

Sandia researchers develop ultra-high-temperature ceramics to withstand 2,000 degrees Celsius

UHTC materials support requirements for hypersonic vehicles

By Michael Padilla

Sandia researchers have developed new light-weight material to withstand ultra-high temperatures on hypersonic vehicles, such as the space shuttle.

The ultra-high-temperature ceramics (UHTCs) created in Sandia's Advanced Materials Laboratory can withstand up to 2,000 degrees C (about 3,800 degrees F).

Ron Loehman, a senior scientist in Sandia's Ceramic Materials Dept. 1843, says the results from the first seven months of the project have exceeded his expectations.

"We plan to have demonstrated successful performance at the lab scale in

another year with scaleup the next year," says Ron, adding that results suggest these materials meet the thermal insulation requirements of Sandia's Prompt Global Response project. The program also provides NASA Ames Research Center with analysis of UHTCs.

"We plan to have demonstrated successful performance at the lab scale in another year with scaleup the next year."

Composite materials

Ron says thermal insulation materials for sharp leading edges on hypersonic vehicles must be stable at very high temperatures (near 2,000° C). The materials must resist evaporation, erosion, and oxidation, and should exhibit low thermal diffusivity to limit heat transfer to support structures. Materials with those properties are required for development of hypersonics for prompt and precise delivery to difficult targets.

UHTCs are composed of zirconium diboride

(Continued on page 5)



HOT TOPIC, COOL MATERIAL — Ron Loehman, right, and Dale Zschiesche (both 1843) check out material created in the Sandia/University of New Mexico Advanced Materials Laboratory that can withstand twice the amount of heat compared to a conventional piece of a shuttle tile. (Photo by Randy Montoya)

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Managed by Lockheed Martin for the National Nuclear Security Administration

Contract renewal signed

Lockheed Martin signs contract extension with NNSA to manage Sandia for another five years. NNSA Administrator Linton Brooks and Lockheed Martin Executive VP Michael Camardo were among dignitaries here for tours and a signing ceremony at the International Programs Building on Tuesday afternoon. See photos on page 5.



Inside . . .

- NNSA appoints retired general to oversee Sandia security changes 2
- Container drop test kicks up dust in Coyote Canyon 3
- Farewell Galileo! Sandia's rad-hard electronics served you well 6
- Sandia volunteers are making latest Habitat House a home 12

'New Water' attracts crowd to Hobbs meeting as demand, available technologies converge

Sandia researchers filling key advisory role to statewide group trying to make use of long-ignored, salty (brackish) water supplies

By Will Keener

To Sandia's Allan Sattler (6113) and Mike Hightower (6251), a forum in Hobbs, N.M., was successful because of a convergence of events. A five-year drought and the development of more efficient technologies for removing salt from water have combined to create an opportunity for New Mexico to develop "new water." While most of the attendees were concerned about the potential benefits and uses of this "new water" in New Mexico and West Texas, water shortage problems are national in scope and potential benefits reach far beyond state boundaries.

This new water isn't really new, but it has

long been ignored in New Mexico and elsewhere, the two researchers note. Water generated in association with the production of oil and gas has been more a nuisance than a potential benefit in the past. Water found in many water wells, high in salt, or brackish, has very often been passed by, with little information as to its character and extent recorded by drillers concerned mainly with

developing freshwater supplies.

But times have changed. "We're at the point where it is becoming economically feasible to use these brackish resources," says Mike, of the Labs'

"We're at the point where it is becoming economically feasible to use these brackish resources. People need the water and it's becoming cost-effective to treat."

Energy Infrastructure and Distributed Energy Resources Dept. 6251. "People need the water and it's becoming cost-effective to treat."

Reading about communities and farmers in New Mexico with water problems has become too commonplace, says Allan, of Sandia's Underground Storage Dept. 6113. "New Mexico has severe water problems, statewide in scope." Among cities expressing concern about future water supplies are Alamogordo, Albuquerque, Jal, Eunice, Chama, Las Cruces, Santa Fe, and Gallup.

These and other municipalities, running short of local freshwater supplies, face the possibility of piping water from other locations at much higher costs to meet demands. As desalina-

(Continued on page 4)

Benefits Choices 2004

Open Enrollment is Oct. 20-Nov. 9

A complete listing of health care premium rate changes, prescription drug costs, meeting schedules, and more. Beginning on page 7.

What's what

If you've run across the bumper sticker or wall card "Dyslexics Untie!!!" and got a chuckle out of it, you'll appreciate the following, sent by John Covan (6252).

"Aoccdrnig to rscheearch at an Elingsh uinervtisy, it deosn't mtttaer in waht oredr the ltteers in a wrod are, the olny iprmoetnt tihng is taht frist and lsat ltteres are at the rghit pclae. The rset can be a toatl mses and you can sitll raed it wouthit a porbelm. Tihs is bcuseae we do not raed ervey lteter by it sllef but the wrod as a wlohe."

Tihs srot of tihng is petrty enertaitnig. Hwveoer, croecrt slpileng is esiaer.

* * *

There's just no telling what's going to get somebody's attention. We're all diverse, you know.

I don't know if he'd just had a thrilling day smashing giant space rocks into the Atlantic Ocean or creating India, or maybe an especially fun time hurling comets into Jupiter, but Mark Boslough (9216) was in a jolly mood the day last month a *Sandia Daily News* blurb announced that "a dark blue woman's knit jacket" had been found.

Quick as you could crash two asteroids together, he asked: "Shouldn't somebody give her CPR?"

* * *

Last time in this space, I noted that work with hopping robots, the Z machine, and nanomachines had landed Sandia in the pages of the *Guinness Book of World Records* – an unusual recognition venue for a place more used to being

acknowledged in scholarly or academic journals. Well, in case you missed it, Guinness announced a new record last week.

The venerable compilation of the fascinating to the bizarre reported that Mr. Jeffries – the basset hound grandson of Biggles, the face of Hush Puppies shoes – has the longest ears in dogdom. In November last year, they measured 11-1/2 inches. His owner, Phil Jeffries, of Southwick, England, said Mr. Jeffries' ears are insured for \$47,800, and that he spends much of his time standing on them, tripping over them, and dragging them through his food. (Wonder if that makes the insurance company nervous?)

Anyway, I mention Mr. Jeffries' new celebrity only because we're in the book too, and having a long-flappy-eared pooch for a companion seems somehow more acceptable for a preeminent national security lab than pogo stick stair jumpers and spitters of dead crickets.

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



NNSA appoints Thomas Neary to oversee security changes at Sandia

National Nuclear Security Administration (NNSA) Administrator Linton Brooks announced last week that he has appointed retired Air Force Maj. Gen. Thomas Neary to oversee security management improvements at Sandia. Neary will report to Brooks through NNSA's acting chief of defense nuclear security in Washington.

Brooks said he established the position — which will expire in six months — to jumpstart efforts by Sandia and NNSA's Sandia site office to implement new recommendations by DOE's Office of Independent Oversight and Assessments. A classified review by the oversight office found that, while security management at Sandia has improved in recent months (*Lab News*, Sept. 5), additional steps are required to ensure that security at Sandia meets departmental standards.

"The best way to achieve our objective in a timely fashion is to bring in a topflight manager whose sole responsibility is to make sure this important job is done well and completely," Brooks said. He noted that Sandia has made significant management changes to strengthen security in recent months (*Lab News*, Sept. 5, July 11, June 27), and that both the NNSA Sandia Site Office and Sandia have prepared action plans to implement security recommendations.

"Over time, the improved laboratory focus on security management will yield dividends," Brooks said. "In the near term, however, it is important to have someone on board whose principal responsibility is to make certain that security improvements at Sandia are achieved in the most effective, efficient, and rapid manner possible."

Energy Secretary Spencer Abraham endorsed the decision.

Neary has more than 30 years experience in nuclear operations, planning, and policy. His last Air Force assignment included command of the 20th Air Force element of the US Strategic Command, and he previously commanded two ICBM wings. He played a major role in the Scowcroft End-to-End Review of the US Nuclear Command and Control System, a comprehensive review of nuclear weapons security.

Recent Patents

Barrett Potter Jr. (1846), Kelly Simmons Potter (2612), David Wheeler (1764), and Gregory Jamison (1846): Formation of Bulk Refractive-Index Structures.

Albert Marshall (9745), Stanley Kravitz (1763), Chris Tigges (1742), and Gregory Vawter (1742): Micro Heat Barrier.

Armin Doerry (2344): Method for Removing RFI from SAR Images.

Kevin Linker, Charles Brusseau, David Hannum (all 4148), Nathan Varley, and James Puissant: Human-Portable Preconcentrator System.

Arthur Fischer (1123), Kent Choquette, and Weng Chow (1123): Bistable Laser Device with Multiple Coupled Active Vertical-Cavity Resonators.

James Gee, Shawn-Yu Lin (1743), James Fleming (1749), and James Moreno: Photonically Engineered Incandescent Emitters.

Robert Simonson (1764) and Bradley Hance (2521): Method for Remote Detection of Trace Contaminants.

Employee death

Roy Holt of Proliferation Services Dept. 5913 died Sept. 23 after a heart attack.

He was 48 years old.

Roy was a PMTS and had been at Sandia since 1989.

He is survived by his wife Melanie, son Matthew, and daughters Bethanie and Jessica.



ROY HOLT

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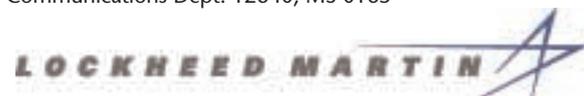
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Lockheed Martin Foundation Scholarship winners

A dozen sons and daughters of Sandians have started college this fall as Lockheed Martin Foundation National Merit Scholarship recipients.

Twelve children of Sandians received the scholarships, given by the Lockheed Martin Corporation Foundation, out of 56 such scholarships awarded this spring corporation-wide to members of the high school class of 2003.

The scholarship program awards \$3,000 per year for up to four years of undergraduate study to National Merit Finalists who are the children of Lockheed Martin employees. Selections are made for Lockheed Martin by the National Merit Scholarship Corporation. Here are the names of the 12 students and their Sandia parent:

David Bild. Parent: Richard Bild (12870)

Christopher Cutler. Parent: Robert Cutler (4132)

Bryan Davidson. Parent: George Davidson (6525)

Karen Grohman. Parent: Mark Grohman (5323)

Jennifer Lee. Parent: Moo Lee (6117)

Brian Leen. Parent: Brian D. Leen (10251)

Sarah Meisenheimer. Parent: Tim

Meisenheimer (1748)

Melinda Plimpton. Parent: Steve Plimpton (9212)

Pravin Rajan. Parent: Mahesh Rajan (9328)

Christopher Shirley. Parent: Charles Shirley (9620)

Elise Trott. Parent: Wayne Trott (9112)

Zachary Watkins. Parent: Randall Watkins (9747)

For more information about the scholarship program see: www.lockheedmartin.com/about/community_relations/scholarships.html.

Sandia aerial cable site bustling with test activity

TRUPACT-III is among several containers tested at canyon site



Sandia's Aerial Cable Site has been busy in recent weeks, conducting a number of tests, including this drop test of a TRUPACT-III container. Constructed by Packaging Technology, or PacTec, for Carlsbad-based Washington TRU-Solutions, the TRUPACT-III is based on a French design adapted by the company. The container tested is a one-half scale model of the actual container, which would be used for contact-handled transuranic wastes too large for the original TRUPACT-II containers.

"There are a lot of boxes in the system that won't fit in TRUPACT-II," says Robert Johnson, technical representative for TRU-Solutions. Successful licensing of a TRUPACT-III, for rail or truck shipment, would avoid the need to repackage the wastes in these boxes, he explains.

Sandia conducted four free drop tests on the model, chilled to -20 degrees Fahrenheit. The TRUPACT-III prototype has now been moved to

Carlsbad, for puncture testing. "The testing went well. We conducted all four tests within the specifications given to us by PacTec, and the package remained leak-tight as expected," says Sandia's Doug Ammerman of Transportation Risk and Packaging Dept. 6141, who managed the test series. PacTec will use data collected in the Sandia tests and puncture test data from Carlsbad to judge final adequacy and submit a license application to the Nuclear Regulatory Commission (NRC).

The series of photos above by *Lab News* photographer Randy Montoya captures the final 30-foot drop test of the highly instrumented container. Left, Sandia's Ken Sorenson (6141, at center) inspects the container's condition with representatives from PacTec, Washington TRU-Solutions, and an observer from the French nuclear power company COGEMA.

—Will Keener

Photos by Randy Montoya

Sandia California News

Next-generation computing cluster arrives

Sandia's computational scientists began development work last month on a cluster computer expected to rank in the top 50 to 60 computers in the US. This cluster is a prototype visualization cluster for the 10,000-processor Red Storm machine that is scheduled for delivery late next year.

The Linux cluster, called Catalyst, will run open source software including visualization software to help users grasp the solutions to numerically intense, high-performance computing problems.

The machine arrived days after Sandia demonstrated a similar cluster at the annual Intel Developer Forum in San Jose. The clusters use InfiniBand architecture to simplify and speed server-to-server connections and links to other server-related systems in such areas as remote storage and networking devices. "InfiniBand was chosen because it is a commodity, multi-vendor, open standard network interconnect that has

proven to have the characteristics of a high performance cluster interconnect," says Matt Leininger of High Performance Computing and Networking Dept. 8961. "Our research will focus on providing economic capacity computing cycles, visualization, and scalable open source software."

"Sandia has a long history in developing some of the most powerful clusters on the planet," says Jim Pappas, director of initiative marketing for Intel's Enterprise Platform Group. "We look forward to working closely with them in testing their InfiniBand cluster."

Intel is interested in this architecture due to its easier connectivity, reduced latency, improved bandwidth and enhanced interoperability that can increase performance, reliability and scalability of servers in e-Business data centers.

Catalyst is a 128-node machine operating 256 Intel Xeon processors at 3.06 Ghz built by Linux Networkx.

— Nancy Garcia

SLFCU opens second branch in Livermore

The Sandia Laboratory Federal Credit Union (SLFCU) opened its eighth branch — the second in Livermore, Calif. — Sept. 15 at 39 South Livermore Ave.

SLFCU has operated a branch adjacent to Sandia/California since 1971 and opened its Downtown Livermore branch to offer greater convenience, including Saturday hours, to its members located in Livermore and surrounding communities.

"The success of SLFCU relies heavily on our ongoing commitment to outstanding service," said SLFCU President/CEO Chris Jillson. "The opening of the Downtown Livermore branch is one very visible milestone of this strategic focus and will help ensure our success in meeting the evolving financial needs of our members."

In addition to a deposit-accepting CU Anytime® ATM, a night depository box, and a coin counter, the new Downtown Livermore branch "will have two computer cafés where members can access our web site, CU@home® online banking, and online research sites like Kelley Blue Book," says Branch Manager John Fink. At this new, full-service branch, members will be able to meet with a mortgage lending officer as well as representatives from SLFCU's financial center.

Desalination

(Continued from page 1)

tion technology becomes competitive economically, however, it could be possible to use brackish or produced water to fill in some of the demand.

In Lea County, for example, developed oil fields produce an estimated 42 million gallons a day of water that is too salty for consumption and has some slight hydrocarbon content. "If you could treat that water for agriculture or industry, even if you could only use part of it, you're still ahead," says Allan.

Knowing this, 150 interested participants showed up at a forum on produced and brackish water, held in Hobbs in late July. Sandia, along with a number of New Mexico organizations, sponsored the two-day event. "We were pleasantly surprised at the turnout," says Mike. "It was twice what we expected." The meeting featured 20 papers on various aspects of technology evaluations of the use of brackish or produced water in New Mexico and in West Texas.

Emphasis on coordination

"Everyone wanted to be there," says Mike. "We had participants from universities, oil and gas companies, municipalities, agriculture, mining, electric power, and other areas. They know the problems and they know the issues. There was a lot of emphasis and interest in coordinating the use of these nontraditional water resources." That led to the formation of a steering committee, with Mike and Allan along supporting the group.

Forum participants identified seven key issues and suggested organizing a steering group, with appropriate expertise, to address those problems. Three executive members, representing the petroleum industry, water resource researchers, and agriculture, were selected to help form the steering committee. The committee will include representatives from soil and water conservation districts, oil and gas organizations, the Municipal League and Association of Counties, business interests, research organizations, and regulatory agencies in the state.

Sandia's role will be to provide technology evaluation support and to help integrate activities. Sandia will provide a statewide framework to integrate further work and funding opportunities, while keeping the national perspective in mind. The big picture, centered about addressing water shortage issues, reaches well beyond New Mexico and West Texas, Allan and Mike point out.

An example of one of the issues the group will have to address is eliminating jurisdictional conflicts, an effort needed to accelerate use on nontraditional water resources, says Mike. Right now a variety of state and federal agencies are involved in oversight of produced and brackish water. "We need to get the regulators to recognize the value of this water. In the past, it's always been an environmental liability. Now it's a potential asset, and they haven't figured out how to best deal with that yet," says Allan.

Another primary focus of the group will be education of state and federal legislators as well as the public. "Science can do a lot in this area, but without an institutional base of support, it's not going to go anywhere," says Allan.

Experience-based support

Sandia is an ideal advisor for the group for a number of reasons, Mike says. The Labs are by no means new to the issues, the technologies, or the current efforts to move desalination forward. Sandia has experience in the field of brackish water engineering from its work in geothermal drilling, salt geochemistry, and geoscience capabilities. These capabilities were developed for projects at

"If you could treat that water for agriculture or industry, even if you could only use part of it, you're still ahead."



STUDENT MARLENE AXNESS holds a dialysis tube or "haggis" filled with hydrotalcite. After dialysis, filtration, and firing, the hydrotalcite is loaded into columns where it removes anions such as chloride, carbonate, and sulfate from brackish water.

(Photo by John Heald)

the Waste Isolation Pilot Project, near Carlsbad; the Strategic Petroleum Reserve, on the US Gulf Coast; and at a variety of environmental projects involving groundwater characterization and treatment. "We have a lot to add," says Allan.

In addition, Tom Hinkebein of Geochemistry Dept. 6118 helped coordinate the development and completion of a national desalination technology roadmap last year with the Bureau of Reclamation. The roadmap has been reviewed by the National Research Council and will form the basis for a national desalination research program for the next 20 years.

Also, Congress approved funding for the design and construction of a national desalination research facility near Alamogordo, in New

"Increasing demand for limited water resources is a major international issue . . . If we can solve issues [here] in utilizing nontraditional water resources, such as brackish and impaired waters, we may be able to help reduce future conflicts over water. It may be an important step in helping us foster peace in the world."

Mexico's Tularosa Basin. Groundbreaking for the facility, which is strongly supported by Sandia, is scheduled for December, says Mike. "Sandia has had a major role in cooperation with the Bureau of Reclamation to develop a vision and goals for this facility. Sandia is expected to have a continuing major role in the oversight of the operations and research at the facility," Mike says.

New Mexico is a good place to be for desalination research, Allan and Mike agree. "We have good technical resources in our universities and national labs as well as extensive brackish water resources and pressing water supply needs. Why shouldn't we be a leader in desalination?" Mike asks. From New Mexico's experience, the word can be expected to spread quickly. The potential use of desalination technologies in the US is widespread. All but about four or five of the states have brackish surface or groundwater resources that could be put to beneficial use.

Internationally, the potential is even higher. "Increasing demand for limited water resources is a major international issue in the Middle East, India, Pakistan, Southeast Asia, and China," says Mike. "All these areas are seeing conflicts over scarce freshwater resources. If we can solve issues in New Mexico and the Southwest in utilizing nontraditional water resources, such as brackish and impaired waters, we may be able to help these countries improve utilization of nontraditional or impaired water supplies and help reduce future conflicts over water. It may be an important step in helping us foster peace in the world."

The water and the technology

Brackish water, as defined by hydrologists and engineers, lies somewhere between fresh water and seawater in salt content. Fresh water typically contains less than 1,000 parts per million (ppm) of salts, or "total dissolved solids (TDS)." Fresh water that might be defined as acceptable to a city system is more typically in the range of 500 ppm or less.

Brackish water is greater than 1000 ppm in salts and up to 10,000 or 15,000 ppm. Seawater is still higher in TDS, in the 35,000 ppm range.

Produced water comes from the pores of sedimentary rock where it has been trapped in association with hydrocarbon deposits for eons. While the amount of produced water from an oil or gas field varies dramatically, on average producers get seven to 10 barrels of water for each barrel of oil produced. This produced water commonly varies from 10,000 to 50,000 ppm TDS or even higher.

At present, oil and gas industry disposal costs average \$6 per 1,000 gallons. If a company can treat the same water for \$3 per 1,000 gallons and reuse it, it marks a savings. "If the treatment impacts the bottom line positively, the oil and gas companies will do it," says Mike. Right now treating or eliminating the hydrocarbon content in produced water is a very critical issue and an important research area, he adds.

Impaired water is an umbrella category for any water that contains constituents that prevent its direct use for drinking water or other

applications. Though water containing high levels of contaminants is impaired, impaired water does not necessarily have to be contaminated. Thus, brackish or saline water is impaired by the presence of excess salts, and murky water is impaired by high turbidity and suspended solids. Though high levels of salts or suspended solids are not contaminants, both constituents may need to be removed to some level from a water resource before it can be used beneficially.

In recent years, several states — Arizona, California, Nevada, Texas, and Florida — have joined with New Mexico in forming the Multi-state Salinity Coalition. These states all have major inland brackish water resources and limited fresh water supplies.

In the Southwestern US, desalination systems are being considered and designed in the communities of Alamogordo, Las Vegas, El Paso, Tucson, and Phoenix.

A major milestone in desalination technology came recently, when the City of Tampa Bay, Fla., began treating 50 million gallons a day of seawater for city use. This is currently the largest desalination plant in the US and is expected to provide fresh water at a cost of \$2.00 to \$2.50 per 1,000 gallons. Five similar, large-scale plants are being contemplated along the coast of California from San Diego to Los Angeles. El Paso also has a 30-million-gallon per day desalination plant in design. It would be the largest inland desalination plant in the US.

Lockheed Martin enters new five-year pact with NNSA/DOE to manage Sandia Labs



TOURING THE LABS — Labs President C. Paul Robinson, Lockheed Martin Executive VP for Technology Services Michael Camardo (chief of the Lockheed Martin sector that includes Sandia Corp.), and Lockheed Martin Human Resources VP Steven Brinch (left to right in image at left) examine Sandia's Annular Core Research Reactor during a Tuesday morning tour of Labs facilities. In the photos above, an old tank shell at a training site in Coyote Canyon takes a hit from a handheld grenade launcher during a Sandia Pro Force demonstration. Training Capt. Mike Schaller (4211) explains the Pro Force exercise to Brinch, Paul, and Camardo. The Lockheed Martin officials were at Sandia to sign a contract renewal Tuesday afternoon (Sept. 30) with DOE/NNSA to manage Sandia for another five years. Lockheed Martin has had the management contract since 1993. Signing the contract for DOE/NNSA was NNSA Administrator Linton Brooks. Camardo signed for Lockheed Martin and Paul signed for Sandia. More about the new contract in the next issue of the *Lab News*. (Photos by Randy Montoya)

UHTC materials

(Continued from page 1)

(ZrB₂) and hafnium diboride (HfB₂), and composites of those ceramics with silicon carbide (SiC). These ceramics are extremely hard and have high melting temperatures (3,245°C for ZrB₂ and 3,380°C for HfB₂).

When combined, the material forms protective, oxidation-resistant coatings, and has low vapor pressures at potential use temperatures.

"However, in their present state of development UHTCs have exhibited poor strength and thermal shock behavior, a deficiency that has been attributed to inability to make them as fully dense ceramics with good microstructures," says Ron.

Ron says the initial evaluation of UHTC specimens provided by the NASA Thermal Protection Branch about a year ago suggests that the poor properties were due to agglomerates, inhomogeneities, and grain boundary impurities.

"All of which we believed could be traced to errors in ceramic processing," Ron says.

During the first seven months the researchers

"In their present state of development UHTCs have exhibited poor strength and thermal shock behavior."

have made UHTCs in both the ZrB₂ and HfB₂ systems that are 100 percent dense or nearly so, and that have favorable microstructures, as indicated by preliminary electron microscopic examination. In addition, the researchers have hot pressed UHTCs with a much wider range of SiC contents than anyone previously has been able to make. Availability of a range of compositions and microstructures will give system engineers added flexibility in optimizing their designs.

Collaborations

The project is part of the Sandia Thermal Protection Materials Program and represents work from various Sandia researchers. The primary research team includes Jill Glass, Brian Gauntt, and Dale Zschiesche (all 1843), Paul Kotula (1822), David Kuntz (9115), and University of New Mexico PhD student Hans-Peter Dumm.

David Kuntz, project investigator, says his primary responsibility is to compute aeroheating, design thermal protection systems (heat shields), compute material thermal response on high-speed flight vehicles, and develop tools to improve these capabilities.

"If a vehicle flies fast enough to get hot, we analyze it," David says. "Our tools consist of a set of computer codes that compute the flowfield around a high-speed flight vehicle, the resultant heating on the surface of the vehicle, and the subsequent temperatures and ablation of the materials which form the surface of the vehicle."

Jill works with high-temperature mechanical properties and fracture analysis.

Paul's role in the project involves microstruc-

tural and microchemical analysis of this important class of ceramic materials. Paul applies the Automated eXpert Spectral Image Analysis (AXSIA) software (developed by Paul and Michael Keenan (1812), recently patented and winner of a 2002 R&D 100 award) to the characterization of hafnium and zirconium diboride/silicon carbide UHTCs. Paul looks at these materials at the micron to subnanometer length scale for grain size and phase distribution as well as impurities or contaminants that can adversely affect their mechanical properties.

Creative analysis

Boron and carbon are difficult to analyze because they give off low-energy, or soft, X-rays when excited with an electron beam as in a scanning or transmission electron microscope typically used for such analyses. Instead of using X-ray analysis techniques the research team has developed other analytical capabilities based upon electron energy-loss spectrometry to determine amounts and nanometer-scale lateral distributions of the light elements in the UHTCs.

In particular, oxygen is an important impurity since in combination with the silicon present in the UHTCs and other impurities it can form glasses or other phases.

These other phases typically can't take the required high operation temperatures and would melt or crack in service causing the material to fail.

"If enough of the wrong contaminants find their way into the process, the material will have no high-temperature strength or stability," says Paul.

Galileo's 14-year odyssey of discovery ends

Sandia provided rad-hard electronics for historic mission to Jupiter and its moons

By Ken Frazier

The Galileo spacecraft's 14-year solar system odyssey — eight of those years in orbit around Jupiter — came to a fiery end, Sunday, Sept. 21, as the gallant craft was intentionally guided into the Jovian atmosphere, where it disintegrated. Galileo worked to the very end, its last signal reaching the Deep Space Network tracking station in Goldstone, Calif., at 12:43 p.m. PDT. Hundreds of former Galileo project members and their families gathered at the Jet Propulsion Laboratory in Pasadena to bid it goodbye.

Galileo, the first spacecraft to orbit one of the outer planets, will go down as one of the most successful planetary exploration missions in history.

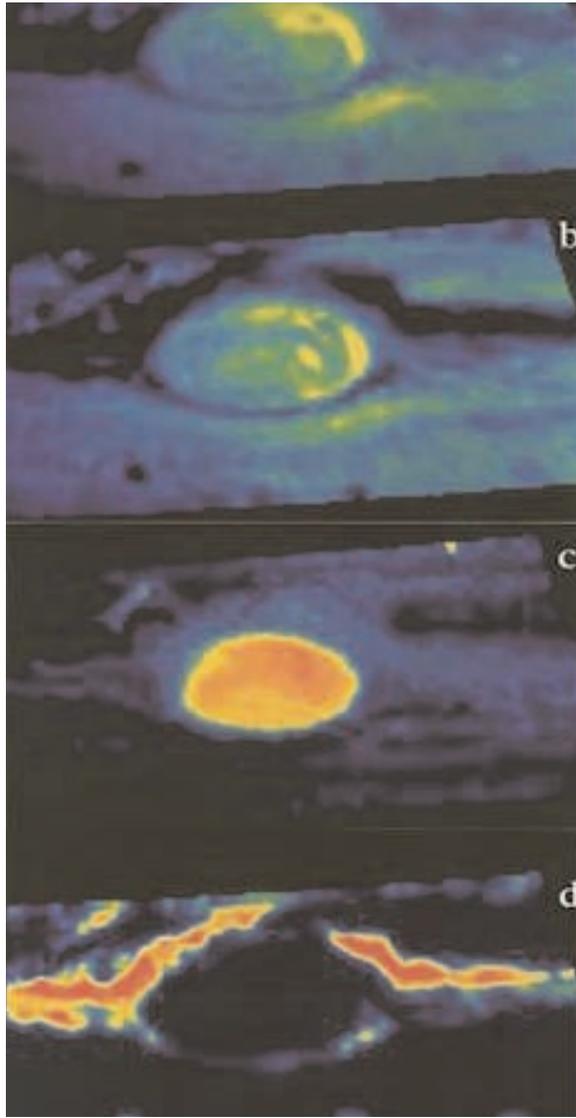
"We learned mind-boggling things," said Galileo project manager Claudia Alexander. "This mission was worth its weight in gold."

JPL announced last week that "the hardy spacecraft had endured more than four times the cumulative dose of harmful radiation it was designed to withstand," a final tribute to the radiation-hardened computer chips Sandia designed and built and JPL installed in Galileo. Sandia delivered the chips in 1985. Galileo was eventually launched Oct. 18, 1989. (See "Galileo's epic odyssey around Jupiter. . . and the Sandia connection," *Lab News*, Feb. 9, 2001; also at <http://www.sandia.gov/LabNews/LN02-09-01/galileo/galileo.pdf>.)

The prime mission ended six years ago, but Galileo worked so well that NASA extended the mission three times.

JPL also noted last week, "The mission was possible because it [Galileo] drew its power from two long-lasting radioisotope thermoelectric generators provided by the Department of Energy."

Galileo flew by Venus once and Earth twice on its convoluted, gravity-assisted path to Jupiter. From launch to impact, it traveled 2.878 billion miles (orbiting Jupiter 35 times in eight years) and returned 30 gigabytes of data and 14,000 pictures.



The Near-Infrared Mapping Spectrometer (NIMS) instrument looks at Jupiter's Great Red Spot, in these views from June 26, 1996. These maps are at four different infrared wavelengths.

Galileo's list of discoveries is astounding. Even on its way to Jupiter, in 1993, it discovered and photographed the first moon around an asteroid (Ida and its moon Dactyl). Once in the Jovian system it proceeded to investigate the geologic diversity of Jupiter's four largest moons. It documented the extraordinary volcanism on Io. It found evidence that Europa may have a salty ocean beneath its fractured, ice-encrusted surface. It showed that Ganymede and Callisto might have a liquid-saltwater layer. It found that Ganymede has a magnetic field, the only moon known to have one. It recorded gigantic thunderstorms and lightning strikes on Jupiter a thousand times more powerful than on Earth and took observations and measurements of Jupiter's atmosphere and magnetic fields that changed our understanding of the solar system's largest planet.

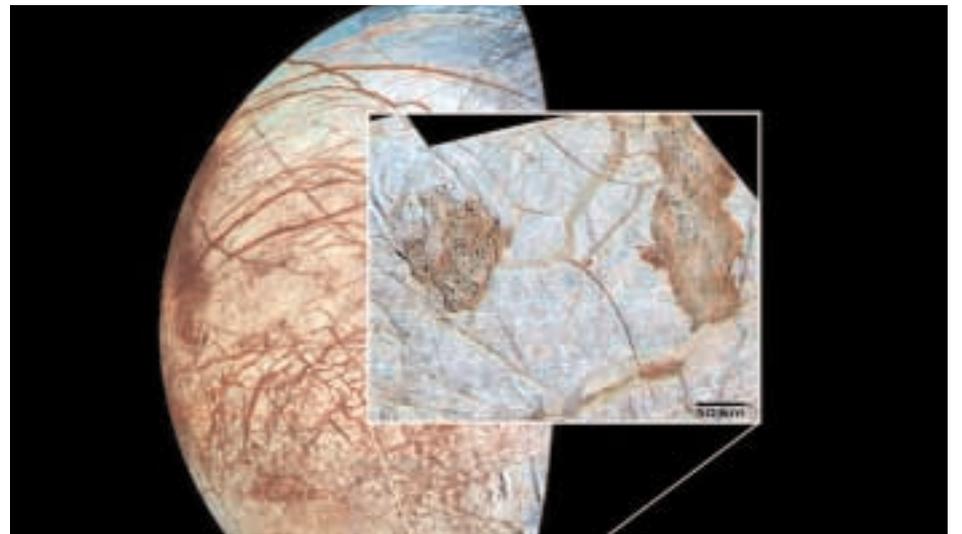
Ironically it was that discovery of a probable sub-ice ocean on Europa that led to NASA's difficult decision, as Galileo's steering propellant ran low, to cause it to plunge into Jupiter and be destroyed there rather than risk a later accidental crash into Europa where it might bring earthly contamination to a moon that now seems at least to have the possibility of harboring some form of life.

"It was truly exciting to be part of the Sandia team that enabled the Galileo mission to be such a major success," Paul Dressendorfer (1141) told the *Lab News* last week. Paul and Ron Jones (1741) directed the technology development effort for the rad-hard chips and were responsible for circuit fabrication and manufacture. "At the time Sandia was the only organization capable of designing, fabricating, and qualifying the critical parts needed for the spacecraft, and to see it greatly exceed expectations and generate such a wonderful set of data over the years has been very rewarding."

Images shown here are from "Galileo's Top 10 Science Images," <http://galileo.jpl.nasa.gov/images/topTen01.html>.

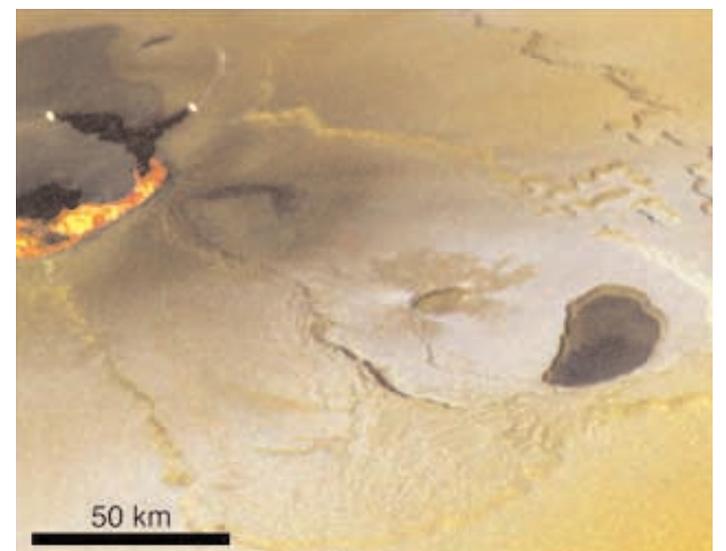


THIS GALILEO IMAGE (right) of Europa and an enlargement of the Thrace region show evidence of a young and thin, cracked and ruptured ice shell, probably moving slowly over the surface of a briny ocean that is 100 kilometers (62 miles) or more deep. Europa has become recognized as a potential habitat for extraterrestrial life and is now an important target for future solar system exploration. Left: Artist's rendering of Galileo in orbit around Jupiter.



THIS COLOR PICTURE is made from images taken by the imaging system on the Galileo spacecraft about 14 minutes before its closest approach to asteroid 243 Ida on Aug. 28, 1993. The range from

the spacecraft was about 10,500 kilometers (6,500 miles). The images used are from the sequence in which Ida's moon Dactyl was originally discovered; the moon is visible to the right of the asteroid.

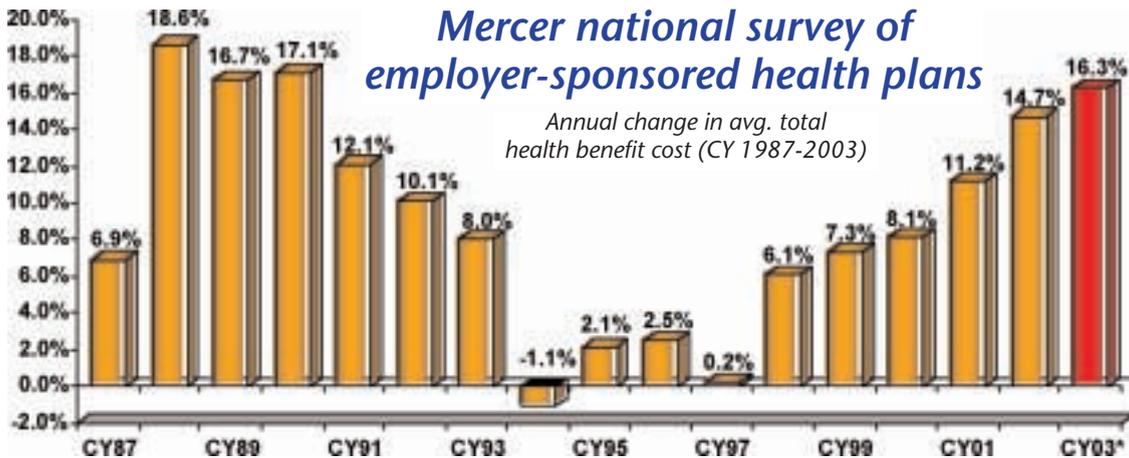


VOLCANIC FIRE CURTAINS IN ERUPTION ON IO — The detection of very high temperature volcanism — hotter than any terrestrial lavas currently erupting — is one of the most spectacular discoveries by the Galileo mission at Io. This image, taken Nov. 26, 1999, shows curtains of lava fountains erupting on the surface. The active region is approximately 25 kilometers long and 1 km high.

Benefits Choices 2004

Open Enrollment is Oct. 20-Nov. 9

No end seen to rise in health care costs (for Sandia and nationwide).....



* Projected

Note: Results for 1987-1998 are based on costs for active employees/retirees combined. Results for 1999-2003 are based on costs for active employees only.

The charts and stories on these three-plus pages about Sandia's Benefits Choices 2004 program were provided to the Lab News by Sandia's Benefits organization.

"Employers should expect double-digit increases in their health care costs for the foreseeable future. . . ." "More employers are dropping retiree medical coverage and/or asking their retirees to pick up more of the costs. . . ." "Employees should expect to pay more out-of-pocket both in terms of medical premiums they pay and the amount they pay when they receive medical services. . . ." Nowadays, these are common statements that one would overhear if listening to a conversation among benefit consultants.

Health care costs are continuing to spiral upwards. As you can see from the chart above, based on an employer survey conducted by Mercer Human Resource Consulting, health care costs have been in a significant upward trend for the past few years. The projected increase of 16.3% for 2003 is the largest increase since 1990.

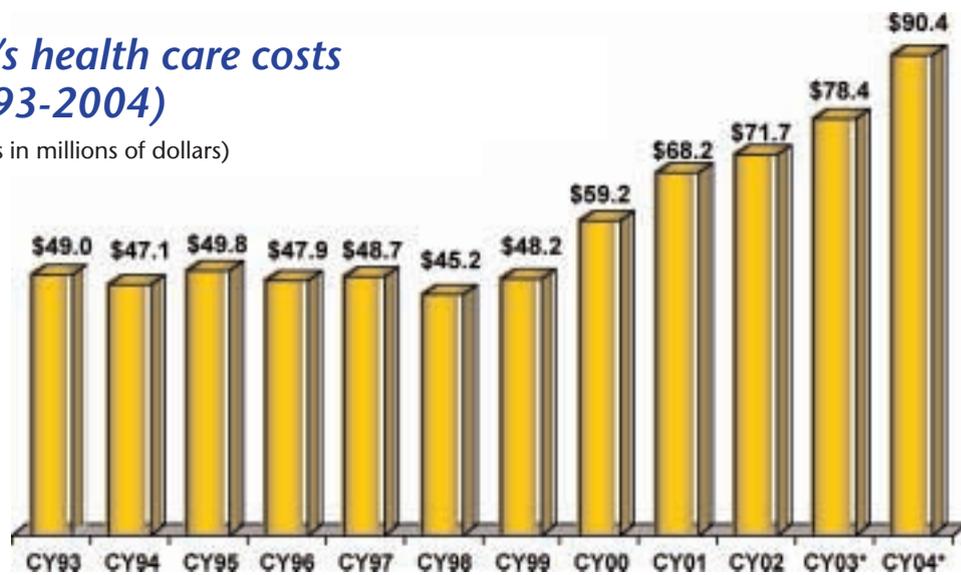
In the past few years Sandia has also seen a fairly dramatic rise in the amount the company is paying for health care costs for employees and retirees and their dependents (see chart below). Sandia did experience some temporary relief in 2002 when we implemented some new plans and made some design changes to existing plans. However, for both 2003 and 2004, we are again projecting significant increases.

What is causing this seemingly endless rise in health care costs? There are several reasons that one can point to that are causing health care costs to rise:

- First, we are using more health services today. America is aging while at the same time we are living unhealthy lifestyles. For example, the U.S. Department of Health and Human Services estimates that nearly 61% of adults in the United States are overweight or obese. Obesity is a risk factor for a number of illnesses including diabetes and heart disease.
- Second, medical technology is expensive. This technology has been of great value to our health care system but it comes at a price.
- Third, the use of prescription drugs is on a

Sandia's health care costs (CY 1993-2004)

(Units in millions of dollars)



* Projected

More info?

- Refer to your Benefits Choices 2004 Open Enrollment booklet for complete plan details. Printed copies of the booklets are being mailed for delivery to plan participants prior to Oct. 20. PDFs of the booklets are available on the Open Enrollment Web site. See below for address.
- Call the Benefits Customer Service Center at 505-845-2363 (toll free 800-417-2634, then dial 845-2363).
- Visit the Open Enrollment Web site (see below).
- Attend a Benefits Choices 2004 Open Enrollment meeting (see schedule on page 9).

Open Enrollment Web site:

Employees: <http://www-irn.sandia.gov/hr/benefits/openenrollment>

Retirees: <http://www.slfcu.org/thunderbird/oe2004>

rapid upward incline. Direct-to-consumer advertising has had a substantial impact on the number of prescriptions that are being dispensed.

• Finally, hospital and physician expenses are rising due to the consolidation of hospital systems, the nursing shortage, and the anti-managed care sentiment around the nation.

Unfortunately, there are a variety of factors that are impacting skyrocketing health care costs. Unlike when managed care was introduced, there appears to be no "silver bullet" on the horizon to assist employers with reigning in their health care spending.

The result: Health care premiums are increasing once again.

Non-represented employee premiums for the Sandia Intermediate Preferred Provider Organization (PPO) Plan, the Sandia Top PPO Plan, and

(Continued on next page)

Changes at a glance

Following is a summary of changes to our Benefits Plans. Changes are effective Jan. 1, 2004. For detailed information refer to the Benefits Choices 2004 Annual Open Enrollment booklet, a PDF of which is available at the Open Enrollment Web site (<http://www-irn.sandia.gov/hr/benefits/openenrollment>). Retirees can access Open Enrollment information online at <http://www.slfcu.org/thunderbird/oe2004>. Printed copies of the booklet are being mailed for delivery to plan participants prior to Oct. 20.

Employees:

- **Medical Plans** — Premiums have increased.
- **Top, Intermediate and Basic PPO Plan Prescription Drug Programs** — Copay maximums will increase for retail; mail-order copayments will increase.
- **CIGNA Network Point of Service Plan** EKGs and EEGs will require outpatient copays.
- **Kaiser Permanente HMO Plan** — Durable Medical Equipment will be covered at 100 percent.
- **Vacation Buy Plan** — When you take purchased vacation hours, you will be paid at the same rate as purchased, and you will be taxed on that amount.

Retirees:

- **Medical Plans** — Premiums have increased.
- **Top, Intermediate, and Basic PPO Plan Prescription Drug Programs** — Copay maximums will increase for retail; mail order copayments will increase.
- **CIGNA Network Point of Service Plan** — EKGs and EEGs will require outpatient copays.
- **Lovelace Senior Plan** — Complementary/alternative care services as follows:
 - \$15 for each office visit.
 - This benefit includes a combined annual maximum of \$1,500. The \$1,500 limit applies to the total cost of each visit, minus the copay.
 - Thereafter you will pay 100 percent.
- **MedicarePlus Plan** — As a result of the merger of Sandia Health System (formerly St. Joseph Healthcare System) and Lovelace Health Systems, MedicarePlus will be merged into the Lovelace Senior Plan. MedicarePlus members will be automatically changed to the Lovelace Senior Plan effective Jan. 1, 2004.
- **Kaiser Permanente HMO Plan** — Durable Medical Equipment will be covered at 100 percent.
- **Kaiser Permanente Senior Advantage Plan Medicare HMO**
 - Office visit, primary care physician, and specialists — \$15 copay
 - Hospital inpatient admission — \$100 copay
 - Prescription drugs (generic and brand name) — \$10 copay
 - Durable Medical Equipment — 100 percent coverage

On the following pages, you'll find . . .

- **Employee and retiree medical premium rate charts**
- **Open Enrollment informational meeting schedule**
- **Prescription drug plan changes**
- **Required actions for Open Enrollment participants**

Medical coverage premiums based on several factors

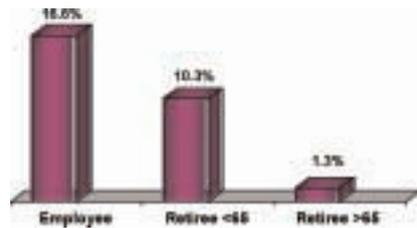
Open Enrollment info

(Continued from preceding page)

the Kaiser HMO will increase, on average, 7.6% for 2004 as opposed to 14% that you saw for 2003. The premiums for the CIGNA Network Point-of-Service Plan will not increase for those in salary tiers one (up to \$75,000) and two (\$75,001 to \$150,000), and will increase slightly for those in salary tier three (over \$150,000). The Sandia Basic PPO Plan will remain at no premium. Although health care premiums for certain plans are increasing for 2004, they are not increasing as much as they did for 2003. If our costs are increasing more in 2004 than in 2003, why is this? When we calculated the premiums for 2003, we anticipated a 14% increase. Our costs for 2003, however, do not look like they will have increased by 14%. Therefore, 2004 premiums are not as high as they might otherwise have been.

Premiums for retirees under 65 are increasing 10% on average compared to anywhere from 66% to 134% last year. Last year, you may remember that we developed premiums for non-Medicare retirees and survivors based on their own utilization, or "experience," which increased the premiums significantly at that time. Premiums for retirees over 65 are increasing anywhere from 15% for the Sandia Top PPO (as compared to 16% last year), to 25% for the Lovelace Senior Plan (as compared to 20% last year).

Although your premiums are increasing, Sandia will still be paying the bulk of your health care costs. The chart below represents the percentage of the total costs (excluding out-of-pocket costs such as deductibles, copays, etc.) paid by an employee, retiree under 65, and retiree over 65 enrolled in the Top Medical Plan from January through June of 2003. These percentages are expected to remain about the same for 2004. Note: The percentage retirees over 65 pay is very low because approximately 79% of these retirees were grandfathered in at no premium-sharing if they retired prior to 1/1/95.



Employee Premiums

The cost of your medical coverage is based on your salary tier, the plan you choose, and the level of coverage you choose (employee only, family of two, family of three or more).

Monthly premium-share amounts will be deducted from your biweekly paycheck in two equal installments each month. These premiums can be deducted on a pre-tax or after-tax basis (refer to your Benefits Choices 2004 Open Enrollment booklet for more information). Having your premium deducted on a pre-tax basis generates tax savings. This is because the premium is taken out of your paychecks before federal, state, and social security (FICA) taxes are deducted, therefore lowering your overall taxable income.

The following chart outlines the current and new premium-share amounts (effective Jan. 1, 2004) for non-represented employees:

Medical Plan	Tier 1		Tier 2		Tier 3	
	Up to \$75K		\$75K-\$150K		Over \$150K	
	2003	2004	2003	2004	2003	2004
BASIC PPO						
Employee only	\$0	\$0	\$0	\$0	\$0	\$0
Family of Two	\$0	\$0	\$0	\$0	\$0	\$0
Family of Three or More	\$0	\$0	\$0	\$0	\$0	\$0
INTERMEDIATE PPO						
Employee only	\$28	\$31	\$40	\$44	\$52	\$57
Family of Two	\$56	\$60	\$80	\$86	\$104	\$112
Family of Three or More	\$75	\$81	\$108	\$116	\$141	\$151
KAISER HMO						
Employee only	\$28	\$31	\$40	\$44	\$52	\$57
Family of Two	\$56	\$60	\$80	\$86	\$104	\$112
Family of Three or More	\$75	\$81	\$108	\$116	\$141	\$151
CIGNA POS						
Employee only	\$45	\$45	\$57	\$57	\$69	\$70
Family of Two	\$89	\$89	\$113	\$113	\$137	\$139
Family of Three or More	\$119	\$119	\$152	\$152	\$185	\$187
TOP PPO						
Employee only	\$47	\$51	\$59	\$64	\$71	\$77
Family of Two	\$93	\$100	\$117	\$126	\$141	\$152
Family of Three or More	\$125	\$135	\$158	\$170	\$191	\$205

The chart at right outlines the current and new premium-share amounts (effective Jan. 1, 2004) for employees represented by the Security Police Association.

Medical Plan	2003	2004
BASIC PPO		
Employee only	\$0	\$0
Family of Two	\$0	\$0
Family of Three or More	\$0	\$0
INTERMEDIATE PPO		
Employee only	\$28	\$31
Family of Two	\$56	\$60
Family of Three or More	\$75	\$81
CIGNA POS		
Employee only	\$45	\$45
Family of Two	\$89	\$89
Family of Three or More	\$119	\$119
TOP PPO		
Employee only	\$47	\$51
Family of Two	\$93	\$100
Family of Three or More	\$125	\$135

Medical Plan	2003	2004
BASIC PPO		
Employee only	\$0	\$0
Family of Two	\$0	\$0
Family of Three or More	\$0	\$0
INTERMEDIATE PPO		
Employee only	\$21	\$31
Family of Two	\$42	\$60
Family of Three or More	\$56	\$81
CIGNA POS		
Employee only	\$34	\$38
Family of Two	\$67	\$76
Family of Three or More	\$89	\$101
TOP PPO		
Employee only	\$35	\$43
Family of Two	\$70	\$85
Family of Three or More	\$94	\$115

The chart at left outlines the current and new premium-share amounts (effective Jan. 1, 2004) for employees represented by the Metal Trades Council or OPEIU.

Retiree Premiums

Retiree premiums vary based on when you retired as well as the plan and the level of coverage you choose. If you retired before 1/1/95, you do not pay a premium-share for your medical coverage.

If you retired after 12/31/94 but before 1/1/03, you pay 10 percent of the full premium. The following chart outlines the current and new premium-share amounts (effective Jan. 1, 2004) for those employees who retired after 12/31/94 and before 1/1/03:

Retiree	Spouse/Dependent	Monthly Premium Rates									
		Sandia Basic PPO Plan		Sandia Intermediate PPO Plan		Sandia Top PPO Plan		Lovelace Senior Plan/CIGNA Network POS Plan		Kaiser Permanente HMO	
		2003	2004	2003	2004	2003	2004	2003	2004	2003	2004
Medicare		\$14	\$17	\$16	\$19	\$20	\$23	\$12	\$15	\$22	\$24
Medicare	Medicare	\$29	\$33	\$33	\$38	\$39	\$46	\$24	\$29	\$44	\$48
Medicare	Non-Medicare	\$53	\$59	\$62	\$69	\$68	\$76	\$60	\$67	\$56	\$62
Non-Medicare		\$39	\$43	\$45	\$50	\$48	\$53	\$48	\$52	\$34	\$38
Non-Medicare	Medicare	\$53	\$59	\$62	\$69	\$68	\$76	\$60	\$67	\$56	\$62
Non-Medicare	Non-Medicare	\$78	\$86	\$91	\$100	\$96	\$106	\$96	\$104	\$67	\$75

The following charts outline the current and new monthly premium-share amounts (effective Jan. 1, 2004) for employees who retired after 12/31/02 and who have:

30 or more years of service:

Retiree	Spouse/Dependent	Monthly Premium Rates									
		Sandia Basic PPO Plan		Sandia Intermediate PPO Plan		Sandia Top PPO Plan		Lovelace Senior Plan/CIGNA Network POS Plan		Kaiser Permanente HMO	
		2003	2004	2003	2004	2003	2004	2003	2004	2003	2004
Medicare		\$14	\$17	\$16	\$19	\$20	\$23	\$12	\$15	\$22	\$24
Medicare	Medicare	\$29	\$33	\$33	\$38	\$39	\$46	\$24	\$29	\$44	\$48
Medicare	Non-Medicare	\$53	\$59	\$62	\$69	\$68	\$76	\$60	\$67	\$56	\$62
Non-Medicare		\$39	\$43	\$45	\$50	\$48	\$53	\$48	\$52	\$34	\$38
Non-Medicare	Medicare	\$53	\$59	\$62	\$69	\$68	\$76	\$60	\$67	\$56	\$62
Non-Medicare	Non-Medicare	\$78	\$86	\$91	\$100	\$96	\$106	\$96	\$104	\$67	\$75

25-29 years of service:

Retiree	Spouse/Dependent	Monthly Premium Rates									
		Sandia Basic PPO Plan		Sandia Intermediate PPO Plan		Sandia Top PPO Plan		Lovelace Senior Plan/CIGNA Network POS Plan		Kaiser Permanente HMO	
		2003	2004	2003	2004	2003	2004	2003	2004	2003	2004
Medicare		\$21	\$25	\$24	\$29	\$30	\$34	\$18	\$22	\$33	\$36
Medicare	Medicare	\$43	\$50	\$49	\$57	\$59	\$69	\$37	\$44	\$67	\$72
Medicare	Non-Medicare	\$80	\$89	\$92	\$103	\$102	\$114	\$90	\$100	\$84	\$93
Non-Medicare		\$58	\$64	\$68	\$75	\$72	\$80	\$72	\$78	\$51	\$57
Non-Medicare	Medicare	\$80	\$89	\$92	\$103	\$102	\$114	\$90	\$100	\$84	\$93
Non-Medicare	Non-Medicare	\$117	\$129	\$136	\$150	\$145	\$159	\$144	\$156	\$101	\$113

20-24 years of service:

Retiree	Spouse/Dependent	Monthly Premium Rates									
		Sandia Basic PPO Plan		Sandia Intermediate PPO Plan		Sandia Top PPO Plan		Lovelace Senior Plan/CIGNA Network POS Plan		Kaiser Permanente HMO	
		2003	2004	2003	2004	2003	2004	2003	2004	2003	2004
Medicare		\$36	\$42	\$41	\$48	\$49	\$57	\$31	\$37	\$56	\$60
Medicare	Medicare	\$72	\$83	\$82	\$95	\$99	\$115	\$61	\$74	\$111	\$121
Medicare	Non-Medicare	\$133	\$149	\$154	\$172	\$170	\$190	\$150	\$167	\$140	\$155
Non-Medicare		\$97	\$107	\$113	\$125	\$121	\$133	\$120	\$130	\$84	\$94
Non-Medicare	Medicare	\$133	\$149	\$154	\$172	\$170	\$190	\$150	\$167	\$140	\$155
Non-Medicare	Non-Medicare	\$194	\$214	\$226	\$250	\$241	\$266	\$239	\$261	\$169	\$189

(More retiree health care premium rate charts on page 10)

Next page . . .

- Open Enrollment informational meeting schedule
- Prescription drug plan changes
- Required actions for Open Enrollment participants

Benefits Choices 2004

Open Enrollment is Oct. 20-Nov. 9

Benefits meeting schedules: employees

Albuquerque (Mountain Time)		
Benefits Choices 2004 (Summary of health care, Dental Deluxe Plan, RSA, VGA, and Vacation Buy)		
October 20 (Monday)	Steve Schiff Auditorium	8:30 AM – 9:30 AM
October 28 (Tuesday)	Area IV Auditorium	9:00 AM – 10:00 AM
November 5 (Wednesday)	CNSAC Auditorium	2:30 PM – 3:30 PM
Reimbursement Spending Accounts		
October 20 (Monday)	Steve Schiff Auditorium	10:00 AM – 11:00 AM
November 5 (Wednesday)	CNSAC Auditorium	1:00 PM – 2:00 PM

Livermore (Pacific Time)		
Benefits Choices 2004 (Summary of health care, Dental Deluxe Plan, RSA, VGA, and Vacation Buy)		
October 29 (Wednesday)	Bldg. 904 Auditorium	1:30 PM – 3:00 PM
October 30 (Thursday)	Doubletree Club, 720 Las Flores Rd. <i>Spouses Welcome</i>	9:00 AM – 10:00 AM
November 5 (Wednesday)	Bldg. 940 Auditorium	9:00 AM – 10:00 AM
Reimbursement Spending Accounts		
October 29 (Wednesday)	Bldg. 904 Auditorium	3:00 PM – 4:00 PM
October 30 (Thursday)	Doubletree Club, 720 Las Flores Rd. <i>Spouses Welcome</i>	10:00 AM – 11:00 AM
November 5 (Wednesday)	Bldg. 940 Auditorium	10:00 AM – 11:00 AM

Carlsbad – Via Video Link (Mountain Time)		
Benefits Choices 2004 (Summary of health care, Dental Deluxe Plan, RSA, VGA, and Vacation Buy)		
October 20 (Monday)	NPHA 201-A	8:30 AM – 9:30 AM
Reimbursement Spending Accounts		
October 20 (Monday)	NPHA 201-A	10:00 AM – 11:00 AM

Amarillo – Via Video Link (Central Time)		
Benefits Choices 2004 (Summary of health care, Dental Deluxe Plan, RSA, VGA, and Vacation Buy)		
October 20 (Monday)	Trilab Video Conference Room at Pantex	9:30 AM – 10:30 AM
Reimbursement Spending Accounts		
October 20 (Monday)	Trilab Video Conference Room at Pantex	11:00 AM – 12:00 PM

Washington, DC – Via Video Link (Eastern Time)		
Benefits Choices 2004 (Summary of health care, Dental Deluxe Plan, RSA, VGA, and Vacation Buy)		
October 20 (Monday)	Sandia Washington Office	10:30 AM – 11:30 AM
Reimbursement Spending Accounts		
October 20 (Monday)	Sandia Washington Office	12:00 PM – 1:00 PM

Nevada (Pacific Time)		
Benefits Choices 2004 (Summary of health care, Dental Deluxe Plan, RSA, VGA, and Vacation Buy)		
October 23 (Thursday)	DOE Nevada Support Facility	3:00 PM – 4:30 PM

Actions Required for Open Enrollment Participants

Employees — If you wish to enroll in, add/drop dependents, or change any one of the following benefit plans, you will need to do so during the annual Open Enrollment period:

- **Medical Insurance:** You can enroll, change medical coverage, change deductions to pre- or after-tax, add or drop dependents, or waive coverage.
- **Dental Plans:** You can elect the Dental Expense Plan or the Dental Deluxe Plan. (No action required to remain in the plan you are currently enrolled in.)
- **Reimbursement Spending Accounts:** You can allocate a specific dollar amount to an account for unreimbursed health or day care (for eligible dependents) expenses on a pre-tax basis.
- **Voluntary Group Accident:** You may change your coverage amounts and plans.
- **Vacation Buy:** You can participate in a plan that allows purchase of vacation on a pre-tax basis.

Note: Non-represented employees can add/drop qualifying domestic partner dependents for medical, dental, and vision coverage during Open Enrollment.

Retirees & Eligible Year-Round Students — If you wish to enroll in or change one of the following benefit plans, you need to do so at Open Enrollment:

- **Medical Insurance:** You can enroll, change medical coverage, add or drop dependents, or waive coverage.
- **Dental Expense Plan (retirees only):** You can add or drop dependents.

Benefits meeting schedules: retirees

Albuquerque (Mountain Time)		
Benefits Choices 2004 – Medicare-Primary (Summary of health care plan information)		
October 22 (Wednesday)	Coronado Club	8:00 – 9:30 AM
October 27 (Monday)	Coronado Club	10:00 – 11:30 AM
November 6 (Thursday)	The College of Santa Fe at Albuquerque Mega Conference Room 4501 Indian School NE	1:00 – 2:30 PM
Benefits Choices 2004 – Non-Medicare (Summary of health care plan information)		
October 22 (Wednesday)	Coronado Club	10:00 – 11:30 AM
October 27 (Monday)	Coronado Club	8:00 – 9:30 AM
November 6 (Thursday)	The College of Santa Fe at Albuquerque Mega Conference Room 4501 Indian School NE	3:00 – 4:30 PM

Livermore (Pacific Time)		
Benefits Choices 2004 – Medicare-Primary (Summary of health care plan information)		
October 30 (Thursday)	Doubletree Club 720 Las Flores Road	1:00 – 2:30 PM
Benefits Choices 2004 – Non-Medicare (Summary of health care plan information)		
October 30 (Thursday)	Doubletree Club 720 Las Flores Road	2:30 – 3:30 PM

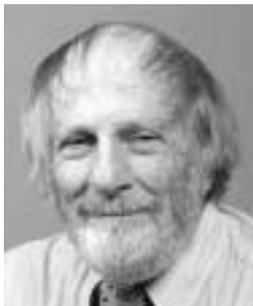
Nevada (Pacific Time)		
Benefits Choices 2004 (Summary of health care plan information)		
October 23 (Thursday)	DOE Nevada Support Facility	1:00 – 3:00 PM

Prescription drug benefit (TOP, Intermediate, and Basic PPO): retirees and employees (effective Jan. 1, 2004)

	Top & Intermediate		Basic	
	In-Network	Out-of-Network	In-Network	Out-of-Network
Retail – Up to a 30-day supply				
• Generic	20% of retail discount price with a \$6 minimum and \$9 maximum	50% of retail network price less applicable minimum copay	20% of retail discount price with a \$6 minimum and \$13 maximum	50% of retail network price less applicable minimum copay
• Brand Name	Preferred - 30% of retail discount price with a \$17 minimum and \$32 maximum Non-Preferred - 40% of retail discount price with a \$30 minimum and \$50 maximum	50% of retail network price less applicable minimum copay 50% of retail network price less applicable minimum copay	Preferred - 30% of retail discount price with a \$17 minimum and \$35 maximum Non-Preferred - 40% of retail discount price with a \$30 minimum and \$70 maximum	50% of retail network price less applicable minimum copay 50% of retail network price less applicable minimum copay
Mail Order – Up to a 90-day supply				
• Generic	\$13 copay	N/A	\$15 copay	N/A
• Brand Name	Preferred - \$43 copay Non-Preferred - \$75 copay	N/A N/A	Preferred - \$43 copay Non-Preferred - \$75 copay	N/A N/A

Mileposts

New Mexico photos by Michell Fleming
California photos by Bud Pelletier



Allan Sattler
40 6113



Maher Tadros
30 16000



Tom Cutchen
37 2500



Jim Wolcott
30 12332



Dennis Eilers
25 2337



Stephen Bauer
20 6211



Roger Hill
20 6214



Larry Weirick
33 2500



Paul Merillat
25 9500



Charles Little
20 15212



Frank Lujan
20 10252



Cynthia Nelson
20 4138



Allen Robinson
20 9231



Tom Salazar
20 12660



John Hart
15 14401



Jim Smith
15 10824



Courtenay Vaughan
15 9224

Recent Retirees

Reader Service information

The *Sandia Lab News* is distributed in-house to all Sandia employees and on-site contractors and mailed to all Sandia retirees. It is also mailed to individuals in industry, government, academia, nonprofit organizations, media, and private life who request it.

Retirees (only): To notify of changes in address, contact Carol Wade, Benefits Dept. 3341, at 505-845-9705, e-mail cawade@sandia.gov, or Mail Stop 1021, Sandia National Laboratories, Albuquerque, NM 87185-1021.

Others: To receive the *Lab News* or to change the address (except retirees), contact Michelle Fleming, Media Relations and Communications Dept. 12640, at telephone 505-844-4902, e-mail meflemi@sandia.gov, or Mail Stop 0165, Sandia National Laboratories, Albuquerque, NM 87185-0165.

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Retiree health care premiums

(Continued from page 8)

The following charts outline the current and new monthly premium-share amounts (effective Jan. 1, 2004) for employees who retired after 12/31/02 and who have:

15-19 years of service:

		Monthly Premium Rates									
Retiree	Spouse/Dependent	Sandia Basic PPO Plan		Sandia Intermediate PPO Plan		Sandia Top PPO Plan		Lovelace Senior Plan/CIGNA Network POS Plan		Kaiser Permanente HMO	
		2003	2004	2003	2004	2003	2004	2003	2004	2003	2004
Medicare		\$50	\$58	\$57	\$67	\$69	\$80	\$43	\$51	\$78	\$84
Medicare	Medicare	\$100	\$116	\$114	\$133	\$138	\$160	\$86	\$103	\$156	\$169
Medicare	Non-Medicare	\$186	\$208	\$215	\$241	\$238	\$266	\$210	\$234	\$196	\$217
Non-Medicare		\$136	\$150	\$158	\$175	\$169	\$186	\$168	\$182	\$118	\$132
Non-Medicare	Medicare	\$186	\$208	\$215	\$241	\$238	\$266	\$210	\$234	\$196	\$217
Non-Medicare	Non-Medicare	\$272	\$300	\$317	\$349	\$337	\$372	\$335	\$365	\$236	\$264

10-14 years of service:

		Monthly Premium Rates									
Retiree	Spouse/Dependent	Sandia Basic PPO Plan		Sandia Intermediate PPO Plan		Sandia Top PPO Plan		Lovelace Senior Plan/CIGNA Network POS Plan		Kaiser Permanente HMO	
		2003	2004	2003	2004	2003	2004	2003	2004	2003	2004
Medicare		\$64	\$75	\$73	\$86	\$89	\$103	\$55	\$66	\$100	\$109
Medicare	Medicare	\$129	\$149	\$147	\$171	\$177	\$206	\$110	\$132	\$200	\$217
Medicare	Non-Medicare	\$239	\$267	\$277	\$310	\$306	\$342	\$271	\$301	\$252	\$278
Non-Medicare		\$175	\$193	\$203	\$225	\$217	\$239	\$216	\$234	\$152	\$170
Non-Medicare	Medicare	\$239	\$267	\$277	\$310	\$306	\$342	\$271	\$301	\$252	\$278
Non-Medicare	Non-Medicare	\$350	\$386	\$407	\$449	\$434	\$478	\$431	\$469	\$303	\$339

New safehouse for abused kids opens in Torrance County

The first grant of the United Way of Central New Mexico's new Family Violence Initiative has been awarded to All Faith's Receiving Home to establish the Torrance County Safehouse. This program provides a neutral place for investigative interviews of Torrance County children who are suspected to have been abused. It will enhance investigations by providing legally defensible forensic services and coordination of multidisciplinary activities with law enforcement, prosecution, and child-protection professionals.

United Way of Central New Mexico's Family Violence Initiative is about change — changing culture to make family violence unacceptable and not tolerated by the community at large. United Way's initiative seeks to support and complement — not duplicate — the work of the many organizations already providing services to victims of family violence. United Way includes women, men, children, and elders in its definition of potential family violence victims.

United Way's Family Violence Initiative seeks to build collaborations between medical, legal, business, education, and faith communities, in addition to human service providers, to eliminate tolerance for family violence. For more information on the initiative, go to: www.uwcnm.org/familyviolence/familyviolenceinitiative.htm.



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

MISCELLANEOUS

REFRIGERATOR, Whirlpool, almond, 3 yrs. old, 25.5 cu. ft., water/crushed/cubed ice dispenser, w/light, \$750. Ramos, 681-7756.

RIVER ROCK, gray, 1-in.-1-1/2 in., ~ 4 yds., free, you haul. Vining, 323-5146.

GAS RANGE, Tappan, almond & black, 4-burner, upper & lower ovens, works well, \$100. Dencklau, 797-3395.

PLAYER PIANO, early 1900s, refinished, tuned, key tops replaced, w/piano rolls, \$3,000 OBO. Oglesby, 296-5361.

SLEEPER SOFA, twin-size, great for kids room, excellent condition, \$50. Knight, 565-8105.

YAMAHA PIANO, spinet, w/bench, walnut, nice, \$850. Beer, 350-3455.

ENTERTAINMENT CENTER, pine, fits 36-in. TV, 48"W x 22"D x 56"H, \$100 OBO. Mickelsen, 821-5036.

TIMESHARE, Palm Desert, 2-bdr., Oct. 11-18, \$500. Walters, 857-9767.

VACATION, luxury Mexican resort, 6-mo. advanced reservation required, see website for choices. Wilsey, 237-8614, www.mayanpalace.com.

REFRIGERATOR, Gerald, 5 cu. ft., excellent condition, \$75. Vigil, 271-1328.

MINK COAT, dark, ranch, size 8, paid \$4,000, asking \$500; wedding gown, size 8/10, \$75. Simon, 299-8468.

UPRIGHT FREEZER, '95 Amana, 20 cu. ft., 33"W x 28"D, model ESU20HW, \$175. Holmes, 292-0898.

PUPPIES, American pit bull, 2 male brindle, 8-wks. on Sept 18, need good home, \$100 ea. OBO. Heller, 604-3750.

LATERAL FILE CABINET, 5 shelves, excellent condition, \$850 new, asking \$250. John, 345-4006.

BALLOON FIESTA ARTS & CRAFTS SHOW, Cottonwood Mall, Oct. 3-11, mall hours, Thanksgiving, Nov. 27-30, Wyoming Mall. Self, 296-4137.

BOXER PUPPY, male, 9 mos. old, great family pet, up-to-date w/shots, \$125. Leyba, 877-3640.

PROPANE CANISTERS, 16.4 oz., \$1 ea.; 2-mantle lantern, \$10; 2-burner camp stove, never used, \$15. Barbier, 856-9391.

AKITA, 2-yr.-old male, purebred w/papers, good temperament, raised w/kids, must sell, paid \$300, asking \$200. Kaufmann, 861-1080 or 261-8622.

PERSIAN RUGS, 2, hand-knit, 5' x 9', Naeen design, wool/cotton foundation, w/silk highlights, appraised \$2,200, asking \$1,899 ea. Mohagheghi, 271-0724.

LEXAR MEMORY STICK, 128MB, new, for Sony 128MB, model KS128, \$35. Prosperio, 797-2194.

TRAVEL DOG CRATE, large, used maybe twice, \$50; double bedframe & mattress, hardly used, \$50. Southward, 281-0882.

SWING SET, large, metal, slide, glider, 2 swings, bench swing, good shape, you haul, free. Maurer, 296-4869.

CAR SEAT, Graco, infant carrier w/base, black & white pattern, like new, \$40. Chavez, 244-1546.

DINING TABLE, oval, glass, w/4 chairs, \$75; sofa, off-white floral pattern, \$50; oak computer desk, \$75. Nunez, 823-9203.

TRUCK TOOLBOX, Knaack, aluminum, 60"W x 20"D x 13"H, \$300; Dell Latitude Xpi laptop, \$50; Apple Powerbook 165, free. Vogler, 254-4972.

ROCKING BASSINET, Graco, w/wheels, partial canopy, \$35; "My Breast Friend" nursing pillow, best offer. Rezac, 281-1816.

WASHER & DRYER, Maytag, electric, large-capacity, white, 5 yrs. old, great condition, \$400/pr. Ingram, 296-8565.

TIRES, 4, Michelin XCLT 245/R75-16 on '96 Suburban, 16-in. factory alloys, \$350; running boards, '00 F250, 4x4, Super-cab, black, \$100. Castillo, 269-0645.

REFRIGERATOR, Whirlpool, white, 20.9 cu. ft., top-mount, ice maker, 4 yrs. old, great condition, \$250 OBO. Bachand, 796-0624.

TIMESHARE, Jackson Hole Racquet Club, Nov. 22-29, 1-bdr., full kitchen, FP, washer/dryer, TV, VCR, \$500. Meinelt, 899-5038.

BOXER PUPPY, 2-1/2 mos. old, brown w/black face, pictures available via email, \$50. Black, 550-5965, SBlack42@aol.com.

COMPUTER, Kaypro II, 64K, portable w/metal case, w/software, books, etc., works great, free. Shepherd, 828-9743.

BICYCLE CARRIER, trailer hitch or receiver mounts, w/2-in. receiver extension, holds 2 bikes, \$65. Nienow, 332-8338.

FREEZER, Kenmore, 15.9 cu. ft., white, works great, \$60. Vittioe, 299-9298.

SWING SET, showing age but all parts still work, anchors included, \$25 OBO. Haschke, 299-0348.

WASHER, '87 Whirlpool, \$50; set of ladies' golf clubs, \$35; bathroom sink, \$15. Hayes, 299-5832.

SIGNED PRINT, Pablita Velardi "Creation," beautifully custom framed, \$200. Blaine, 299-1036.

UPRIGHT FREEZER, Amana, 11 cu. ft., \$100; Medela breast pump, \$150; Kona Mountain Bike, small, \$100. Hesch, 343-0328.

DIGITAL CAMERA, Sony DSC-S75, 3.3 megapixels, 2 8MB memory sticks, all SW manuals, cables, case, excellent condition, \$350. Walker, 363-1477.

CLASSIC TROPHY SADDLE, '95 Circle Y, 15-1/2 seat, very good condition, \$725. Eisenberger, 877-7041.

RUMMAGE SALE, Los Altos Christian Church, 10/3, 9 a.m.-3 p.m., 10/4 8 a.m.-3 p.m., 11900 Haines NE, Juan Tabo/Indian School area. King, 294-3125.

BREAKFAST NOOK TABLE, 33-1/2 x 44, L-shape bench, 5 x 5-1/2", maple finish, pine post wood, Santa Fe-Style, earth tone color cushions, \$250 OBO. Vigil, 271-7610.

TELESCOPE, 6-in. Newtonian f/5, robust construction, excellent optics, equatorially mounted, RA driven, new \$650, asking \$375. Campbell, 281-0744.

STROLLER/CAR SEAT/BASE, \$80; 5-pc. crib set, \$60; highchair, \$10; backpack carrier, \$25; attachable booster chair, \$30. Johnston, 292-7277.

SCANNER, HP 5P ScanJet, w/SCSI card, \$40; internal Zip drives, \$25; 64MB AGP card, \$35; more. Cocain, 281-2282.

LAMINATED BEAMS, 3, 20'10" x 6" x 9"; barn doors, 2, 7-1/2' x 11', made out of 2-in. square tubing. Anaya, 255-8215.

BIKE RACK, RV ladder mount, 2-bike capacity, like new, \$45. Jones, 797-4894.

FURNITURE: large U-shaped desk, \$250; credenza-style china cabinet, \$100; Southwest-style couch, \$175. Miller, 332-4845.

POOL TABLE, Spalding, 7'8"L x 4'4"W, blue felt, wood, accessories, ping-pong table overlay, excellent condition, \$580. Jensen, 892-8761.

COMPUTER DESK, hutch, printer table, \$175; full-size futon, extra thick mattress, \$150; kitchen table, corner bench, \$150 OBO. Herrera, 884-4925.

PIANO, upright, Fischer, light oak, very good condition, \$600; air compressor, 5-hp, 60-gal., \$300; wood lathe & tools, \$150. Crafts, 343-0773.

DINING ROOM SET, solid pine, 89" x 35" x 2", 6 chairs, 2-pc. hutch, \$750 OBO. Vigil, 873-0336.

ENTERTAINMENT CENTER, dark oak, \$225; microwave cart, \$75; kitchen table/chairs, \$125; couch, \$30. Moleris, 286-2441.

QUARTER HORSE, yearling filly, registered, dark bay, halter-broken, tall & gentle. McConkey, 823-6575 or 832-4590.

MAC, Motorola Power PC, 4GB HD, Sony 17-in. monitor, HP Laserjet printer, peripherals, \$300. Oberkampf, 292-4366.

ALAN JACKSON TICKETS, 2, 2nd row, section 4, Friday, Oct. 10, Journal Pavilion, \$107 both. Nelson, 828-2755.

WELDING MACHINE, Miller Trailblazer on trailer, w/MIG suitcase, \$2,850. Forster, 294-3564.

PEDESTAL TABLE, 48-in. round, oak, 2/24-in. extension, 2 arm chairs, 2 side chairs, \$250. Barnard, 856-1952.

FIREWOOD, cut & split, free if you load & haul away. Meinld, 798-9399.

WASHING MACHINE, antique Maytag, \$125; black leather chair/ottoman, \$30; medium-size dog house, \$25; 25'L x 4'H, chain link fencing, \$25. Serna, 899-9618.

REFRIGERATOR, Whirlpool, w/icemaker, \$65; Hoover vacuum cleaner, \$25; 8-ft. fluorescent light, \$25; 8-in. table saw, \$40. Garcia, 888-3686.

SHIRTS, Polo & Hilfiger, sizes 4XL & 5XL, great condition, reg. \$65-\$85, asking \$15-\$25 ea. Mendez, 299-2980.

DESK, Steelcase, nice, \$35; microwave, good, \$65; oak/brass kitchen table & chairs, \$75. Schwertkoske, 821-0835.

QUEEN-SIZE BED, mattress & box spring, rails, \$100; round kitchen table, Formica top, metal legs, \$35. Filusch, 899-0179.

DRAFTING TABLE, \$40; Formica dining table, 6 chairs, \$75; porta crib, \$30; automatic dog feeder, \$10. Palmer, 256-3164.

TRANSPORTATION

'91 CADILLAC SEDAN DEVILLE, loaded, 1 owner, 90K miles, excellent condition. Carrington, 883-4402.

'97 CHEVY ASTROVAN, rear AC, cruise, CD, PW, 130K highway miles, way below book, \$4,600. Yawakie, 294-6855.

'70 CHEVY PICKUP, short bed, stepside, parting out, \$400. Gutierrez, 877-2580.

'95 FORD WINDSTAR GL, loaded, rear AC, new tires, clean, runs well, reliable, \$4,000 OBO. Barba, 293-4722.

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

- Limit 18 words, including last name and home phone (If you include a web or e-mail address, it will count as two or three words, depending on length of the address.)
- Include organization and full name with the ad submission.
- Submit ad in writing. No phone-ins.
- Type or print ad legibly; use accepted abbreviations.
- One ad per issue.
- We will not run the same ad more than twice.
- No "for rent" ads except for employees on temporary assignment.
- No commercial ads.
- For active and retired Sandians and DOE employees.
- Housing listed for sale is available without regard to race, creed, color, or national origin.
- Work Wanted ads limited to student-aged children of employees.
- We reserve the right not to publish an ad.

'93 FORD FESTIVA, wrecked, motor, transmission good, new tires, whole car or part out, \$450 OBO. Torrez, 615-9328.

'97 DODGE RAM 50, 100 miles on rebuilt engine, \$2,250 OBO; '83 Dodge Colt, runs, has been sitting, \$500 OBO; '55 Chevrolet truck, no bed, make offer. Clark, 864-1339

'00 TOYOTA AVALON XLS, 3.0L V6, AT, AC, CD, dual airbags, 24K miles, \$19,500 OBO. Garcia, 821-4110.

'94 MAZDA MIATA, red w/black top, 90K miles, excellent condition, \$6,000 OBO. Argo, 934-8177.

'87 VW VANAGON SYNCRO, AWD, good condition, \$4,000 OBO. Peterson, 286-3263.

'01 MITSUBISHI ECLIPSE GT, 3.0L, V6, 5-spd., black, leather, custom wheels, warranty, 32K miles, \$14,850. Abeyta, 463-5529.

'98 JEEP WRANGLER SPORT, new AC, many extras, white w/full white soft top, 38K miles, excellent, \$13,000. Brown, 293-5768.

'99 TOYOTA LANDCRUISER, 4.7L, V8, loaded, white, leather, like new, 57,600 miles, great condition, \$27,800 firm. Dwyer, 271-1328.

'72 MGB, restoration project, \$500. Smith, 203-0278.

'74 LINCOLN MARK IV, 2nd owner, all original, yellow/white top, velour interior, 66K miles, beautiful, \$7,500. Milloy, 268-3467.

'97 FORD F250 XLT, 4x4, 5.4L, V8, AT, AC, fiberglass camper shell, 67.5K miles, excellent condition, \$13,995. Bozone, 242-8295.

'94 JEEP WRANGLER, 5-spd., 4WD, AM/FM/CD, 3-in. body lift, side steps, more, 137K miles, \$5,500 OBO. Haill, 832-4975.

'97 TOYOTA CAMRY, 4-dr., 4-cyl., AT, AC, white, well maintained, 65K miles, estate sale, \$7,500 OBO. Reynolds, 299-7204.

'89 BMW 525, 4-dr., 6-cyl., AC, sunroof, cruise, extras, black w/gray leather, clean, \$4,800. Lujan, 831-0086.

'95 SUBARU LEGACY WAGON, AWD, AT, AC, cruise, new AM/FM/CD/cassette, great in snow, 102K miles, \$4,500 OBO. Ganter, 265-5007.

'90 TOYOTA CAMRY, red, very good condition, \$3,200. Segalman, 480-4384.

'96 CHEVY 1500 PICKUP, 2WD, ext. cab, camper cover, trailer pkg., 1 owner, 78K miles, excellent condition, \$8,500. Jones, 292-1581.

'99 GMC SUBURBAN LT, 4WD, loaded, leather, heated seats, rear AC, power, tow pkg., 67K miles, great condition, \$18,700 OBO. Smith, 228-6129.

'94 FORD F150, 4x4, super cab, V8, 5.8L, AC, PS, PB, AT, cruise, bed liner, tie down hooks, \$9,000 OBO. Smith, 897-7813 or 453-6197, ask for Linda or Troy.

'91 DODGE PICKUP, 3/4-ton, 4x4, Cummins motor, power everything, AC, AT, 20-mpg, good work truck, 235K miles, \$4,500 OBO. Vandi, 866-7289 or 293-1249.

'01 CHEVY S10, AM/FM/cassette, ~52,901 miles, bids accepted through 10/03/03, right to refuse bids, sold as is. SLFCU, 237-7254.

'94 PLYMOUTH GRAND VOYAGER, loaded, almost new tires, 1 owner, all records, 57K miles, \$6,000. Furnish, 884-6626.

'67 CHEVY CAMARO RS55, restored, midnight blue, modified 327, 4-spd., lots more, appraised \$26,600, asking \$18,000 OBO. Gibson, 480-7092.

'95 JEEP WRANGLER, Rio Grande Edition, hard top, 79K miles, good condition, \$6,800 OBO. Linebarger, 890-8805.

'96 DODGE DAKOTA PICKUP, 4x4, ext. cab, AC, fiberglass topper, 60K miles, mechanically excellent, \$8,400. Heffelfinger, 379-9487.

'97 FORD F150 XLT, 4x4, V8, 5-spd., 18-in. wheels, Kenwood CD, 50K miles, excellent condition, \$12,400 OBO. Mantelli, 321-7691.

'81 HI SIERRA GMC 1500, w/tool box, good work truck, \$1,300. McIntyre-Pacheco, 315-0260, ask for Ben.

'01 CHEVY MALIBU, 4-dr., V6, AC, PW, AM/FM, ABS, cruise, 16K miles, mint, \$9,800. Bowland, 256-1861.

RECREATIONAL

POP-UP TENT TRAILER, Coleman Model 590, sleeps 6 adults, \$1,200 OBO. Claghorn, 884-4483.

'96 WINNEBAGO ADVENTURER, 32-ft., sleeps 6, 2 ACs, Ford 460, extended warranty, very clean, \$34,950. Cincotta, 292-4168.

'83 JAMBORREE, 19-ft., Class C Chevrolet, 350 V8, sleeps 4, roof AC, tow pkg., 70K miles, \$5,200. Brown, 256-9617 or 410-8344.

'66 ESQUIRE BOAT, 120-hp I/O, 1 owner, w/trailer & cover, good condition, \$1,800 OBO. Baker, 899-5841.

'93 HONDA CBR900RR, Yoshimura, Fox, Erion, Racetech, K&N, Attack, AM/FM & much more, cosmetic damage, \$4,300. Franklin, 275-0134.

'02 HARLEY-DAVISON SOFTAIL, fuel-injected, LePera seat, T-bars, extras, black, 2K miles, like new, \$16,000 OBO. Kinker, 890-3687.

'02 PALIMINO POP UP CAMPER, heater, refrigerator, 1 queen, 1 full, brand new, \$4,500. Podsednik, 898-7436.

'93 INBOARD LARSON BOAT, 22-ft., 200-hrs., 350 Merc Cruiser motor, w/ski tow ropes, tandem/trailer, wholesale \$15,000, asking \$10,000. Baca-Asplund, 319-0628.

'00 BUELL CYCLONE, tack kit, Vance & Hynes muffler, Forcewinder K&N filter, extras included, 8200 miles, \$5,400. Myers, 865-6371.

'82 TRAVEL TRAILER, 19-ft., tandem, awning, stabilizing jacks, shower, bath, dual tanks & battery, sleeps 6, \$5,000. Lovato, 247-4942.

'79 STARCRAFT POP-UP CAMPER, clean interior, good condition, \$750. Shields, 286-5917.

'00 YAMAHA YZF R6, red/black, 11K miles, good condition, can e-mail pictures, \$5,000 OBO. Sondreal, 379-0690.

'89 SEARAY BOWRIDER, 17-ft., 100-hp Mercury, SSP, full canvas, good condition, \$6,000. McNiel, 344-7694.

'00 HONDA CBR660F4i, yellow/black, garage kept, must sell, 600 miles, \$6,500 OBO. Maestas, 228-0636.

REAL ESTATE

4-BDR. TOWNHOME, 3-1/4 baths, 2-car garage, 2,550 sq. ft., gated, full amenities, finished basement, Eubank/Morris, \$140,000. Longerot, 291-9102.

3-BDR. HOME, 2 baths, 2-car garage, 1,500 sq. ft., vaulted ceilings, fireplace, large backyard, corner lot, near Ladera Golf Course, \$135,000. Pouges, 839-4022.

4-BDR. HOME, 2 baths, 2-car garage, 1,440 sq. ft., updated cabinets in kitchen/baths, \$125,000. McDuffie, 292-0459.

4-BDR. HOME, 2-3/4 baths, 2-story, 3-car garage, 2,400 sq. ft., 4-Hills addition, close to base, all new up grades, \$210,000. Madlener, 323-6022.

4-BDR. HOME, 2-1/2 baths, 2,412 sq. ft., 2-story, pool, Heritage East, open house 10/5/03, 12-3, Mehler, 823-9020, www.fsbofirst.com, enter #10162.

4-BDR. HOME, 2-3/4 baths, LR, DR, FR, rec. room, office, heated sun porch, 3,600 sq. ft., Four Hills. Bonner, 299-7413.

MANZANO MOUNTAIN CAMP, RV, view, Ponderosa, rock, peace & quiet, 1 hour from Albuquerque. Gatto, 298-8493.

WANTED

DOS 5 EXPERT NEEDED, help recover genealogy files, will pay. Dunn, 298-6278.

TOW DOLLY, 2-wheel, for towing small SUV behind RV. Miller, 275-8154.

HOUSEMATE, private, furnished, Four Hills, mountain views, separate entrance, \$350 mo. Smith, 298-7365 or 292-1976.

DOGHOUSE, large, igloo-type, top & bottom, w/pad if possible. Ballou, 275-8662.

ELECTRIC BASS GUITAR, working condition, for student. Jenkin, 798-9642.

FLAT-PANEL MONITOR, Dell Computer, black, 17-in or larger. Chavez, 836-4069.

WINE PRESS, small, used. Waddoups, 865-7952.

MAGAZINES OR NATIONAL NEWSPAPERS, Aug. 2003 for project, *Time*, *People*, *USA Today*, etc. Ropp, 332-3197.

HOUSE/PET SITTER, Christmas break, responsible adult, must love big dogs, my place or yours. Kozelka, 771-0127.

FEMALE CHIHUAHUA, loving home w/no children, papers not required. Washburn, 294-5921, ask for Linda.

NEW MEMBERS WANTED, Sandia Women's club, "Sanado," open to Sandia wives, daughters, retirees, call for details. Goodwin, 294-6702.

WORK WANTED

BABYSITTING, high school senior, 3 yrs. as camp counselor, CPR, own transportation. Skinner, 299-5063, ask for Clarissa.

SHARE-A-RIDE

EAST MOUNTAIN VANPOOL, has opening, no need to drive, Frost Rd., N-14, Tijeras. Burns, 281-3922.

'A Gift of Hope' speaker, Chrissy Nelson, at Sandia Oct. 6

Don't miss author/speaker/nurse Chrissy L. Nelson at the Technology Transfer Center on Monday, Oct. 6, 9 a.m.

She will share her experiences from Ground Zero following 9/11 in a talk titled "A Gift of Hope." She has been featured on ABC, CBS, CNN, CSPAN, and has testified before Congress.

Hispanics in Science and Engineering featured at National Atomic Museum

Event part of National Hispanic Heritage Month

Three Sandians are among this year's honorees of the third annual Hispanics in Science and Engineering observance. They will be recognized at a reception at the National Atomic Museum, 1905 Mountain Road NW, Oct. 5, from 2 to 5 p.m.

The honorees include VP for Business Management Frank Figueroa (10000) for his contributions in electrical engineering; Regina Gonzales (2993), electrical and computer engineering; Miguel Rios, Jr. (3554), physics; Eloy Rodriguez, environmental biology; Van Romero, physics;

NATIONAL HISPANIC HERITAGE MONTH

Elizabeth R. Fernandez, a graduate student at the University of Texas at Austin; Richard Tapia, mathematics professor at Rice University; Gabriel P. Lopez, professor of chemical and nuclear engineering at the University of New Mexico; and, Luis Gutierrez, a graduate student in mechanical engineering at UNM.

Also being recognized are John Gallegos, Sara Rivera, Paul-Patrick Perseo, Jess Floro, Aslee Aragon, and Jacob Candelaria, all recent winners at the New Mexico Regional Science Fair.

The honorees will be featured in the Hispanics in Science and Engineering exhibit that will be displayed in the museum during the Hispanic Heritage Month of October. The purpose of the exhibit is to recognize the contributions made by Hispanics in science and engineering, to provide role models for students, and to recognize the diversity within the Hispanic community.

The joint committee of the National Atomic Museum Foundation, Lockheed Martin Corporation, and Sandia's Hispanic Leadership and Outreach Committee selected the honorees.

The public is invited. For information about the event call the National Atomic Museum at 245-2137 ext. 112.

Sandia volunteers make 'Habitat' house a home



CEILING DRY WALL — Kathleen Holt, a technologist in Sandia's Program Development and Environmental Decisions Dept. 6849, sets a screw for sheet rock in the Sandia/Lockheed Martin Habitat for Humanity project. Most of the drywall work will be done this weekend, according to retired Sandian Irv Hall, who is coordinating the project. Kathleen says she "had a blast" and plans to volunteer for two additional days on the project. The work is going smoothly, according to Irv. Painting and trim work will follow the drywall. "We have lots of little jobs for volunteers that aren't too complicated," says Irv. The house should be completed by late October. (Photo by Randy Montoya)

Sandians edit MRS volumes on thin film evolution and rapid prototyping

Duane Dimos (1801), Norm Bartelt (8721), and Sean Hearne (1112) have served as editors for two technical volumes just published by the Materials Research Society.

Duane, deputy director of Sandia's Materials and Process Sciences Center, is one of three editors of *Rapid Prototyping Technologies*. Rapid prototyping is a way to develop new materials and structures that cannot be realized by traditional manufacturing techniques.

The book offers a comprehensive overview of these subjects in 24 papers and 213 pages. Topics include layer manufacturing and selective laser sintering, solution and spray processing, direct-write of microelectronics, nanoscale rapid prototyping, and tissue engineering and biomedical applications.

International research activities are highlighted in areas of direct-write, solid freeform, and

microstereolithography.

Norm and Sean were two of five editors for the volume *Morphological and Compositional Evolution of Thin Films*, which contains 61 papers in 421 pages.

The book is part of a series started in 1990 with the intent of bridging a gap between the materials and surface science communities, promoting a closer connection between theory and experiment, and discussing common issues in thin-film growth and epitaxy.

Features include interdisciplinary discussions of thin-film growth and process sciences in metals, semiconductors, oxides, and other materials and processes with overlapping intellectual concerns.

Free access to the volumes is available to MRS members at the MRS web site (www.mrs.org), according to a blurb from the organization. Each volume is available from the Society in hard-cover at \$98 for MRS members, \$112 list. — Neal Singer

Feedback

Acrobat site license would cause hardship to current JIT supplier; negotiations under way

Q: If requests for Adobe Acrobat licenses are flooding the contact so much that they're handling only e-mail (as indicated a few days ago in the Sandia Daily News), is anybody pursuing a site license for that software? I'd say that's a pretty good indicator of demand.

A: Thank you for your inquiry and your interest in seeing that taxpayer dollars are maximized where possible through the use of site-wide license agreements. GC Micro, our JIT contractor for non-Microsoft software, had previously contacted Adobe about setting up a site license for the procurement of Adobe Acrobat but Adobe would not sell the product through GC Micro. Therefore, we would have to buy the product directly from Adobe, causing hardship to an 8(a) certified, women-owned JIT supplier who has done an outstanding job for Sandia. This could also potentially embroil us in a legal battle with GC Micro, as they have a legitimate contract to sell us commercial, off-the-shelf software. This site-license agreement would require Sandia to commit to purchase a certain dollar volume of business over a two-year period from Adobe. If the committed goals are not met, then Sandia could be forced by Adobe to pay the difference of what price we paid versus the normal price without utilizing the site-wide license agreement. The buyer is currently exploring the possibility of working with Adobe and GC Micro to come to an agreement on offering site-wide license pricing without the dollar commitment mandate.

Sandia does enjoy very favorable pricing through a program that GC Micro participated in on Sandia's behalf. For example, through the program Sandia can purchase Adobe 6.0 Pro for approximately half its regular price. — Dave Palmer (12000)

It's time again to weigh in as readers . . . Survey coming soon about Lab News, Daily News

We've all noticed it. Sandians have opinions. About this. About that. Now those folks who put out the *Lab News* and the *Daily News* are ready to ask what you think about their products. They last asked in 2001. You can read the results at that time in the June 15, 2001, issue of the *Lab News* (www.sandia.gov/LabNews/LN06-15-01/labnews06-15-01.pdf).

As was the case in 2001, a survey form will soon arrive in the e-mail boxes of about 600 randomly selected Labs employees.

It will come from thoughts@sandia.gov. For those selected who don't have handy access to e-mail, an old-style paper copy will be mailed as a follow-up.

The survey — with many of the same questions asked dating back to at least the early-90s — should take about 10 minutes to complete. (Okay, maybe a bit more if you really get into the few open-ended items.)

Past surveys — dating back about a quarter of a century — have enjoyed high response rates and have led to a variety of changes — typically evolutionary rather than revolutionary — while also providing an opportunity for readers to express what they like most — or least — about these employee publications.

For example, those responding to the 2001 survey asked for things like more stories about Sandians and their involvement in the community or activities away from the office, organization profiles/features, more work-related stories about Sandians in fields other than technical, and more use of color printing.

All of those modifications have occurred.

So, if you turn out to be one of the randomly selected, please respond quickly and thoughtfully. All those at *Lab News* and *Daily News* will appreciate it.