$125 for both; March home gym, \$75; male bearded dragon, \$75. McCrory, 401-4412.
- CAR MAGAZINES: *Hot Rod*, *Motortrend*, *Car and Driver*, some from 1966, let's talk deal. Schwerkoske, 822-1914.
- FULL-SIZE BED, box spring, mattress, oak headboard, footboard, 2 matching chests, corner table, nightstand, \$350. Smith, 299-6873.
- NORDICTRACK, 20th anniversary edition, near new condition, includes pulse, distance, time speed, calories, \$200. Furnish, 884-6626.
- DOUBLE BABY JOGGER STROLLER, w/sun cover, navy & green color, great condition, \$95. Smithpeter, 856-7047.
- 13-IN. TV, w/remote, Sanyo; tan recliner; Zenith audio system w/remote; GE vintage AM/FM radio. Kiro, 255-0890.
- USED FURNITURE: king-size bed complete w/headboard, couch, misc. chairs, dining table w/6 swivel chairs, also used bricks. Ryan, 343-9565 or 345-3124.
- CAMPER SHELL, red, for long wide pickup, originally off early '90's Ford, \$300. Lemke, 898-5047.
- CAMPER SHELL, Glasstite, fits old style long wide beds, needs some work, still solid, \$150. Fuller, 897-1881.
- 17-IN. CUSTOM WHEELS, "Elite" prog, 17 x 7.5, 5 hole, w/Kumho ECSTA Supra 712 tires, 215/40/ZR17. <3K miles, \$1,095. Martel, 293-1892.
- ANTIQUES: Hoosier-style kitchen cabinet, child's high chair, crank Victor phonograph, tiger-oak dresser w/mirror. Ewen, 836-3563.
- ROWING MACHINE, metal folding bed, crutches, disability walker, woman's bicycle, pool sand filter, auto side mirrors. Moss, 298-2643.
- COMPUTER, 800 MHz, w/13GB HD, 128MB-RAM, CDROM, 56K, \$285; Celeron 366 processor capable of 550 MHz, \$15. Noble, 271-8631.
- KITCHEN CUPBOARD, Hoosier, original oak, flour bin, metal bread drawer, tin counter-top, etched glass spice jars, early 1900. Carpenter, 250-6604.
- GARAGE SALE, to benefit League of Women Voters, Sat. June 29, 8 a.m.-2 p.m., 2403 San Mateo west parking lot. Burroughs, 822-9852.
- BASKETBALL GOAL, Huffly Sport Street Smart Portable, \$50. White, 294-5692.
- MOVING SALE, Sat., June 29, 8 a.m. to noon, 1317 Parkland Circle SE, south of Zuni/Washington. Richards-Hardesty, 268-8010.
- CEMENT MIXER, \$150; 7 single-hung thermal-pane windows, \$250; lodge-style hanging fireplace, \$250; 8" x 14" beams, various lengths, 40c/bf. Talbert, 298-9036.
- PIANO, Old Jewett, made in Boston, serial #23982, very cheap to good home, can deliver. Wilder, 345-0670.
- SEWING MACHINE, Brother Pacesetter Model 8200, super for embroidery, Model 8500 updates, includes all attachments, \$975. Eldridge, 821-7636.
- SOUTHWEST AIRLINE VOUCHER, 1 roundtrip, expires March 2003, \$300 firm. Norwood, 292-0072.
- ROLLERBLADES, Lightning brand, new elbow, wrist & knee pads, men's size 9, women's size 10, excellent condition, \$150. Malcomb, 294-6975.
- ADS USB INSTANT DVD, Mpeg 1/2 video capture, all cables, manual, software, paid \$200, asking \$120. Ennis, 301-6228.
- DINING SET, maple, includes drop-leaf table w/extender, 4 chairs & china cabinet, \$175. Daniel, 260-0461.

How to submit classified ads

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

- E-MAIL: Michelle Fleming (classads@sandia.gov)
- FAX: 844-0645
- MAIL: MS 0165 (Dept. 12640)
- DELIVER: Bldg. 811 Lobby
- INTERNAL WEB: On Internal Web homepage, click on News Center, then on Lab News frame, and then on the very top of Lab News homepage "Submit a Classified Ad." If you have questions, call Michelle at 844-4902. Because of space constraints, ads will be printed on a first-come basis.

Ad rules

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

CAMPING & SCUBA GEAR, kayak, large woodstoves, 65-gal. LP tank, call for info. Vickers, 291-1333.

TRANSPORTATION

- '84 MERCEDES-BENZ 190e, 4-dr. sedan, tan, tan leather interior, AM/FM cassette, 93K miles, \$2,500 OBO. Miller, 293-4682, after 6:30 p.m.
- '91 AUDI 100, PW, PL, PS, cruise, sun roof, Bose AM/FM/cassette, complete maintenance records, \$5,295. Harrison, 897-0658.
- '92 SUBARU AWD SVX, fair condition, everything works, paint tired, daily driver, too many cars, \$2,500 OBO. Eichert, 873-4981.
- '97 MERCURY TRACER SW, white, 5-spd., below book, 43K miles, excellent condition. McKiernan, 255-2277.
- '97 CHEVY EXT. CAB, 4x4, V6, 5-spd. manual, green, cruise, AC, tilt, new tires, \$9,950 OBO. Whitlow, 286-2591.
- '89 PLYMOUTH GRAND VOYAGER, needs transmission but otherwise in great condition, \$500 OBO. Tapia, 280-8888.
- '00 CHEVROLET CAVALIER, 4-dr., 5-spd., AC, CD, very low miles, very clean, excellent condition, \$8,700. Martinez, 344-9706.
- '92 BMW 325i, 5-spd., AC, leather, 6-CD changer, sun roof, new tires, very clean, \$10,000 OBO. Goodnow, 821-3113.
- '94 CADILLAC, 8-cyl., Fleetwood Brougham, 4-dr., excellent condition, 106,800 miles, recent motor upgrade, \$6,000. Mulligan, 281-3611.
- '93 MERCURY VILLAGER LS, red/silver, leather seating, fully loaded, excellent condition, new tires, 103K miles, \$6,900 OBO. Gaona, 889-0248.
- '01 FORD F-150, XLT cab, \$19,000. Clarke, 922-9138, ask for Jason.
- '95 MERCURY COUGAR XR-7, V8, AT, all power, 70K miles, garage-kept, just like new, \$6,500. Rogers, 263-9459.
- '95 CAMRY LE, 4-dr., hunter green, 82K miles, well-maintained, available July 8, moving must sell, \$7,000. Sustaita, 277-1397 or 362-2604, ask for Eric.
- '01 HONDA CIVIC COUPE, 5-spd., AC, PL, PW, CD changer/cassette, floor mats, cruise, excellent gas mileage, retail \$15,200, asking, \$14,500 OBO. Sanchez, 720-9078.
- '94 FORD F-150 XLT, short bed, 4WD, V8, AT, bed liner, towing package, alloy wheels, low mileage, \$14,000 OBO. DeSantis, 821-2115 or 269-2852, leave message.
- '93 OLDS CUTLASS SUPREME SL, 3.1, V6 engine, PW, 74K miles, great condition, \$5,500. Gonzales, 821-1795.
- '99 CHEVY METRO, red, 2-dr., hatch, 5-spd., AC, airbags, 67K miles, excellent condition, \$4,000. Jaramillo, 615-4891.

- '94 ACURA LEGEND, 4-dr., loaded, AT, sun roof, CD, alarm. Leather, 87K miles, great condition, \$12,500. Sala, 899-6020.
- '92 CHEVY 3/4-TON, 4x4, regular cab, 305 cu. in., 5-spd., custom shell, good condition, \$5,200. Miller, 296-2697, ask for Phil or Mark.
- '87 TOYOTA TERCEL HATCHBACK, 4-spd., CD, 159K miles, new timing belt, clutch, tires at 145K, \$1,400 OBO. Campbell, 296-5792.
- '91 CHEVROLET ASTROVAN, extended body, LS package, very well maintained & very good condition, below book. Brooks, 256-3454.
- '94 FORD EXPLORER, 4x4, power everything, cassette, excellent condition, \$7,200. Sparling, 281-7267.
- '98 FORD EXPEDITION, 4.6L V8, 4WD, XLT, front/rear AC, 3rd seat, alloy wheels, ABS, 59K miles, excellent condition, \$16,950. Sterk, 856-7784.
- '90 FORD AEROSTAR, gray/silver, AM/FM cassette, runs well, \$2,200. Montoya, 797-4538.
- '97 KIA SPORTAGE, 4x4, 5-spd., AC, PW, PL, red, gray interior, 24-mpg, almost new tires, 50K miles, \$7,400. Hayward, 292-2980.
- '93 MAZDA MIATA, convertible, 5-spd., AC, stereo, new tires & timing belt, 87K miles, \$4,900. Lenberg, 238-0362.
- '89 HONDA PRELUDE Si, 5-spd., AC, new paint, clutch, brakes, tires, 109K miles, runs great, \$4,150. Stockham, 856-7768.
- '94 CHEVROLET LUMINA, 4-dr., PS, PB, power seats, cruise, new fuel pump, charcoal gray, cassette, 87K miles, very good condition, \$3,500. Montoya, 881-6898.
- '01 FORD F150, 4x4, supercrew, 5.4L V8, 31K miles, \$23,800; '01 Honda Accord LX sedan, 4-cyl. 15K miles, \$17,500, both great vehicles, moving. Weatherly, 203-4487, ask for Debbie.
- \$22,500. Lucero, 299-6842.
- 3-BDR. MOBILE HOME, '97 Sabre, 16' x 70', w/wrought iron, near KAFB, excellent condition, rent to own. Herrera, 203-5678, ask for Erica.
- 5 ACRES, East Mountains, 1/3 trees, 2/3 meadow, off south 14, \$70,000 will carry REC w/\$6,000 down. Helgesen, 281-5407.
- 3/4-BDR. TOWNHOME, West Springfield, VA, easy CD commuting, walk to river park. Merkle, 284-3578, ask for Peter.
- 3-BDR. MOBILE HOME, 2 baths, '97 Schult double-wide, 60' x 28', beautiful kitchen, Zone 1 construction, assumable loan, excellent condition. Kopcuk, 384-3013.
- 3-BDR. HOME, 1-3/4 baths, approx. 1,700 sq. ft., recently remodeled, 2-car garage, shed & dog pen, fruit trees, Taylor Ranch, \$132,900. Holmes, 897-0916.
- 3-BDR. HOME, 1-3/4 baths, 2,100 sq. ft., 2-car garage, RV pad, 2 blks. from Sandia HS, \$157,900. Rice, 352-7590.
- 4-BDR. HOME, 2-3/4 baths, 2,189 sq. ft., large 2-car garage, 18-ft. wide side access for RV, \$166,900. Gallegos, 293-5634.
- 3-BDR. MOBILE HOME, 2 baths, double-wide, front porch, 1 acre landscaped, Peralta, 2 wells, completely remodeled, new carpet, 2 large decks/awnings, 2 sheds, \$94,500. Cummins, 307-1390.
- BUILDING LOTS, 2, investment, Tome area, for sale or trade. Shaffer, 256-7601.
- 3-BDR. BRICK HOME, Hoffman, large den, 2-car garage, pantry, fireplace, cedar closet, workshop, covered patio, completely restored, \$149,900. Wood, 299-8826.
- 3-BDR. HOME, 1-3/4 baths, 2,000 sq. ft., living room & den, large 2-car garage, recent remodel, room for RV, Comanche/Eubank, FSBO, \$162,900. Burroughs, 292-8967.
- 3-BDR. HOME, 1-3/4 baths, 1,500 sq. ft., 1-car garage, mountain/city views, Tramway & Monte Alto area, lease option, no bank qualification. Veres, 797-4714.

RECREATIONAL

- '97 CLASS C MOTOR HOME, Dodge 454, 77K miles, many extras, excellent condition, \$8,000. Bertsch, 873-0925.
- '94 VECTRA, 35-ft. diesel motor home, fully loaded, many extras, \$52,000. Palmer, 299-3557.
- '94 LARSON LXI214, 235-hp, fuel-injected V8, open bow, bimini top, cover, AM/FM cassette, 248.8 hours. Tyhurst, 281-1417.
- CANOE, Mad River Explorer, Royalex, cane seats w/back, outstanding all-around boat, \$1,200 new, asking \$700. Hefflinger, 281-1733.
- '99 HONDA XR650L, dual sport, showroom condition, 2,900 miles, white/red, new tires, White Brothers exhaust, extras, \$4,400. Baca, 271-2962.
- SAILBOAT & KAYAKS: Sunfish sailboat w/trailer, \$500; tandem kayak, \$300; whitewater kayak, \$200. Parish, 883-4879.
- MOUNTAIN BIKE, high-quality components, pump, accessories included, excellent condition, \$800 new, asking, \$325. Campbell, 281-0744.
- '96 HONDA CBR 600F3, white/red, Yosh pipe, new rubber, very fast, runs excellent, \$5,000 OBO. Adcock, 259-5518.
- DECKBOAT, 16-ft. center console, 65-hp, canvas top & sides, great for fishing/skiing, very good condition, \$2,000 OBO. Saladin, 881-2219.
- '00 PALAMINO CAMPER, cabover, pop-up, 8-ft., sleeps 4, 3-way refrigerator, stove, heater, jacks, excellent condition, \$7,000 OBO. Vieth, 899-9625.
- '94 KAWASKI KLR250, Enduro motorcycle, 4.5K miles, runs well, good shape, good tires, \$1,000. Barr, 281-1858.
- '91 KAWASKI EL250-E1 250HS, lightweight cruiser, saddlebags, windscreens, 24K miles, great first bike or smaller riders, \$1,300. Jacobs, 301-6440.
- '89 HARLEY-DAVIDSON LOW RIDER, black, many extras, excellent condition, 25.5K miles, \$10,000 OBO. Mantelli, 298-2603.
- '87 FRONTIER CLASS C, 350 engine, generator, microwave, AC, sleeps 6, clean, 78K miles, \$7,900. Ruggles, 275-3855.
- '00 HARLEY-DAVIDSON, Electra Glide Standard, Model FLHT, lots of extras, excellent condition, 15K miles, \$13,500. Washburn, 294-5921, ask for Ron.
- '97 ALPENLITE 5TH WHEEL, lots of extras, excellent condition, \$26,500 OBO. Rogers, 588-7931.

REAL ESTATE

- 40 ACRES, subdivided into 4 10-acre tracts, 9 miles south of I-40, must sell ASAP, 40 at \$139,000, 30 at \$105,900 OBO. Rowe, 286-5432.
- 5 ACRES, East Mountains, access off north 14 to Pinon Trail Road, \$125,000. Zottnick, 299-6339.
- 2-BDR. MOBILE HOME, 1 bath, '93, less than 10 min. from Eubank gate, located in 4 Hills Mobile Home Park,



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Bob Henderson, atomic pioneer, head of Z Division in Albuquerque, longtime Sandia VP, dies at age 87

Longtime retired Sandia VP Bob Henderson, who worked on the Manhattan project, witnessed the first atomic explosion in 1945, and then headed Sandia before it even was Sandia, died June 10 in Albuquerque. He had lived in Albuquerque since 1947, when he came here to head up Los Alamos's newly formed Z Division, which the next year became Sandia Labs.

After heading all Sandia operations in 1947, Bob subsequently held a series of weapons engineering positions at Sandia and was named vice president in 1957. A history of Sandia published in 1997 refers to Bob as "a significant figure in the history of the atomic bomb's creation and post-war evolution." It says he was known as "Mr. Sandia," and was essentially Sandia's senior engineer throughout his career. Sandia Senior VP Roger Hagenruber credits Bob with being instrumental in laying the foundations for the modern US nuclear arsenal.

Bob retired on Jan. 31, 1974, after more than 30 years service that began at Berkeley in November 1942. For many more years after his retirement, he continued to share his weapons expertise and experience with new generations of Sandians. Bob was 87 when he died last

week, leaving his wife, Berchie Henderson, sons Robert Henderson and William Henderson, numerous grandchildren and great-grandchildren, and a rich legacy of contributions to Sandia and the nation.

Bob was also, as far as we know, the only Sandian ever to win an Academy Award, receiving an Oscar in 1942 for his work for Paramount Pictures in process photography and special effects.

In 1989 during the observance of Sandia's official 40th anniversary (marked from the time Sandia came under AT&T's management for the then Atomic Energy Commission), Sandia's Public Relations and Technical Communications departments published a collection of first-person reminiscences about some of the contributions Sandians have made to the security and welfare of the country. Bob Henderson was interviewed for that booklet, *Recollections for Tomorrow*, by Rod Geer (12640), project coordinator. Here are extended excerpts from those recollections of Bob Henderson, which were titled "A TWA Ticket to Albuquerque":

"The last job I did for Paramount Pictures [as assistant to the chief engineer] in 1942 was to design a machine for salvaging nails that stagehands removed from sets. With the war on, motion picture studios literally couldn't buy nails. . . . [E. O.]

Lawrence [of the Berkeley Radiation Laboratory and later a Nobel laureate] knew that, and he and his deputy, Donald Cooksey, recruited heavily in Hollywood; you might say he raided the place.

"One day he and Cooksey arrived at my Paramount office asking me to come work with them. . . . He couldn't tell what I'd be doing, but he said, 'I guarantee I'm going to change your life.' . . . Truer words were never spoken! At the Berkeley lab, Lawrence put me right to work on design of a large electromagnet to separate U235 from the parent metal. It was for the pilot plant for Oak Ridge.

"One Monday in December of 1943 Lawrence



BOB HENDERSON

warned me that a couple of high-pressure artists were coming to see me . . . Robert Oppenheimer [who headed the Manhattan Project at Los Alamos] and George Kistiakowsky, who, until he died, was the world's greatest authority on chemical explosives. I'd heard of them.

"We talked all through the morning and during lunch. After lunch Oppenheimer asked, 'Do you subscribe to *National Geographic*, and do you read the ads in the back about boarding schools?' Oppenheimer explained that he and Kistiakowsky were working at the Los Alamos Ranch School for Boys [which had *Geographic* ads], and that he'd like to show me something there. I was real busy at Berkeley, but I said that after about a week's worth of work I'd be glad to come and talk.

"Oppenheimer then reached in his pocket and said, 'Bob, I have a TWA ticket leaving San Francisco in three hours. It's in your name.' I called my wife and asked her to pack a bag for a trip of about four days. Oppenheimer, Kistiakowsky, and I made that flight and arrived in Albuquerque about 10 p.m. . . . Four months later I got home to collect my wife and baby. I later learned that Oppenheimer had called Lawrence in search of someone to do engineering work with Kistiakowsky on the

implosion bomb. That's how I got to Los Alamos.

"When the war was over, I thought I'd get back into engineering work in California. . . . I had a resignation letter on [Los Alamos Laboratory director Norris] Bradbury's desk. One day he called me in, acknowledged the letter, but said he had a favor to ask — take the engineering talent at Los Alamos down to Albuquerque and start a Sandia branch [then called Z Division]. That'd let us get on with the job of making ordnance out of a scientific curiosity; Los Alamos could concentrate on the physics, metallurgy, and chemistry. He also said he'd get somebody else in for the job in eight months. 'Then,' he said, 'you can go off to California or any place else you want to go.'

"True to his word, Bradbury recruited Paul Larsen from Johns Hopkins in about seven months to take my place to run the new branch, hire people, and start building. But I stayed on in engineering.

"A number of things changed my mind about leaving after I'd delivered on that favor to Bradbury: his personality, the enthusiasm of the people who came with me to Sandia, the pioneering Sandians really, the interesting work that we were doing, and the challenge of some of the goals we began to see emerging."

Habitat house becomes a home at dedication ceremony

"Amazing Grace." "This Little Light of Mine." "Keep on the Sunny Side of Life."

With some singing, some praying, some speech-making, and some picnicking, approximately 65 volunteers, family, friends and neighbors gathered to dedicate the new, two-story stucco house at 4605 La Vida Nueva del Sur SW for Martha Rodriguez and sons Johnathon and Reuben.

"We want to thank all the volunteers for helping to make this dream possible for Reuben, Johnathon, and myself," said Martha at the dedication ceremony June 19. With the help of friends, she brought a truckload of furniture and other items to the event, ready to move in after the ceremony.

"We couldn't have done it without all of the

incredible volunteers from Sandia, who took time out of their busy schedules to make this house a reality," said Michelle Iwig-Harmon, president of the Greater Albuquerque Habitat for Humanity board of directors. "It's an inspiration to see Sandia involved in the community to this level."

Executive VP Joan Woodard, who volunteered on the project along with some 200 others, told the group that the success of the project was a combination of financial, leadership, and volunteer efforts. Lockheed Martin provided \$40,000 for materials on the project, a core of Sandia employees provided the leadership, and the volunteers provided the work to complete the project in 24 days, she said.

In addition to working on the project and supplying lunches, employees who weren't able to directly participate gave money, Joan explained. She presented Habitat for Humanity with a check for \$1,000 to help keep this important project going in the Albuquerque area.

Representatives from Roadrunner Food Bank were also on hand and presented the Rodriguez family with a month's supply of food as part of the housewarming ceremony.

Construction of the Habitat home was the Labs' third such project, said Darlene Leonard (12650), Sandia's volunteer coordinator. "Sandia volunteers gave up their flex time, vacation, or days off to participate," she said. Darlene presented Martha and her family with a gift certificate to start on some accessories for their new home.

Sandia's volunteers were coordinated by three "job captains," all retired from Sandia — Irv Hall, Larry Lane, and Duane Hughes. They helped teach Sandians the various skills needed, directed daily activities, and kept the work on track.

Lee Cunningham (12630), who worked four days on the project as a volunteer and day captain, presented Martha and her sons with the traditional hammer. The hammer is a symbol of the



HOUSE AND A HUG — Irv Hall, retired Sandia volunteer, presents Martha Rodriguez with a Bible and a hug at dedication ceremonies for her new Habitat for Humanity house. In foreground are Martha's sons, Johnathon and Reuben, who holds traditional Habitat hammer. The hammer is presented to the family as a symbol of the "sweat equity" put into building the house. (Photo by Bill Doty)

hard work, materials, and "sweat equity" put into the house, Lee told the group. "It was a great effort from a great team and it feels really good to see this place done." — Will Keener

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