Sandia creates small handheld motion detector 1,000 times more sensitive than any known

Device allows naked eye to see motion of 10 nm

By Neal Singer

A new class of very small handheld devices uses light-wave interference to detect motion a thousand times more subtly than any tool known.

"There was nothing in the [optics] literature to predict that this would happen," says Sandia researcher Dustin Carr (1769).

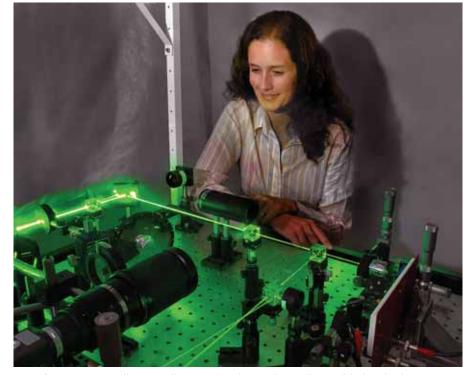
The patent-applied-for device will be the subject of an invited talk at the SPIE Optics East convention in Philadelphia in October, delivered by team member Bianca Keeler (1769).

Similar in operation to the shadow pictures projected onto a wall by shining light through the fingers of one hand moving over the fingers of the other, the relatively simple measuring device depends upon a formerly unrecognized property of optics: light diffracted from very small gratings that move very small lateral distances undergoes a relatively big, and thus easily measurable, change in reflection. A motion of 10 nanometers (nm) can be seen by the naked eye, says Dustin.

"The device couldn't exist unless you made it this small," he says. Features are in the 100-200 nm range, with 300 nm between top and bottom combs and 600 to 900 nm between comb teeth. "In MEMS [microelectromechanical] applications, very few things that sell are dominated by miniaturization. There's not a motivation in MEMS to make things still smaller as a matter of cost; the economics of scale for integrated circuits just don't apply to MEMS."

But here, size matters, and small is crucial: sub-wavelength interference

(Continued on page 4)



BIANCA KEELER studies very fine motion formerly unobservable by the human eye but now revealed by an unusual diffraction grating fabricated by Sandia's MEMS foundry in the MDL. The laser in this photo is eye-safe. (Photo by Randy Montoya)



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Sandians say farewell to the Coronado Club Retirees, employees share memories; save-pool efforts still alive

By Michael Padilla

In 1950 Hank Perez began his culinary arts career in Santa Monica, Calif.

That same year the Coronado Club held its grand opening.

Now Hank is a chef for the longtime Sandia social fixture, but not for long. Tomorrow (Oct. 1) will be his last day at the club as it closes its doors permanently.

Even though it will be an end to an era for the C-Club, Hank plans to rest for two weeks and continue working at another food facility.

"I think I will go nuts if I don't work," he says. "I'll miss this place, and I am going to miss the people the most"

Hank began his career at the C-Club in 1980 when he moved to Albuquerque. He

remembers his first big event there cooking for nearly 2,000 people with only one stove. That convinced him to acquire additional stoves, a bigger refrigerator, and more workspace.

"I wanted a freezer that could fit two Volkswagens," he recalls with a smile, "but was only able to get one that could fit one."

During his tenure at the club he went to night school and learned how to read and even-

tually became a certified executive chef. He served as a teacher to many employees and praises the work of two local chefs to whom he was able to pass along his skills.

"Every day is a good day," he says. "People

he says. "People have been so wonderful here."

For retirees
John and Anne
Weynert, memories of the club
are more than
just having
lunch.

It was about building friendships, dancing, socializing, and — above all else — swimming, the two say.

"We swam at the pool for more than 50 years," says John. "We

never gave up. After our friends would leave we would make friends with younger people."

(1954 photo)

The Sunday before Labor Day was their last day of swimming there. "Part of our life has gone," says Anne. "I nearly cried that day."

However, the memories of the club live on with John and Anne.

Before they were married in 1957, they cele-(Continued on page 5)

Benefits enrollment is Oct. 20-Nov. 9

See pages 7-10 for what's new for employees and retirees in Benefits 2005. Open enrollment extends from Oct. 20-Nov. 5.

Sandia rolling out new, redesigned, employee-focused internal Techweb

By Will Keener

Interested in saving time, reducing information overload, personalizing your computer workspace, doing your job more efficiently? A Sandia team has a way to help you, and its members are bringing it to a computer near you very soon.

In fact, if you're reading this on *Lab News* distribution day, it's coming tomorrow (Oct. 1). Or, if you skipped out early last week and are just getting around to this issue on Monday or Tuesday, it's already up there.

Check it out. In the upper left corner of your Techweb homepage just click the new Techweb logo. Zap, you're in the parallel world of the redesigned Techweb — Sandia's internal web. A different world it is, although many of us are familiar with some aspects of "portal technology" from other Web sites (Yahoo, Amazon, MSN are examples.) It's clean, it's uncluttered, and, in the vernacular of Web designers, its navigable.

Team members who redesigned Techweb hope it will become your own customizable homepage, but they aren't just throwing you in to see if you can swim with it. Instead, they've set up a side-by-side design, so you can study it, try it, test it a little at a time, and get familiar with its many features.

(Continued on page 6)

McQueary: Nation is now better prepared for homeland defense

3

6

THE KIDDIE POOL at the Coronado Club was always a

fun place for children of Sandians.

Weapons Integration Facility breaks ground in New Mexico



►11 Those Parking Blues: (Some) relief is on the way

ECP campaign: Look past your eyes and you may see more

What's what

My, my, my!, what on Earth?, I wondered.

Then — Woops! — I realized it wasn't Earth at all. This inquiry had to come from somewhere else, far, far away. But the moon wasn't full and there was no hot, dry wind out of the desert — the kind that drives people mad.

Crystals, maybe. . . from Santa Fe or Taos. Or leaf mold. Or cow chip mushrooms. Or one of those places you hear about where a confluence of "forces" creates a window that affords a view into the gigauniverse of knowledge. Or maybe just a nutcase with no new conspiracies. We see a few of those in our office.

"He" sent a couple of inquiries a few days ago — about 10 days apart, one to Media Relations and one to the Labs webmaster — both wondering about secret tunnels and underground facilities connecting Sandia to Los Alamos via Dulce, N.M.

"Has a UFO at any time ever been brought to your facility?" the first one asked. "Are there underground facilities at Sandia? What purpose do they serve? Do you have any communications with the multilevel underground facility labs in Dulce, New Mexico? Thanks!"

Note the sign-off exclamation point. That guy is $\underline{\textit{really EXCITED}}$ about this.

Then this: "Sandia Webmaster, would you please forward my question to a Sandia public affairs officer or someone who works at the Sandia labs? Thank you!

"Does the Sandia National Labs facility connect to a multi-level underground facility located in Dulce, New Mexico, 1-3 miles under the Archuleta Mesa region, as well as LANL via an underground tube shuttle system?" And another exclamatory "Thank you!"

The latter inspired a response from one of our group's wags — fictitious, of course. It wasn't sent outside — you don't like to encourage this species — but it was circulated through our offices and amused all of us for a while. Its high points:

"Actually, the secret tunnel is all about . . . the Naivete bean. . . . We need an extract from this bean to manufacture propulsion systems for rockets. . . .

"Obviously we couldn't dig a secret tunnel under Santa Fe for transport of the beans to the labs, so in 1961 we turned to Dulce.
... We dug only at night to escape detection by Soviet spy satellites.
... [And] for nearly 20 years some 16,000 Sandia and Los Alamos employees smuggled the dirt from the tunnel out of the labs [in their shoes] and covertly spread it all over Albuquerque and Northern New Mexico. As a result, [Albuquerque] has risen at least a few inches since 1961."

And, it wrapped up, "Yes, the secret tunnel and tube shuttle do exist. However, the multi-level underground facility is an exaggeration. That's probably a reference to another secret facility near Abiquiu."

Well, the pay-raise package may be a little light this year, but we at least have some fun at work.

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

Sandia LabNews

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LOCKHEED MARTIN

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Mike Hosking named ASM Fellow

ASM International will induct Mike Hosking (1833) as a member of the 2004 class of Fellows at its annual awards dinner Oct. 19 in Columbus, Ohio, during the ASM Materials Solutions Conference and Exposition.

ASM established the Fellow honor to provide recognition to members for their distinguished contributions to

materials science and engineering.

Mike's citation reads: "For distinguished achievements and sustained contributions to the understanding and advancement of the science and technology of the wetting behavior and interfacial reactions that



MIKE HOSKING

occur during soldering and brazing."

This will be Mike's second Fellow recognition for 2004. The American Welding Society honored him in April at its Annual Meeting in Chicago for his sustained research and achievements in soldering and brazing science and technology.

Recent Patents

J. Arlin Cooper and Paul Werner (6252): Latent Effects Decision Analysis.

Timothy Shepodd (8762), Ernest Hasselbrink, Jr., and Jason Rehm: Mobile Monolith Polymer Elements for Flow Control in Microfluidic

Dahv Kliner (8368): Making a Glass Rod with a Step of Measuring an Incremental Weight Gain.

Edward Tarver (8773): Time Dispersive Spectrometer Using Digital Switching Means. Steven Thoma (14153) and Francois

Bonhomme (6118): Templated, Layered Manganese Phosphate.
Alan Mahoney (2542), Scott Reed (14154),

Carol Ashley (1843), and F. Edward Martinez: Solar Selective Absorption Coatings. Ward Bower (6218), Michael Thomas (6216),

and Douglas Ruby (6218): Alternating Current
Photovoltaic Building Block.

Arlee Smith and Darrell Armstrong (both 1118): Image Rotating 4-Mirror Ring Optical Parametric Oscillator.

G.C. Frye-Mason, David Martinez (5744), Ronald Manginell (1764), Edwin Heller (1763), and Rajen Chanchani (1745): Method for Making Electro Fluidic Connections for Microfluidic Devices.



Retiree deaths

James G. Spirup (age 82)	July 24
Howard M. Hadlock (88)	July 27
Len E. Mahuron (87)	July 27
Charles I. Lowe (78)	August 1
D.D. Hesselbarth (89)	August 6
Vera Y. McCollough (87)	August 6
Joseph P. Gaynor (84)	August 12
Lawrence C. Bennett (70)	August 16
Leroy H. Stradford (85)	August 19
Genevieve R. Hines (89)	August 19
Earle A. Paxton (85)	August 22
James R. Hogan (57)	August 24
Oren L. Worden (90)	August 26

Nation is now better prepared for homeland defense, DHS Under Secretary McQueary tells Sandia audience



COMMEMORATION OF 9/11 — On the eve of the third anniversary of 9/11, Charles McQueary, right, Department of Homeland Security Under Secretary for Science and Technology, spoke at Sandia/California. California Laboratory VP Mim John, left, introduced McQueary. (Photo by Randy Wong)

By Nancy Garcia

Charles McQueary, Under Secretary for Science and Technology for the Department of Homeland Security (DHS), lauded contributions of the national laboratories to the nation's safety in a speech delivered to an overflow audience on the eve of the third anniversary of the events of 9/11

"We all know the world has irreversibly changed and homeland attacks are not only possible but probable," McQueary told the audience gathered at the Combustion Research Facility auditorium. "But we are far from helpless. You are and continue to be our enduring capability."

The fact that McQueary chose Sandia/California for his talk was an honor, said California Laboratory VP Mim John (8000) in introducing him.

"We're very honored that he chose to come here to recount a recent history of one of the most tragic days in US history," Mim said. She concurred with his acknowledgement of national laboratory employees, saying they have "dedicated themselves to this new mission with their heart and souls."

McQueary said it is a joy to discuss the

BioWatch, deployed over the last 18 months, which he said provides some protection to nearly 70 percent of the nation's population because they live near an area it covers.

BioWatch continually monitors air in more than 30 major cities, using a system that draws air over filter paper to trap particles for testing. A second-generation system in the works is geared for frequent sampling with little maintenance.

PROTECT, Program for Response Options & Technology Enhancements for Chemical/Biological Terrorism, is in place in the Washington, D.C., and Boston subway systems, where monitors help authorities reduce the risk of casualties in the event of a chem/bio attack. Information received by the monitors can cue operators to halt trains and shut off ventilation systems to limit exposure to an agent. On an average work day, some 1.3 million subway passengers in both cities are covered by this system.

Modeling and simulating information about threats enhances efficiency in a couple of ways. The simulation permits virtual, and hence, more affordable testing. It also provides a cost-effective and convenient way to conduct training. One such venue for use of this capability, McQueary mentioned, is the Atmospheric Modeling and Simulation Center at Lawrence Livermore

Sandia California News

advances made by the laboratories as he leads the research and development arm of DHS. He was confirmed by the Senate to this appointment in March 2003. His role is to use the nation's scientific and technological resources to provide federal, state, and local officials with defensive technology and capabilities.

As part of the nation's science and technology infrastructure, he said the laboratories responded quickly to the events of 9/11. Areas of contribution include hardening transportation, creating systems for early warning of possible biological attack, preparing radiological and nuclear defenses, and developing detection and countermeasure capabilities.

Projects being pursued through DHS include

National Laboratory.

The DHS is involved in a collaboration to develop biometric capabilities, he added, for fingerprint identification, iris scanning, and facial recognition systems. The collaboration involves the United Kingdom, Australia, and Canada and may expand to 45 nations.

A travel security initiative, meanwhile, should address several pressing issues, including the threat of terrorism, animal disease and defense, food security, and behavioral aspects.

Through such projects that draw upon critical partnerships between government entities at all levels, industry, and academia, McQueary said, "The nation is far better prepared . . . These developments are making the nation safer."

Si Feedback

Q: Can we please look at the data on graduates from the College of Santa Fe? As a graduate of CSF and a manager who has employees attending CSF, I am quite frustrated at repeatedly hearing that a CSF degree isn't worth the paper it is written on. This view comes repeatedly from management (VPs, directors and managers) in a variety of forums. Lets look at the facts. What level are CSF graduates within Sandia? What kind of VoC ratings are they receiving? How does this compare to graduates from other schools? Do we truly have a problem or do we have some isolated incidences of low performers? If there is truly a problem, shouldn't we be working with CSF to improve their curriculum to meet our needs instead of continuing to pour money into the institution? Failing that, shouldn't we be working with another local university that will meet the needs of students who work full time? The current view of CSF is based on anecdotal information only and is extremely demoralizing to those of us who have given up our personal/family time to pursue an education while working full time. As a manager, I would also like to know what to advise my staff are they wasting their time?

A: At this time, we do not have the type of data that you are requesting for College of Santa Fe graduates readily available. As you can imagine it requires a significant amount of

research to pull it from individual records. However, we have established a project for FY05 to review this type of information for all university program participants, regardless of school attended. We do believe that all the programs and participants over the years have made a significant contribution to Sandia, and that information and impact should be captured and preserved. The plan is to publish it via a SAND Report.

It is unfortunate that negative remarks regarding the College of Santa Fe are repeatedly being heard by Sandia employees. The fact is that the University-Based Education Programs CPR 300.7.1,

http://www.irn.sandia.gov/HR/Policies/Training/cpr30071.html, stipulates that Sandia may provide educational assistance to regular employees for approved courses and degree programs that are accredited by an agency recognized by the US Secretary of Education. The College of Santa Fe is an accredited institution of higher learning and is so recognized by Sandia.

Although the CPR allows for options, it is true that colleges and universities are not created equal nor perceived as being equal; therefore, it is imperative that the manager and the employee understand that and make decisions based on that knowledge. These important conversations should be part of the career

development discussions when doing PMFs and also related to what the employee wishes to pursue as career growth. Ultimately, it is the manager's responsibility to determine the appropriateness and applicability of a course or degree and to determine if the course or degree has an anticipated value to Sandia.

In addition, it's important to keep in mind that while participation in university-based education programs is designed to enhance employee performance and professional ability, it does not guarantee an employee advancement, a different job assignment, or a pay increase regardless of the institution attended.

— BJ Jones (3500)

Q: Is it reasonable to set a time limit on preferred parking for carpoolers? Sometimes I will be looking for a parking spot during mid-day, and find numerous empty carpool spots. Then I have to waste gas and time driving to a remote parking lot. What if we chose a cutoff time after the morning commute, say 10 a.m., beyond which carpool spots were available to anyone?

A: The Traffic Safety Committee discussed the limited hours option recently and the consensus of the committee was to not implement the suggestion. The members believed it would be inconsistent with the purpose of designating carpool spaces and very difficult to enforce.

— Ed Williams (10864)

Weapons Integration Facility breaks ground

Final stage of mighty MESA construction project begins

By Neal Singer

If claims of Sandia efficiency cause you to throttle laughter because of some bad past experience, rebuild your faith by watching the amazing progress of the MESA project, which has now

let out the contract for its final building, the Weapons Integration Facility (WIF), the linchpin of the half-billion-dollar complex.

The project
— which has
required rerouting a major road
around Area 1,

"Researchers get more out of life they're more productive — if they're getting data to improve their understanding of their models."

putting in a complete set of new underground utilities, renovating the Microelectronics Development Laboratory (MDL), adding a microFab and microLab to fabricate and test compound semiconductors such as gallium arsenide as well as silicon devices, and adding communications links to the new computer and nanotechnology buildings — has proceeded on time and on budget. Though problems always dog large projects, this one seems to be proceeding as unstoppably as an ocean wave.

The \$44 million construction contract for WIF was placed with Hensel Phelps Construction Co. on June 28. According to deputy project manager Bill Kitsos (10823), a notice to proceed went out on Sept. 8, and "we should be seeing heavy machinery this week digging the basement." Physical completion is scheduled for May 2006.

The building has two components, classified and unclassified, with the exterior wall of the unclassified component forming the border of the classified area.

The structure — three stories within the fence and two stories without — will contain a next-generation VIEWS Corridor to allow weapons designers and microsystems engineers to simulate their designs through advanced computing before they build devices.

"I've got nothing against experimenters,"

says MESA Program Director Don Cook (1900). "I was trained that way myself; I love to measure things precisely. But researchers get more out of life — they're more productive — if they're getting data to improve their understanding of their models."

Devices, he says, have to work in intended but also unintended environments, and "you can't test in all these areas, so you have to model and experiment at boundaries." The data then obtained show not only how a device works but where, why, and how it might fail.

Put another way, says Philip Heermann (15230), to be productive, weapons and microsystems designers of the future must be able to understand the information in their computers. "They can't hold it in their hands," Phil says. "They have to have a means to look at it." And they will have that means, he says, because the leading edge of ASC [Advanced Simulation and Computing] visualization will be located in WIF.

The orderly arrangement of new buildings bodes well for Sandia's future, Don says. "In between the nano and the cogno [i.e., computers] is the micro," he says, gesturing first to the north at the future location of the Sandia/Los Alamos Center for Integrated Nanotechnologies (CINT), now under construction along Eubank Blvd., then to the west at the new computer building known as JCEL (Joint Computational Engineering Lab), before gesturing at the near ground that will house the MESA center. MESA stands for Microsystems and Engineering Sciences Applications.

A 40-foot-wide pedestrian mall will stretch from the east end of the microLab/microFab to the other end of JCEL and eventually past the Steve Schiff auditorium, with trees, benches, and even a small waterfall whose active ingredient — water — will be reused a final time, after reclamation from Sandia's microfabrication facility, before entering the Albuquerque sewer system.

Two new parking lots, doubling the current capacity of the IMRL lots, will be added, says MESA project manager Bill Jenkins (1920).

A "cafeteria" eventually will replace T-City, whose employees can expect to be moved into a more energy-efficient permanent space. No time schedule has yet been established.

Don, providing a tour of the area to the *Lab*

News, was happy to be stopped by a construction worker who reminded him to wear a helmet near construction work (though Don was not technically in the construction area).

"We have the paperwork done and the buildings going up on schedule," he said. "Barring some unforeseen event, by '08 everything will be done."

Three hundred seventy-four researchers will occupy the WIF facility when completed.

"WIF will fulfill the MESA vision by co-locating individuals from various organizations into integrated teams to work on microtechnology solutions," says Bill Jenkins.

Nanotechnology research funding list live at website

Nanotechnology researchers can shorten their search for funding by visiting the Center for Integrated Nanotechnologies (CINT) Internet site (www.sandia.gov/cint or www.lanl.gov/cint). There, a searchable database of federal government nanotechnology funding sources is supplied as a service to the community by CINT, a joint project of Sandia and Los Alamos national laboratories supported by DOE's Office of Science.

The solicitation database currently lists 906 sources from federal agencies, along with solicitation numbers, amounts of funding available, application deadlines, numbers of current grantees, precise descriptions of program goals, and other relevant information. The listing is updated monthly.

"We hope this information will prove useful to our users and the nanotechnology community," says Neal Shinn, the interim CINT User Program manager. "Less time spent seeking funds means more available to do research."

Readers are invited to further publicize the CINT Website. — Neal Singer

Motion detector

(Continued from page 1)

effects cause the visual display.

"Making use of the effect is fairly obvious once you realize it happens," he says.

Fabricated out of polysilicon by standard lithography techniques similar to that used to make MEMS devices, the Sandia system uses two tiny comb-like structures (instead of fingers) laid one over each other. The bottom comb is locked rigidly in place. The top comb is secured only by horizontal springs. Any tiny motion sends the top comb skittering over the bottom comb, laterally deforming the grating. A very tiny disturbance changes by an unexpectedly large amount the amplitude of light — in the visible to near-infrared range — diffracted from a tiny laser beam shining upon the apparatus.

The measuring device, still in the laboratory stage, is in effect a kind of accelerometer, about the size of the inexpensive microelectromechanical devices that open air bags, and has multiple possible uses.

"If you can make very sensitive detectors very cheaply and very small, there are huge applications," says Dustin. "Made small, synchronized, cheap, and placed on every block, we could take data from all these sensors at once and measure the motion of the earth when there's not an earthquake. So we could learn what leads up to one."

Another use would be for skid and traction control in cars, detecting if the back end of the car

MIT's Technology Review selects Dustin Carr as one of top 100 young researchers

Dustin Carr, who earlier gained fame as a graduate student at Cornell for his creation of a

nanoguitar, was selected this week by MIT's semi-independent science magazine *Technology Review* as one of the year's top 100 researchers under the age of 35.

Says Terry Michalske (1040), Center for Integrated Nanotechnologies program director, "I was very pleased when Dustin contacted me



DUSTIN CARR

about his interest in joining Sandia and getting involved in CINT. I've admired his work for a long time. He has pushed the limits of lithography to build some very important nanoscale structures."

In an unsolicited testimonial, Dustin told the *Lab News*, "I can't imagine other places that could put the pieces together of this work as rapidly as Sandia has. We have capabilities that don't exist elsewhere in the world. In terms of MEMS fabrication knowledge, I doubt there's any place that can compete."

"Such devices also could take the place of inertial navigation systems. We could have handheld-sized devices on Volkswagens that would work even in a tunnel."

is moving in a different direction from the front end.

"Such devices also could take the place of inertial navigation systems," Dustin says. These typically require large gyroscopes to keep commercial airplanes moving on a preset course. "We could have handheld-sized devices on Volkswagens that would work even in a tunnel."
Other defense applications are possible, he says.
He sees a time frame of three to five years
before the devices are available for use.

Also involved in the project are Greg Bogart (1749), John Sullivan, Tom Friedmann (both 1112), and Joel Wendt (1743).

Coronado Club

(Continued from page 1)

brated their first New Year's Eve together at a dance at the Coronado Club in 1954. Anne recalls the dances that followed.

John reminisces about his retirement party in 1992 and was amazed at all the people who attended. "We ran out of food," he says. "We really had a good time."

Matt Schleyer, the pool manager, says he spent nearly every day in the summers at the pool since the age of 8. Since then he served as a lifeguard, a swim coach, and head lifeguard. He will continue working at the Sandia Employees Recreation Program (SERP) office, Bldg. 832, and will continue working on his degree in education at the University of New Mexico.

He says as an employee he understands what has to be done and that the pool requires a lot of work.

"The day the pool closed everyone was having a good time," he says. "It turned out to be a pretty memorable moment for a lot of us."

Joe Sorroche, president of the Thunderbirds, has frequented the club since 1956. He retired in 1989 and immediately became active with the retiree group.

"It's a great loss to us," says Joe, "not only to the retirees, but to all employees of Sandia."

Joe says nothing compares to the Coronado Club, and he remembers how much fun he had at all the socials, dances, and family dinners.

"My family grew up using the pool," he says. "Watching my kids enjoying the water are my fondest memories."

Joe has a hard time thinking of just one thing he's going to miss most.

"I'm going to miss everything, from the fantastic food to chefs that cook it," he says. "I'm going to miss the fabulous pool with the gorgeous trees. You name it, I am going to miss it."

He says he knows it was a difficult decision in closing the club, but he and the retiree group want to thank the Department of Energy and Sandia for allowing the retirees access to the Coronado Club. "We are very appreciative of that," he says.

Larry Clevenger (3300), Director of Sandia's



MEMORY LANE — Sandia retirees Lillie and Louis Silva and Margie Hills take a look at pictures on a memory wall at the Coronado Club "Bon Voyage" reception Sept. 23.

Benefits and Health Services, says the decision to close the Coronado Club was not easy.

"We looked at all options," says Larry.
"However, it would be too costly for Sandia to invest in the renovation of the building."

Dwindling membership, high maintenance costs, and a need to renovate the club all led to the decision.

More than \$5 million would be needed to renovate the current facility, says Larry. This includes improving the food facility, resurfacing the pool and tennis courts, replacing plumbing, and updating heating and cooling systems.

In July 2003, Sandia chartered a study to decide the future of the Coronado Club. In September that year, the results of the options for the use and funding of the Club were presented to Sandia management. In early spring of 2004 the decision was made not to invest in the reno-

vation or upgrade, and to close the club Oct. 1 (*Lab News*, May 28, 2004).

Within the past decade the Coronado Club has seen a decline in its membership. In May 1997 membership was at 3,000; current membership is at 1,700. Only 10 percent of eligible employees belong to the club and 7 percent of eligible retirees are members. Seventeen thousand people are eligible for membership.

Pool update

A group of Coronado Club members began a "Save the Club" movement earlier this year and continues to seek ways to preserve the outdoor areas of the club.

The group has been in discussions with the Air Force housing contractor on investing in the pool area. They are also working to set up a private organization that could operate the pool if sufficient revenue were generated. Another possibility would be turning the pool over to a commercial operator.

A petition with more than 2,700 signatures was collected and sent to Sandia's top management asking for help in finding a solution, says Rob Leland (9220), an organizer of the movement.

"Generations of Sandians have relied on the Coronado Club for safe, convenient family recreation in a unique and irreplaceable setting," says Rob. "We want that tradition preserved for generations to come."

A web site, www.savetheclub.com, has been established to help with these efforts.

Sandia is closely working with Col. Hank Andrews, 377th Air Base Wing Commander at Kirtland Air Force Base, on several options in keeping the tennis courts open for Sandia employees. Continued dialog to keep the pool up and running is also under way.

Sandia Facilities will work to ensure that the safety issues of the Coronado Club are attended to after the closure. The Coronado Club will be placed on the schedule for demolition in the near future.

Sandia employees can use the Mountain View Club for meeting space, food services, and recreational needs.

"The Air Force has been gracious in allowing current Coronado Club members to become members of the Mountain View Club at a reasonable rate," says Larry. "We are grateful for the cooperation and assistance of the Air Force."

"Sandia leaders acknowledge the concern from all Sandians and the movement to save the club," says Larry. "Unfortunately Sandia had to make the difficult decision of closing the Coronado Club."

Mountain View Club Membership

Membership for Kirtland's Mountain View Club has been extended to current Coronado Club members for \$15 a month. A special offer to current C-Club members includes three free months, and the remaining months of the first year at \$10, if members join the Mountain View Club through Oct. 31. For more information call the 377th Services marketing department at 846-1644.



SANDIANS frequently gathered at the Coronado Club for a game of chess.



BATHING BEAUTIES — The Coronado Club pool was a popular place for people to hang out during the hot summer months. (1954 photo)

Techweb

(Continued from page 1)

Cara Corey (9527), project lead on the Techweb redesign, has been working with her

team for just over a year. Her first step was in the spirit of Integrated Enabling Services: she listened to her customers. "We've relied on customer input from users all during the past year. We looked at

"We've relied on customer input from users all during the past year."

survey results from our surveys or those of others about what the lab population wanted. We looked at the stats collected from the web and from service tickets from computer support. We also have discussed lessons learned with other labs, which have gone to portal frameworks for their web pages. That led to the redesign," she says.

After the redesign was completed this summer, members of the Strategic Web Infrastructure Framework and Technologies team, SWIFT for short, conducted usability studies. "You build a site based on your experience of what you think will work, then you test it with small user groups. Can they customize it? Search with it? Navigate on it? How easy is it? Based on the results we modify and keep testing," Cara says. "We will continue to get user feedback even after we roll out the design. Believe me we're not done. This is an ongoing process."

The real rewards of the SWIFT team's efforts are in the possibilities of the new site. "Things are dynamic on this page instead of static. They come and they go," explains Carla Scott, overall project lead.

The missing black pearls

The main elements are still to be found on the new Techweb page, but with a "less is more" feel to them. The "black pearls," which run horizontally across the current page and name the Labs' Strategic Management Units (SMUs) are replaced in the new design with a horizontal column of SMUs, each with a thumbnail photo of a relevant activity and each providing a link to more information.

In the left column are Sandia quick links and personalized quick links to those sites most often used by the individual. These replace the "green pills," which run in a horizontal band near the top of the current page.

In the center of the page is a "News" box, or "portlet" in the web vernacular. This is where you can read a recent Sandia news release, or tap into a number of corporate publications, including *Sandia Daily News*, TNT (Sandia/California newsletter), Sandia's Morning Media Report, and, of course, the latest (or an archived) issue of *Lab News*.

Other features include local weather and a new corporate calendar feature, making its premier with the new design. Techweb is also



THE REDESIGNED TECHWEB SITE — Sandia's internal Web has some aspects of "portal technology."



PROUD MEMBERS of the SWIFT team, who are completing the first phase of a new internal Web redesign project.

showing off the Technical Library's new search software, SearchPoint, based on Verity's Ultraseek, which actually came on line in August. "We think the search algorithms for Ultraseek fit our web content better," says Kathy Pierson, (9615) who led the search engine project for the Technical Library.

What happened to all those categories that fill the center of the existing Techweb site? Look for them on a tab called Categories. And remember, most of the things you see can be personalized, minimized, eliminated, or moved around to suit your needs.

Integration with individual in mind

Turning Techweb from an organization-based product to an individual-based one was the key to success for Tracy Walker (9617), project lead for the integration aspects of the redesign, says Tracy.

Part of the success of this effort was creating an internal web steering committee to help align corporate direction with the web needs. "The committee cleared the way so we could focus on implementation and minimize the political aspects," says Tracy.

Tracy and others on the 21-member team have stayed away from talk about "portals" during the redesign. The reason: "Portal is one of the most overloaded words in computing right now." Many Sandia portals already exist and software vendors have jumped on the bandwagon adapting their core products to the web as "portal" versions. "Instead, we have focused on implementing the redesign on a combined portal framework based on the diverse data sources used around the Labs."

The Sandia team developed its own definition for *portal*, which goes to the concept of making the data accessible to select audiences. Part of the sophistication of the portal technology is that it allows the team to bring together information from a variety of data-sources at the desktop, says Cara. "You can combine information from various sources — from Oracle, PeopleSoft, and a web server — and assemble it all on the page to help people do their jobs."

"We're asking what's the best way to make the data available from the user's perspective?" The organizations still own the data, but they don't own the presentation of it and how it's used," says Tracy. "That's up to the people using it."

Targeting information to user

This work led to an independent approach to accessing data for employees, Tracy continues. "When you enter the site and give a user authentication, we know certain characteristics about you and we can use them to create a user segment. Then we can target information to a user segment."

Tracy gives two examples. First, take the weather portlet, which defaults to Albuquerque weather unless the user customizes it for another site. "We've got Sandians in 26 different places, so not everybody wants Albuquerque weather," he says. Carlsbad employees have requested a site-specific weather

SWIFT Redesign Team members

Because several other national labs have instituted portal-based internal websites, Sandia's team has benefited from their experiences. The team also has compressed the amount of time needed to bring the technology on-line. "This speaks very well for the people involved and the level of effort from our team," says Cara Corey (9527). Cara, who has been involved in other redesigns, knows these projects have taken as long as three years.

Members of the team: Tracy Walker, Carla Scott, John Mareda, and Andrea Cassidy (9617); Cara Corey, Barbara Lucero, Sharon Brito, Elaine Lieberman, Rose Omidvaran, Kay Rivers, Kara Madden, Jeff White, and Hilary Bienstock (9527); David Leong, Sam Cancilla, and Dirk Vanwestrienen (9329); Kathy Pierson and Vince Duran (9615); Alexandra Proserpio (9616), Carla Forrest (3521); and Bev Ortiz (9622).

report, and employees at other locations will eventually have the ability to tailor the weather to their sites, as well.

Traffic works slightly differently but gets to the same place. As a California employee, even though he works for a New Mexico organization, Tracy wants to know Bay Area traffic, not what's going on at the Big I.

When you sign on, the portal will recognize you and provide the same interface, whether you are at home, on the road logging in on a laptop, or in an office or laboratory, working on a Mac or a PC. Bookmarks, a list of contacts relevant to you and your job, such as your ES&H coordinator, training coordinator, or computer security representative, and other similar information will be available from any computer.

A portal framework can also help users who do similar tasks, whether they are engineers on a project or administrative staff members across the labs doing similar work. These groups are called "communities of interest" in webspeak and several have already been identified for the rollout. It will be up to Sandia users to see other potential communities and organize them as the pages evolve.

Learning more

One of the best ways to learn about the new Techweb is by going to ah. . . the Techweb. This site: http://www-irn. sandia.gov/swift/teams/redesign offers information on rollout schedule, briefings (running through mid-October), how-to information, and contacts.

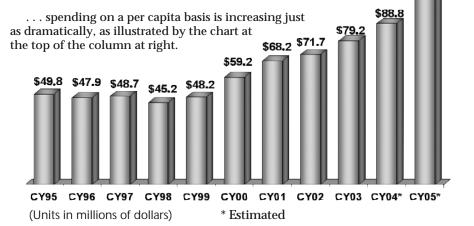
Benefits Choices 2005

Open Enrollment is Oct. 20-Nov. 9

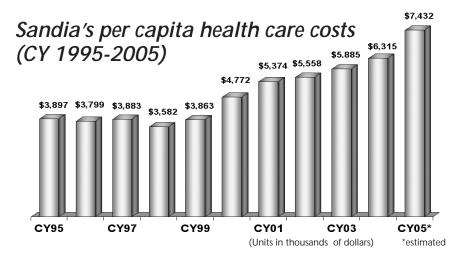
Again, increasing health care costs are in the forefront

The charts and stories on these four pages about Sandia's Benefits Choices 2005 program were provided to the Lab News by Sandia's Benefits organization.

As discussed in the Jan. 23, 2004, Lab News, rising health care costs continue to be a struggle for Sandia and the nation. As you can see from the chart below, the expected amount Sandia will pay for health care costs for employees, retirees, and their dependents in 2005 will have more than doubled over 1995 costs. True, we are seeing a rise in the number of employees that are \$104.5 covered under our medical plan, but . . .



When Sandia's health care costs increase, the labor rates that we charge our customers must also increase. To hold down our labor rates so that they remain competitive, we must manage the increases in our health care costs. Employees and retirees feel the impact of these health care cost increases through rising premiums and/or plan design changes such as increased copays or coinsurances. Therefore, it is in all of our best interests to work together to make sure our health care dollars are being used wisely. As an employer, Sandia has taken action to address some of the rise in costs, such as negotiating the best prices possible with our vendors, and giving you access to services that can help you stay as healthy as possible. As the consumer, however, you have a crucial role in determining how Sandia's health care dollars are ultimately spent. How can you, the consumer, help to ensure our health care dollars are being used wisely? Read on . . .



There are three principal reasons for increased health care costs:

- 1. Americans are living longer and using more health services.
- 2. Medical technology is expensive.
- 3. The use of prescription drugs has risen sharply in recent years.

Americans are using more health services today

America is aging; however, we are not aging as "gracefully" as we would like. That is, we are leading unhealthy lifestyles (e.g., poor eating habits and lack of exercise) that are catching up with us and are causing a significant rise in chronic illnesses. Sandia provides two very important on-site services to employees to assist them in living healthier lifestyles. First, if you haven't already taken advantage of the ¡SALUD! Health Promotion program, there's no time like the

This program provides employees with a variety of health education classes as well as providing a variety of exercise classes. Best of all, it's free! Second, if you have diabetes or are at risk for diabetes, or you have high cholesterol, high blood pressure, or may need to lose weight, you can self-refer to the on-site Disease Risk Management Clinic in Albuquerque. It provides employees with a variety of medical services such as physician consultations, one-on-one sessions with health educators and dietitians, lab work, etc. Again, all free! If you are a retiree, many of the health plans provide access to a variety of health maintenance programs.

(Continued on next page)

What's new? 2005 changes to Benefits plans

Following is a summary of changes to our Benefits Plans. Changes are effective Jan. 1, 2005. For detailed information refer to the Benefits Choices 2005 Annual Open Enrollment booklet, a PDF of which is available at the Open Enrollment Web site (http://www.sandia.gov/benefits/oe). Retirees can access Open Enrollment information online at http://www.sandia.gov/benefits/oeret. Printed copies of the booklet and medical plan comparison grid are being mailed for delivery to plan participants prior to October 20 (employees' booklets and grids will be mailed separately and may not arrive at the same time).

Employees:

Medical Plans — Premiums have increased (see

CIGNA Network POS Plan — Insulins are available as preferred brand names only.

Kaiser Permanente HMO Plan

Well-child preventive care visits to age 2 (wellbaby care) — No charge

Kaiser Permanente HMO Plan (Cont'd.)

Prenatal care (scheduled) and first postpartum visit No charge

Allergy testing visits — \$10 copay Outpatient surgery — \$50 per procedure Hospital inpatient admission — \$250 per admission

Emergency department visits — \$75 per visit (waived if admitted directly to the hospital as an inpatient)

Ambulance services — \$75 per trip Prescription drugs:

Generic — \$10 copay (up to 30-day supply, at a Plan pharmacy or new Mail Order Program); \$20 copay (up to 100-day supply for refills through the Mail Order Program) Brand name/compounded — \$20 copay (up to 30-day supply, at a Plan pharmacy or new Mail Order Program); \$40 copay (up to 100-day supply for refills through the Mail Order Program) Behavioral health — see Medical Plans Compari-

son Grid for mental health and substance

abuse copay changes (Grid is being sent to employees' mail stops and is available on the Open Enrollment website.)

Reimbursement Spending Accounts (RSA) - Deductions will begin with the first paycheck in 2005.

Please note: The deadline for making your final RSA election, Vacation Buy election, as well as choosing pre- or after-tax premium payroll deductions and waiving medical coverage is Nov. 9, the end of Open Enrollment. There will not be an extended period for these elections.

Retirees:

 $\label{eq:Medical Plans} \textbf{--} Some \ premiums \ have \ increased.$ CIGNA Network POS Plan — Insulins are available as preferred brand names only.

Lovelace Senior Plan

\$15 copay for PCP office visits and routine physical

Hospital inpatient admission — \$200 copay Outpatient surgery — \$100 copay Ambulance — \$100 copay (waived if admitted)

CT scan — \$50 copay

Radiation therapy — \$20 copay per visit Chemotherapy — \$20 copay per visit MRI — \$100 copay

Oxygen supply — \$20/month Retail prescription drug benefit — \$15 copay generic/\$25 copay brand name

(Continued on next page)

More information?

- Refer to your Benefits Choices 2005 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 website. See below for address
- All Employees and retirees will also receive Medical Plan Comparison Grids. Employee Grids will be mailed separately from the Open Enrollment booklets. Retirees will receive grids with the Open Enrollment booklets.
- 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 (address below).
- · Attend a Benefits Choices 2005 Open Enrollment meeting (see schedule on page 9).

Open Enrollment Web site:

Employees http://www.sandia.gov/benefits/oe Retirees http://www.sandia.gov/benefits/oeret

Contact Benefits by phone:

Benefits Customer Service/NM — 505-845-2363 Benefits/CA — 925-294-2254

Open Enrollment Phone System:

505-844-3200 or 800-417-2634, enter 844-3200 at prompt The phone system will be accessible from Oct. 20 through

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

- Employee and retiree medical premium rate charts
- Open Enrollment informational meeting schedule
- Required actions for Open Enrollment participants

Medical coverage premiums based on several factors

Open Enrollment

(Continued from preceding page)

Medical technology is expensive

We all know how technology overall has greatly enhanced worker productivity and efficiency. In the medical arena, it has allowed more accurate diagnoses and the ability to treat previously untreatable conditions, which is saving countless lives. However, this has come at a cost to society. For example, did you know that the new Gamma Knife procedure allows neurosurgeons to operate on brain tumors without making a single incision? Because of its accuracy, the Gamma Knife allows doctors to treat tumors previously thought inoperable. However, this procedure is expensive; in the Albuquerque area, it costs approximately \$37,000. Since we aren't doctors, we have to rely heavily on their expertise and, most often, doctors do know best. However, you owe it to yourself to be a wellinformed consumer when it comes to your health care. Ask your doctor why a specific test or procedure is being done and what the potential risks/complications and associated costs are. After all, would you drop your car off at the mechanic's shop without asking what they plan on doing, why, and how much it is going to cost?

Rise in prescription drug use

The use of prescription drugs has escalated dramatically over the last few years. New and improved prescription drugs are helping treat more serious illness, reduce hospitalizations, and/or just enhance our quality of life. However, did you know that by using mailorder pharmacies for maintenance medications you can help Sandia save significant dollars on the millions of dollars spent on prescription drugs? Maintenance medications are those taken over a period of time such as blood pressure or cholesterol-lowering medications. For example, out of the top 10 drugs purchased at retail pharmacies under the Mutual of Omaha plans, all of them are maintenance medications and could be dispensed by mail order. Purchasing by mail order saves you and Sandia money. If you are enrolled in one of the Mutual plans, go to www.ehs.com for more information on using mail order. If you are enrolled in the CIGNA plan, go to www.teldrug.com. The Kaiser HMO plan will be offering mail order discounts in 2005.

In summary, some of the things you can to do to help keep your own health care costs down, and consequently those of Sandia, are:

- 1. Take advantage of Sandia's free, on-site ¡SALUD! Health Promotion program.
- 2. Visit the free, on-site Disease Risk Management Clinic in Albuquerque, if necessary.
- 3. Stay involved with your health care. Ask your doctor questions. And understand the decisions your doctor makes on your behalf.
- 4. Use your mail-order pharmacy benefit if you take maintenance medications.

Managed care helped to control health care costs for a number of years, but that is no longer the case. The Benefits Department is continuing its quest to develop solutions to control health care costs in the

future. We also need you — the health care consumer — to be actively involved in your health care decisions to help us in this quest.

Employee premiums

Non-represented employee premiums for the Sandia Intermediate PPO Plan, the Sandia Top PPO Plan, and the Kaiser HMO Plan will increase, on average, 13% for 2005 as opposed to the 7.6% increase that you saw this year. The premiums for the CIGNA Network POS Plan will increase, on average, 6.7%. The Sandia Basic PPO Plan will remain at no premium.

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 2005 Open Enrollment booklet for more information). Having your premium taken from your total pay before federal, state, and social security (FICA) taxes are deducted lowers your overall taxable income and saves you money.

Medical Plan	Tie	er 1	Tie	er 2	Tie	r 3
	Up to	\$75K	\$75K-	\$150K	Over \$	150K
	2004	2005	2004	2005	2004	2005
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	\$31	\$35	\$44	\$50	\$57	\$65
Family of Two	\$60	\$68	\$86	\$98	\$112	\$128
Family of Three or More	\$81	\$92	\$116	\$132	\$151	\$172
KAISER HMO						
Employee only	\$31	\$35	\$44	\$50	\$57	\$65
Family of Two	\$60	\$68	\$86	\$98	\$112	\$128
Family of Three or More	\$81	\$92	\$116	\$132	\$152	\$172
CIGNA POS						
Employee only	\$45	\$47	\$57	\$62	\$70	\$77
Family of Two	\$89	\$91	\$113	\$121	\$139	\$151
Family of Three or More	\$119	\$123	\$152	\$163	\$187	\$203
TOP PPO						
Employee only	\$51	\$58	\$64	\$73	\$77	\$88
Family of Two	\$100	\$113	\$126	\$143	\$152	\$173
Family of Three or More	\$135	\$153	\$170	\$193	\$205	\$233

The chart above outlines the current and new premium-share amounts (effective Jan. 1, 2005) for non-represented employees.

Medical Plan	2004	2005
BASIC PPO		
Employee only	\$0	\$0
Family of Two	\$0	\$0
Family of Three or More	\$0	\$0
INTERMEDIATE PPO	1.0	
Employee only	\$31	\$35
Family of Two	\$60	\$68
Family of Three or More	\$81	\$92
CIGNA POS		
Employee only	\$38	\$47
Family of Two	\$76	\$91
Family of Three or More	\$101	\$123
TOP PPO		
Employee only	\$43	\$58
Family of Two	\$85	\$113
Family of Three or More	\$115	\$153

Per the bargaining agreement, the chart above outlines the current and new premium-share amounts (effective Jan. 1, 2005) for employees represented by the Metal Trades Council or OPEIU.

Medical Plan	2004	2005
BASIC PPO		
Employee only	\$0	\$0
Family of Two	\$0	\$0
Family of Three or More	\$0	\$0
INTERMEDIATE PPO		
Employee only	\$31	\$35
Family of Two	\$60	\$68
Family of Three or More	\$81	\$92
CIGNA POS		
Employee only	\$45	\$47
Family of Two	\$89	\$91
Family of Three or More	\$119	\$123
TOP PPO		
Employee only	\$51	\$58
Family of Two	\$100	\$113
Family of Three or More	\$135	\$153

2004 2005

Modical Plan

The chart above outlines the current and new premium-share amounts (effective Jan. 1, 2005) for SPA-represented employees.

See retiree cost charts for 2005 on next page . . .

2005 key changes

(Continued from preceding page)

Mail order prescription drug benefit — \$30 copay generic/\$50 copay brand name Emergency room copay will not be waived if admitted

Kaiser Permanente HMO Plan

Well-child preventive care visits to age 2
(well-baby care) — No charge
Prenatal care (scheduled) and first postpartum visit
— No charge
Allergy testing visits — \$10 copay
Outpatient surgery — \$50 per procedure

Outpatient surgery — \$50 per procedure
Hospital inpatient admission — \$250 per admission
Emergency department visits — \$75 per visit
(waived if admitted directly to the hospital as

an inpatient) Ambulance services — \$75 per trip Prescription drugs:

Generic — \$10 copay (up to 30-day supply, at a Plan pharmacy or new Mail Order program); \$20 copay (up to 100-day supply for refills through the Mail Order Program)

Brand name/compounded — \$20 copay (up to \$30-day supply, at a Plan pharmacy or New Mail Order Program); \$40 copay (up to 100-day supply for refills through the Mail Order

Program)
Behavioral health — see Medical Plans Comparison Grid for mental health and substance abuse copay changes

Kaiser Permanente Senior Advantage Plan Medicare HMO

Urgent care — \$15 copay per visit, in a Kaiser service area; \$50 copay per visit, out-of-area, waived if admitted to the hospital as an inpatient within 24 hours for the same condition

Allergy testing visits — \$15 copay

Outpatient surgery — \$50 per procedure (correction to 2004 Medical Plans Comparison Grid) Hospital inpatient admission - \$250 per admission Prescription drugs:

Generic — \$10 copay (up to 30-day supply, at a Plan pharmacy or new Mail Order Program); \$20 copay (up to 100-day supply for refills through the Mail Order Program)

Brand name/compounded — \$20 copay (up to 30-day supply, at a Plan pharmacy or new Mail Order Program); \$40 copay (up to 100-day supply for refills through the Mail Order Program)

Chiropractic services — \$10 copay per visit

Behavioral health — see Medical Plans Comparison Grid for mental health and substance

Please note: The deadline for waiving medical coverage is Nov. 9, the end of Open Enrollment. There will not be an extended period for this election.

abuse copay changes

Open Enrollment is Oct. 20-Nov. 9 Retiree health care premiums

(Continued from preceding page)

Retiree premiums

Premiums for retirees enrolled in the Sandia Basic PPO Plan, the Sandia Intermediate PPO Plan, and the Sandia Top PPO Plan are not increasing for 2005. Premiums are increasing slightly for certain populations enrolled in the CIGNA Network POS Plan and/or the Lovelace Senior Plan. For those enrolled in the Kaiser HMO plans, the Medicare rate is actually decreasing slightly, while the non-Medicare rate is increasing.

While health care premiums for certain plans are increasing for 2005, the increase is smaller than the one experienced in 2004. Since annual premium increases are tied to health care cost projections, you might think this means that the projected 2005 health care cost increase is smaller than that experienced in 2004. This is not the case. The reason for the smaller increase in 2005 premiums is because overall costs for 2004 are not expected to rise as much as Sandia had projected. Sandia is therefore able to pass on a smaller premium increase to you in 2005.

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 will not pay a premium-share for your medical coverage for 2005.

If you retired after 12/31/94 but before 1/1/03 you will pay 10% of the full premium for 2005. The following chart outlines the current and new premium-share amounts (effective Jan. 1, 2005) for those employees who retired after 12/31/94 and before 1/1/03:

		Moi	nthly F	remiu	ım Ra	tes					
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	
		2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
Medicare		\$17	\$17	\$19	\$19	\$23	\$23	\$15	\$16	\$24	\$23
Medicare	Medicare	\$33	\$33	\$38	\$38	\$46	\$46	\$29	\$31	\$48	\$45
Medicare	Non-Medicare	\$59	\$60	\$69	\$69	\$76	\$76	\$67	\$68	\$62	\$68
Non-Medicare		\$43	\$43	\$50	\$50	\$53	\$53	\$52	\$52	\$38	\$46
Non-Medicare	Medicare	\$59	\$60	\$69	\$69	\$76	\$76	\$67	\$68	\$62	\$68
Non-Medicare	Non-Medicare	\$86	\$86	\$100	\$100	\$106	\$107	\$104	\$104	\$75	\$92

The following charts outline the current and new monthly premium-share amounts (effective Jan. 1, 2005) for employees who retired after 12/31/02 and who have . . .

30 or more years of service

			Month	ly Prer	nium F	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	
		2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
Medicare		\$17	\$17	\$19	\$19	\$23	\$23	\$15	\$16	\$24	\$23
Medicare	Medicare	\$33	\$33	\$38	\$38	\$46	\$46	\$29	\$31	\$48	\$45
Medicare	Non-Medicare	\$59	\$60	\$69	\$69	\$76	\$76	\$67	\$68	\$62	\$68
Non- Medicare		\$43	\$43	\$50	\$50	\$53	\$53	\$52	\$52	\$38	\$46
Non- Medicare	Medicare	\$59	\$60	\$69	\$69	\$76	\$76	\$67	\$68	\$62	\$68
Non- Medicare	Non-Medicare	\$86	\$86	\$100	\$100	\$106	\$107	\$104	\$104	\$75	\$92

25-29 years of service

			Month	ly Prer	nium R	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	
		2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
Medicare		\$25	\$25	\$29	\$29	\$34	\$34	\$22	\$23	\$36	\$34
Medicare	Medicare	\$50	\$50	\$57	\$57	\$69	\$69	\$44	\$47	\$72	\$68
Medicare	Non-Medicare	\$89	\$89	\$103	\$104	\$114	\$114	\$100	\$101	\$93	\$103
Non- Medicare		\$64	\$65	\$75	\$75	\$80	\$80	\$78	\$78	\$57	\$69
Non- Medicare	Medicare	\$89	\$89	\$103	\$104	\$114	\$114	\$100	\$101	\$93	\$103
Non- Medicare	Non-Medicare	\$129	\$129	\$150	\$150	\$159	\$160	\$156	\$156	\$113	\$138



The following charts outline the current and new monthly premium-share amounts (effective Jan. 1, 2005) for employees who retired after 12/31/02 and who have . . .

20-24 years of service

			Month	ily Prer	nium k	ates					
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	
		2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
Medicare		\$42	\$42	\$48	\$48	\$57	\$57	\$37	\$39	\$60	\$56
Medicare	Medicare	\$83	\$83	\$95	\$95	\$115	\$115	\$74	\$78	\$121	\$113
Medicare	Non-Medicare	\$149	\$149	\$172	\$173	\$190	\$191	\$167	\$169	\$155	\$171
Non- Medicare		\$107	\$108	\$125	\$125	\$133	\$134	\$130	\$130	\$94	\$115
Non- Medicare	Medicare	\$149	\$149	\$172	\$173	\$190	\$191	\$167	\$169	\$155	\$171
Non- Medicare	Non-Medicare	\$214	\$215	\$250	\$251	\$266	\$267	\$261	\$261	\$189	\$229

15-19 years of service

			MOUL	lly Prer	IIIuiii r	ales					
Retiree	Spouse/Dependent	ent Sandia Basic PPO Plan		Sandia Intermediate PPO Plan		Sandia Top PPO Plan		Lovelace Senior Plan/CIGNA Network POS Plan		Kaiser Permanente HMO	
		2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
Medicare		\$58	\$58	\$67	\$67	\$80	\$80	\$51	\$54	\$84	\$79
Medicare	Medicare	\$116	\$116	\$133	\$133	\$160	\$160	\$103	\$109	\$169	\$158
Medicare	Non-Medicare	\$208	\$209	\$241	\$242	\$266	\$267	\$234	\$237	\$217	\$239
Non- Medicare		\$150	\$151	\$175	\$175	\$186	\$187	\$182	\$182	\$132	\$161
Non- Medicare	Medicare	\$208	\$209	\$241	\$242	\$266	\$267	\$234	\$237	\$217	\$239
Non- Medicare	Non-Medicare	\$300	\$301	\$349	\$351	\$372	\$374	\$365	\$365	\$264	\$321

10-14 years of service

			Month	ly Prer	nium R	ates					
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	
		2004	2005	2004	2005	2004	2005	2004	2005	2004	2005
Medicare		\$75	\$75	\$86	\$86	\$103	\$103	\$66	\$70	\$109	\$101
Medicare	Medicare	\$149	\$149	\$171	\$171	\$206	\$206	\$132	\$140	\$217	\$203
Medicare	Non-Medicare	\$267	\$268	\$310	\$311	\$342	\$343	\$301	\$304	\$278	\$308
Non- Medicare		\$193	\$194	\$225	\$225	\$239	\$240	\$234	\$234	\$170	\$206
Non- Medicare	Medicare	\$267	\$268	\$310	\$311	\$342	\$343	\$301	\$304	\$278	\$308
Non- Medicare	Non-Medicare	\$386	\$387	\$449	\$451	\$478	\$481	\$469	\$469	\$339	\$413

Sandia 401(k) Savings Plans

Although you may make changes to your Sandia 401(k) Savings Plan account throughout the year, not just during Open Enrollment, you may want to take a minute to review your current 401(k) account elections while you're evaluating your other benefit elections. You can view your current contribution elections at Fidelity's NetBenefits or in the My Benefits Summary on Sandia's My Rewards page.

For those of you who have been putting off enrollment in the Sandia 401(k) Savings Plans, this may be the perfect time to learn more and get going on your retirement savings.

401(k) Advantage: Sandia matches $66^2/_3\%$ on the first 6% of employee contribution, after one year of service. This means that if you contribute at least 6% of your paycheck biweekly to your 401(k) account, Sandia will contribute 4% to your account. Enrolling in the plan or changing your elections is easy on Fidelity's NetBenefits website.

Resources:

- www.401k.com (Fidelity NetBenefits)
- Fidelity by phone (800) 240-4015
 - Sandia 401(k) Savings Plans Retirement Webpage (http://www-irn.sandia.gov/hr/benefits/savingsnews/)
- Sandia 401(k) Savings Plans Offices
- Courtney Woods 284-5830
- David Medina 844-0997
- Rebecca Spires 844-9965

Benefits Choices 2005

Open Enrollment is Oct. 20-Nov. 9

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. All of the following actions must be completed by Nov. 9. There will no longer be an extended period for any elections.

- Medical Insurance: You can enroll, change medical coverage, change deductions to pre- or after-tax, add or drop dependents, or waive coverage.
- Dental Expense and Dental Deluxe Plans: Add or drop dependents only
- 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.

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. All of the following actions must be completed by Nov. 9:

- 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: employees

Albuquerque (Mountain Tim	ne)				
Benefits Choices 2005 (Sui	mmary of health care, RSA, VGA, and V	acation Buy)			
October 20 (Wednesday)	Steve Schiff Auditorium	1:00 PM - 2:00 PM			
October 28 (Thursday)	CNSAC Auditorium	9:00 AM - 10:00 AM			
November 1 (Monday)	Area IV Auditorium 9:00 AM – 10:00				
Reimbursement Spending					
October 20 (Wednesday)	Steve Schiff Auditorium	2:00 РМ — 3:00 РМ			
October 28 (Thursday)	CNSAC Auditorium (Video)	10:00 AM - 11:00 AM			
Livermore (Pacific Time)					
	mmary of health care, RSA, VGA, and V				
October 21 (Thursday)	Doubletree Club/Livermore	1:00 PM - 2:00 PM			
Spouses Welcome October 26 (Tuesday)	720 Las Flores Rd. Bldg. 904 Auditorium	1.00 011 2.20 011			
November 2 (Tuesday)	Bldg. 940 Auditorium	1:00 PM - 2:30 PM 1:00 PM - 2:30 PM			
		1.00 PM - 2.30 PM			
Reimbursement Spending	5-11 50 50 50 50 50 50 50 50 50 50 50 50 50				
October 21 (Thursday)	Doubletree Club/Livermore	2:00 РМ — 3:00 РМ			
Spouses Welcome October 26 (Tuesday)	720 Las Flores Rd. Bldg. 904 Auditorium	2:20 pt. 2:20 pt.			
November 2 (Tuesday)	Bldg. 940 Auditorium	2:30 PM - 3:30 PM 2:30 PM - 3:30 PM			
Carlsbad – Via Video Link		2.30 PM = 3.30 PM			
	Market of Children and the fire Mi				
	mmary of health care, RSA, VGA, and V				
October 20 (Wednesday)	NPHA 201-A	1:00 PM - 2:00 PM			
Reimbursement Spending					
October 20 (Wednesday)	NPHA 201-A	2:00 РМ — 3:00 РМ			
Amarillo – Via Video Link (Central Time)				
Benefits Choices 2005 (Sur	mmary of health care, RSA, VGA, and Va	acation Buy)			
October 20 (Wednesday)	Trilab Video Conference Room at Pantex	2:00 PM - 3:00 PM			
Reimbursement Spending	Accounts				
October 20 (Wednesday)	Trilab Video Conference Room at Pantex	3:00 PM - 4:00 PM			
Washington, DC - Via Vide	o Link (Eastern Time)				
Benefits Choices 2005 (Sur	mmary of health care, RSA, VGA, and Va	acation Buy)			
October 20 (Wednesday)	Sandia Washington Office/ Rm. 1001	3:00 PM - 4:00 PM			
Reimbursement Spending	Accounts				
October 20 (Wednesday)	Sandia Washington Office/ Rm. 1001	4:00 PM - 5:00 PM			
Nevada (Pacific Time)					
Benefits Choices 2005 (Sur	mmary of health care, RSA, VGA, and Va	acation Buy)			
November 4 (Thursday)	Nevada Support Facility (NSF) Great Basin Conference Room N. Las Vegas, NV				
Reimbursement Spending	Accounts				
November 4 (Thursday)	Nevada Support Facility (NSF) Great Basin Conference Room N. Las Vegas, NV	4:30 PM - 5:30 PM			

Benefits Solutions

In partnership with technology.



Benefits meeting schedules: retirees

Albuquerque (Mountain Tim	ie)		
Benefits Choices 2005 - No	on-Medicare (Summary of health care plan in	formation)	
October 21 (Thursday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Crest Room	8:30 AM - 9:30 AM	
October 27 (Wednesday)	Mountain View Club* KAFB, 9310 Club Rd., Bldg. 22000	8:30 AM - 9:30 AM	
November 3 (Wednesday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Crest Room	1:00 - 2:00 PM	
Benefits Choices 2005 - M	edicare-Primary (Summary of health care pla	n information)	
October 21 (Thursday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Crest Room	10:00 AM - 11:30 AM	
October 27 (Wednesday)	Mountain View Club* KAFB, 9310 Club Rd., Bldg. 22000	10:00 AM - 11:30 AM	
November 3 (Wednesday)	MCM Elegante Hotel (formerly the Holiday Inn) 2020 Menaul Blvd. NE, in the Crest Room	2:30 - 4:00 PM	
Livermore (Pacific Time)			
Benefits Choices 2005 -No	n- Medicare (Summary of health care plan int	formation)	
October 21 (Thursday)	Doubletree Club/Livermore 720 Las Flores Road	9:00 AM - 10:00 AM	
Benefits Choices 2005 - Me	edicare-Primary (Summary of health care pla	n information)	
October 21 (Thursday)	Doubletree Club/Livermore 720 Las Flores Road	10:00 AM - 11:30 AM	
Nevada (Pacific Time)			
Benefits Choices 2005 – No information)	on-Medicare and Medicare (Summary of heal	th care plan	
November 4 (Thursday)	Nevada Support Facility (NSF) 1:30 Pm - 3:00 Great Basin Conference Room N. Las Vegas, NV		

^{*}Take immediate left after entering Wyoming Gate and follow road.



Feedback Another benefit: Vanpooling

Q: I often see large commuter vans with government license plates and the SNL logo on the doors. They are similar to the type of vans park & ride operators' use at the air-



Source: Puget Sound RidePool

gram and we h

ports. What are these vans and can I ride one if I want to carpool? I think they go to & from the South Valley/Isleta area but I am not sure of that. Are they SNL-owned carpool vehicles? If so, how does one go about getting one if one does not currently travel my way?

A: Your question is a timely one. With the price of gas increasing and the parking issues here, alternative commuting is a good option. Sandia does not own any vehicles that serve as commuter vans. However we do have a healthy carpool program and we have several vanpools that service outlying areas. There are vanpools that run from south of Albuquerque to Sandia Labs. You can contact Debbie Moore at 844-RIDE to get details

about costs and contact information. In fact, she can also answer your questions on other forms of alternative commuting.

— Larry Clevenger (3300)



ROWS AND ROWS of cars mean parking blues, but officials promise it's about to get better.

(Photo by Randy Montoya)

Those Parking Blues: (Some) relief is on the way

By John Zavadil (10870)

Every day, some 10,000 people working in Tech Areas 1 and 4 compete for a limited number of parking spaces around the site. Parking at Sandia has been a challenge for decades, but a "perfect storm" of events has made things even tougher in the last few years. Expanding programs, a spike in construction, heightened security considerations, and a lack of interest in the use of alternative transportation are forcing people to park farther and farther from their offices.

The strain is showing. People are parking illegally, even getting into shouting matches over spaces. The parking lots around Bldg. 802 and the TTC are particularly overloaded.

Well, Corporate Architect Roy Hertweck (10853) and Civil/Traffic Engineer Consuelo Silva (10861) feel your pain. And they're leading the Facilities Management and Operations Center's efforts to do something about it. Several separate projects are under way to add approximately 800 parking spaces in the next several weeks:

- An extension to the east end of the Bldg. 887 parking lot (the old water tower lot) will add 258 spaces.
- Two new lots in the block north of Bldg. 701 — one at 18th Street and H Avenue and another at K Avenue and 20th Street — will add
- The east end of the Bldg. 825 (Steve Schiff Auditorium) parking lot will be expanded, adding 25 spaces.
- New parking lots on Air Force land west of Bldg. 894 will add 334 spaces.

More lots are in the works to add approximately 500 spaces in fiscal year 2005:

- The southern edge of the Bldg. 825 parking lot will be expanded to add approximately 310 spaces.
- A new lot west of Bldg. 956 will add approximately 170 spaces.
- The Photovoltaic parking lot at F Avenue and 12th Street, a dirt lot already in use, will be paved and reconfigured to provide more orderly and safe parking, adding about 30 spaces in the process.

When the new MESA facilities come on line in 2006, that project will also build two large lots south of Bldg. 897 that will hold another 500 cars and improve traffic circulation in the area. Roy and Consuelo are even considering the option of building a multistory parking structure somewhere in Tech Area 1, but that probably won't be funded until 2010.

That's the good news.

And now the bad news

The bad news is that the best parking sites remaining in Area 1 are also the best building sites. "This is the largest period of construction growth that Sandia has ever had," says Roy. "The available land area for parking or development is shrinking. All current parking lots are potential building sites because of the lack of available land near Tech Area 1."

One prime lot is already gone. The parking lot south of the Thunderbird Café has been permanently closed, eliminating about 100 spaces to make room for three new buildings. Other parking areas may be used as temporary laydown areas for construction projects. MESA is transforming the southeast corner of Tech Area 1. Seven smaller "general plant project" buildings, or GPPs, will be built in Tech Areas 1 and 4 in FY05. Other projects in FY06 and beyond may need to be sited on existing parking lots. These new buildings will

change the distribution of people around the site, another variable to be considered in planning for future parking lots.

"The security requirements of the limited area force parking to the perimeter of the sites," explains Roy. "There are spaces available, but they're away from the population centers. We're building more square footage in central areas to respond to programmatic needs, and that's displacing existing parking and pushing new parking lots out. People will have to keep an eye open for new places to park and accept the painful idea of a longer walk from other parking areas. You might say that we don't have a parking problem we have a walking problem."

"People want convenience, but we can't give that to them all the time," agrees Consuelo. "Given the geometry of the site, we can never provide front-door parking service for everyone. People who work in the middle of the tech areas will have to walk."

Some Sandians have come up with clever ways to shorten their commute — using rollerblades, scooters, and bicycles to speed the trip from their cars to their offices. That's great, but Consuelo and Roy urge pedestrians and drivers to take extra care. "The last thing we want is for someone to get hurt," says Roy.

"The bottom line is that we will continue to do everything we can within the constraints of our site and the funding conditions," concludes Consuelo. "We understand this is a frustrating situation for everyone, and we really are working to find the best parking solution possible."

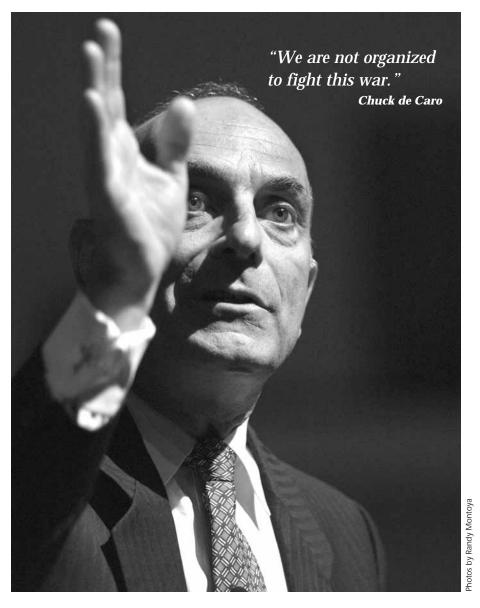
You can see the latest map of current and planned parking locations at the Facilities traffic construction web site, http://www irn.sandia.gov/facilities/esh/traffic_const/ trafficmain.htm.

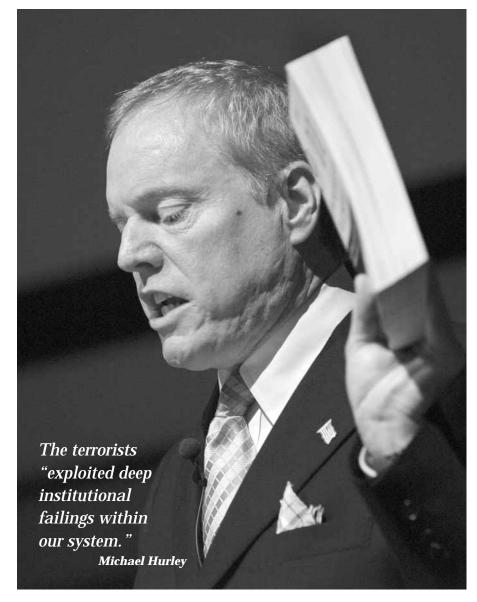
Sandians display work in solar, photovoltaics at annual Solar Fiesta



SEVERAL SANDIANS played active roles in last weekend's annual Solar Fiesta held at the Indian Pueblo Cultural Center. In the photo at left Sandia employee Terry Wilson (6218) tells Albuquerque resident Polly Lydens about some of the Labs' activities in the area of solar and photovoltaics at a Sandia booth. In the photo below, Sandian Marlene Brown, a long-time supporter of photovoltaics (see related article on page 13), gives cookies baked in a Sandia solar oven to young visitors. The little girl to the left is Lindsay Irwin, daughter of Lawrence Irwin (5743).







Speakers address 9/11 and Al Qaeda

US must master information age warfare to bring down Al Qaeda, speaker says

By Bill Murphy

"Respect the threat."

That's the starting point in effectively engaging and defeating Al Qaeda, says former CNN newsman and media expert Chuck de Caro, an authority on the way a pervasive global media is shaping the geopolitical landscape.

De Caro, in a highly charged two-hour presentation/workshop at the Steve Schiff Auditorium sponsored by Sandia's IORTA group, said, "These guys [Al Qaeda] are smart — as smart as us — and they use the tools of information age better than we do."

In his presentation, called SoftWar, de Caro emphasized the role the global media, particularly the television media (which he defines as globally distributed moving pictures, whether they be based on satellite TV or web-based video) play in shaping the reality that people perceive. And Al Qaeda and other terrorist groups, he said, have been very effective in using media to convey their message. For example, he said, rock video, with Arabic rock music playing over images of death and destruction, has been used by terrorist groups as a recruiting tool for suicide bombers.

"Unfortunately, the anti-rock video production company hasn't been invented yet," de Caro said.

"The way to beat television is with better television."

To demonstrate the power of television in defining reality, he used a number of examples, including the Rodney King police abuse scandal in Los Angeles. The time from the beginning of the encounter to its conclusion was 45 minutes; of that time, nine minutes were captured on tape by a neighbor. Of those nine minutes, perhaps 30 seconds were used by global broadcast media. It was that 30 seconds that defined the encounter.

The King incident, he said, contained many of the elements that frequently come into play in the media environment: the image of police officers clubbing a man when he is down, de Caro said, makes powerful "B-roll" — the TV term for video that is used to illustrate a story. The story also demonstrated the arbitrariness of "quality roulette." It so happens that among the nine minutes of video of the incident, one sequence showed King striking an officer. But the video was smeared because the camera moved just at that moment. Result? Bad quality video. And TV doesn't usually use bad video, especially when there is some good video to use instead.

"Do you see how television can tend to distort reality?" de Caro asked. De Caro also noted the sometimes-arbitrary ways the media can shape perceptions. Was there a camera crew on the scene? If yes, that is one reality. If no, that is another reality entirely. Who was on duty at the network when the video came in? Different editors make different calls about which images to use. Those decisions shape reality.

(Continued on next page)

Key 9/11 Commission staff member addresses findings, recommendations

By Bill Murphy

The weight of this sad time we must obey, Speak what we feel, not what we ought to say. King Lear William Shakespeare

Citing these words, Michael Hurley, a key member of the 9/11 Commission staff, promised a Sandia audience last week that he would "speak what I feel, speak from the heart about the 9/11 commission and the challenges facing our country."

Hurley is perhaps uniquely qualified to offer insights on the commission and its findings. A CIA agent for 21 years, he spent the 14 months after 9/11 living in remote sections of the Afghan countryside, where he led efforts to track down Osama bin Laden and his lieutenants. At the request of commission leaders Tom Keane and Lee Hamilton, Hurley was seconded from the CIA to serve as the commission's senior counsel and director of its Counterterrorism Policy Review. He authored many sections of the final 9/11 report, and edited the entire work, which has been praised for its literary merits as well as its rigorously factual recounting of the events and issues surrounding the 9/11 attacks.

Speaking to perhaps 200 Sandians in the Steve Schiff Auditorium, Hurley said of the commission report: "It should, in my view, be mandatory reading for every adult in the country and taught in every high school and college. . . . this is not, by the way, to boast of the brilliance of the report; you will determine its merits, if it has any. . . . Professionals like you [Sandians] have a special duty to pore over this book, to understand the story of 9/11 and carefully review what the United States government did against the threat of terrorism in the years before the 9/11 attacks and has done since then to make Americans safer and more secure, to evaluate critically whether we are on the right path today, and if we are not to help determine how to get on it and stay on it."

Hurley said he thinks it was "a miracle" the 9/11 Commission got off the ground, given the potential political landmines such a commission would have to negotiate. But, he added, Chairman Tom Keane, former Republican governor of New Jersey, and co-chairman Lee Hamilton, a former distinguished Democratic representative from Indiana, were "magisterial."

The leaders set the tone of the commission and its proceedings by example, with the result that, ultimately, "the voice of the report is the voice of fact. There is no caricature, no innuendo in it." Being involved in the commission and its work, Hurley said, gave him a sense that he was "looking through a keyhole of history": The commission, its processes, and its findings would become scribed in the national memory.

America, Hurley said, was "sleepwalking" as the 9/11 threat gathered and coa-(Continued on next page)

Marlene Brown uses work-gained expertise to install own photovoltaics

By Chris Burroughs

How would you like to have a \$4 to \$5 electric bill? That's what Marlene Brown (5731) has been paying for the past two months since she installed a new photovoltaic solar system at her university-area house.

"It's been awesome," she says.
"The meter spins backward all day when I'm not home, feeding power into the grid."

After working extensively with photovoltaics for the past 15 years — diagnosing, analyzing, and evaluating hundreds of photovoltaic systems as part of her old job in the Sandia Photovoltaics Systems Group, including work with the Navajo Tribal Utility Authority —

she decided to install one at her own home. The system provides 1,200 watts of electricity.

She acquired a system valued at between \$6,000-\$8,000 for approximately \$3,000. The new system is not your father's photovoltaic or solar thermal system from the 1970s. Most of the older systems you see on houses throughout northeast Albuquerque were connected to hot water tanks and produced only hot water, not electricity. The older photovoltaic systems were not tied to the electric grid.

Marlene's new system is tied directly to the utility and does not use batteries, like the standalone systems she worked with on the Navajo Reservation. During sunny days, the system is constantly producing electricity. When her electricity use is low — like when she is not at home — electricity is being fed into the grid. When she uses more electricity than she produces, she draws from



KEEP ON THE SUNNY SIDE — Marlene Brown stands on photovoltaic solar panels at the Arizona Public Service Company test facility in Phoenix. She has fitted her house with similar panels. She now spends next to nothing a month on electricity.

the grid. At night, all her electricity comes from the grid because she does not have any battery storage.

She says that grid-tied photovoltaic systems are only recently legal. The utility requires a specific type of inverter that gives the utility the same quality of power it generates. In other words, the utility — in this case, PNM — won't accept "dirty" power.

Her electric bills for July and August have been \$4 and \$5 respectively, down considerably from her average of \$25. She used no kilowats from the grid in September. Part of her bill is a \$3 interconnection charge, a permanent charge that can't be eliminated from the bill. For July and August she used only \$1 and \$2 worth of electricity and zero in September.

Marlene, trained as both an electrical engineer and an electrician, decided to make installation of her photovoltaic system a learning experience for her friends. She invited several of them — most of whom knew nothing about electricity except how to turn on a switch — to join in her adventure.

One Friday night in May eight women came to her house where she gave a two-and-a-half hour seminar on the basics of photovoltaics and safety issues. The next day the women started the installation at 7 a.m. and finished by 6 p.m.

"My friends loved it. It was a positive and powerful experience," Marlene says. "The idea was to teach people something new."

Among the installers were teachers, students, a few electrical engineers, an electrical contractor, and others — a diverse group, she says. One was Shravanthi Reddy, a University of Texas PhD chemical engineer-

ing student who served as an intern at Sandia during the summer.

Marlene did "a lot of work" in advance, mounting boxes and conduit and preparing the roof for rack mounting. The women did the entire installation. They installed eight polycrystalline photovoltaic modules on two metal mounting racks. They also did all of the wiring. All the work was safe and supervised.

Before the system could run continuously, it was inspected by both the City of Albuquerque and PNM.

Marlene says working together with her friends to install the systems was great fun.

"The women really took care of each other," she says. "They handed bottles of water and juice to each other while working on the hot roof and worked in sync. They all felt empowered by the experience."

Defeating Al Qaeda

(Continued from preceding page)

In the information age, Osama uses the global media and the power of images to sell his vision, De Caro said. And that vision is no small one: Osama is a Salafist, de Caro said, one who seeks to resurrect or restore the caliphate, the union of political and spiritual leader under one individual. Osama seeks to re-unite all of Islam, and from that position to further challenge the primacy of the West.

De Caro said the 9/11 attacks should be seen not just as terrorist incidents but as Osama truly sees them: as a marketing event. He is – still – using the images of the burning and collapsing towers to show the fence sitters in the Islamic world that Islam can engage a superpower and leave its most important landmarks in ruins.

"This guy doesn't have little goals; he has big goals. Do you see why this man is dangerous and is worth fighting? He is serious. And we need to stop him."

De Caro said the US approach to fighting the war on terrorism stems out of its primacy in machine-age warfare.

All of the nation's current national security institutions, de Caro noted, were created or took their current form after World War II: The Central Intelligence Agency. The National Security Council, the Department of Defense, the Air Force, the current Joint Chiefs structure.

"You tell me, if we were inventing these institutions today, do you think they'd look the same? \dots We are not organized to fight this war."

Holding up a Coca Cola can, de Caro asked rhetorically, "Do you know how much they spend around the world selling this product every year? \$1.9 billion. And do you know how much the US spends on information age communications around the world each year? \$500 million."

The nation, he said, needs to get much more sophisticated and proactive in "marketing" its ideas.

Using tools familiar to the media and marketing industries — particle marketing, counter-programming, market saturation, and other approaches — the US needs to engage the terrorists in the war of ideas, in the war to shape perceptions — and reality. And — most importantly — the US information effort needs to be integrated. Government agencies across the entire government need to be on the same page, working together to reinforce and amplify each other's efforts.

In the information age, he said, information warfare ought to take precedence, with kinetic capabilities (steel and fire) an adjunct to that. (Not that "kinetic force isn't needed. De Caro said the idea of waging information warfare against Al Qaeda is to cut off the group from its constituency. Then you kill it.)

In the three years since 9/11, has the US become more sophisticated in waging "softwar?" de Caro asked.

"What have we done to counter Al Qaeda in the war of ideas? Nada. Because we don't think in terms of information-age warfare.

"Television is expensive," de Caro said. "But not as expensive as a B-2 — or a fleet of B-2s." $\,$

Understanding 9/11

(Continued from preceding page)

lesced. He offered a litany of increasingly bold and violent attacks by Al Qaeda and other terror groups spanning several presidential administrations. Those attacks — the Marine barracks in Lebanon, the first World Trade Center attack, Khobar Towers, the USS *Cole*, and others — did not spark a general US response and led to no fundamental changes in the way Americans lived their lives or safeguarded their institutions.

"To launch their attack, the 9/11 terrorists," he said, "exploited deep institutional failings within our system."

Hurley cited a number of failings identified by the commission, stating that "the most important failure was a failure of the imagination." Our leaders, he said, didn't understand the gravity of the threat we faced and never came to grips with the reality — or the implications — of previous suicide attacks.

The attacks also exposed failures of policy and capabilities - the US simply didn't have in place the mechanisms to counter the terror threat. Before 9/11 the Department of Defense was not engaged in the terrorist threat, and the CIA, while involved, had only limited capabilities to carry the fight to the enemy. (Hurley said that in 1998 CIA Director George Tenet "declared war" on Al Qaeda, but said no one else in Washington seemed to be listening.)

The gravest failure, he asserted, was the lack of coordination among federal agencies:

"We need to break with the 'cult of secrecy' that prevailed during the Cold War. . . . Agencies didn't share information. . . . In other words, we handicapped ourselves "

Hurley stressed that foreign policy must be brought back into the nation's efforts at counterterrorism, citing particularly the need to work closely to help President Musharraf succeed in Pakistan and help the Saudi kingdom transition to a 21st century state.

Hurley told Sandians that, if they read the report, they will be "outraged and moved beyond belief." For example, he said, read the account of the battle for Flight 93 over the skies in Pennsylvania. "It was one of the most selfless and valorous acts in American history."

The 9/11 report, Hurley said, offers perhaps the broadest and deepest examination of the US government and its decision-making processes that has ever been undertaken.

"It is inconceivable that such a study could be published anywhere in the Middle East," he said, a fact that will not be lost on that region's reformers and intelligentsia.

He emphasized the nature of the enemy by citing the words of Ramzi Youssef, convicted in the first World Trade Center attack. Youssef, he said, "testified that they wanted to see 250,000 Americans dead in the streets. Did you hear me? Two hundred and fifty thousand."

That, said Hurley, is the threat the US faces, a threat that has announced itself in blood.

"We simply cannot ignore the danger."

Mileposts

New Mexico photos by Michelle Fleming



Jose Montoya 30 2132



30 14409



C. Wayne Burton 25 4135



Leonard Duda 25 5733



Gordon Smith 25 12870



Robert Bugos 20 2338

Recent

Retirees



Michael Eaton 20 4152



Janice Gauna 20 10000



Mike Edenburn 35 9745



Orlando Griego 20 10827



Robert Glass 25 2952





10843

Jo Cunningham 15 10251



Diana Helgesen 20 15419



Camille Gibson 15 10254



3501

Victor Lovato

20

Scoti Hagerman 15 1312



Mark Savage 15 1644

Sun	f/lon	Tue	Wed	Thu	Fei	Sat
-	3	4	54 4	6	47	8
hi	c n	nnn	thi	nt	he	190
	24	25	26	27	28	143
30	31	2.2	2.0	21	1/2	129

This monthly column highlights Sandia Lab News items from 50, 40, 30, 20, and 10 years ago, but each column does not necessarily include items from each decade.

50 years ago... Sandia news and features in the '50s were decidedly more "down home" and sometimes downright trivial. A sampling from the Oct. 8, 1954, issue (slightly condensed here for space considerations): Norman McGuire is proud owner of a new Pontiac station wagon, blue and white. G. C. Hollowwa's chrysanthemums and dahlias took four blue ribbons at the State Fair. Nancy Dill, daughter of Bob Dills, has been named co-editor of the Jefferson Junior High School newspaper. And how about this for some early-

day honesty? Employee Janet Gober, replying to this frivolous "inquiring reporter" question: "Other than yourself, is there anyone you'd like to be?" "I'd like to be Dorothy Parker, the writer," she replied. "She's witty, she's glamorous, and she hates men! If I could change places with anyone, I'd like to be a cynical writer like she is." (Janet definitely had a jump start on it.)

40 years ago... The Oct. 23, 1964, Lab
News contained a story about Sandia-provided
bicycles for getting around Tech Area 1.
Although individual departments had bikes
assigned for their own members in previous
years, the company had made the bikes available for everyone's use about three years earlier. The article said the system had become
"an instant success." But distribution and other
problems eventually led to its demise. The
company bicycles were supposed to be parked
only in provided racks near major buildings,
but the story went on to say that the Sandian
responsible for maintaining them would often



SANDIA'S vertical axis wind turbine, mounted on top of Bldg. 802, in 1974.



BICYCLES provided a fast, shoe-leather-saving way to travel the 110 acres of Tech Area 1 in the early '60s.

find them inside and behind buildings, and even hidden in the landscaping.

30 years ago . . . The Oct. 25, 1974, Lab News was the first to show a photo of Sandia's vertical axis wind turbine, mounted then for testing atop Bldg. 802. Featuring twin 15-foot blades, the turbine was cable of producing about three horsepower in a 20-mile-an-hour wind. The picture was allowed to be published only after the Labs had filed a patent application covering several turbine features. That issue also discussed how Sandia would operate under the new Energy Research and Development Administration (ERDA). ERDA basically was replacing the old Atomic Energy Commission (AEC) and taking on more energy-related R&D projects. (ERDA was later superseded by the Department of Energy.) —Larry Perrine

Feedback What are criteria for a trades position?

Q: What are the criteria (i.e., education, skills, previous experience) for assignment to a trades position? I was wondering where I could find information, such as that provided on the Web for a technologist position http://www-irn.sandia.gov/HR/Compensation/level.html. Is there any Web info on the qualifications needed for a skilled trades assignment?

A: There are multiple disciplines (e.g., electrical, machining, mechanical measurements, plumbing, structural, heavy-equipment operator, and others) within the Trades Plan at Sandia. The knowledge, skills, experience required would, of course, depend upon what area may be of interest to you.

Exhibit XII of the Metal Trades Council (MTC) collective bargaining agreement contains a description of the Trades Plan along with a list of the Trades jobs. Additional information regarding the Advanced Manufacturing Trades Training Program (AMTTP), Career Development Program, and Production Trades Training Program (PTTP) can also be found in the MTC collective bargaining agreement.

The MTC collective bargaining agreement can be accessed on the Web at www-irn.sandia.gov/HR/labor/agreements.htm. The AMTTP has a Web site at http://mfgtech.sandia.gov/ 1400_int/1400_int_AMTTP.htm. Resources for additional information include your HR Consultant, Employee & Labor Relations, or a member of the MTC leadership (http://www-irn.sandia.gov/HR/labor/mtc.htm).

— BJ Jones (3500)

Look past the eyes and you might find something that takes your heart away

By Iris Aboytes

We wake in the morning, brush our teeth, get dressed, and get ready to go to work. We laugh, we cry, we eat, and, yes, we also complain. Without skipping a beat, we go about our daily activities. What if some of these things were not possible on our own?

Meet two special-needs individuals who need a little help. Tanya Glidewell is the 32-year-old daughter of Don Glidewell (6923) and his wife Frankie. Geoffrey Eatough is the 13-year-old son of Michael Eatough (14405) and his wife Tonya.

Tanya is severely handicapped and has no verbal communication skills. Like some of us, Tanya gets on the bus every morning and goes to her "job." She rides the bus to her day program at Adelante Development Center, Inc. Adelante's mission is to assist and support people with disabilities in discovering and implementing their personal goals.

Tanya's job consists of going to various therapies and building self-help skills to help her lead as normal a life as possible.

When Don and Frankie go out for the evening (Don says they have Lady Lobo season tickets) they don't feel guilty leaving Tanya. They take her to Alta Mira Respite Home, a United Way agency that provides overnight and weekend care to adolescents and adults with developmental disabilities. "She loves it," says Don. "They have all sorts of activities that they do. They even dance."

TANYA GLIDEWELL waits for the bus to take her to Adelante.

"In most families if the mom is happy, everything is OK," says Frankie. "In our family if Tanya is happy, everything is OK.'

Don was career Air Force and was stationed in Wisconsin, California, and Illinois before coming to New Mexico. Stationed at Kirtland, the family found United Way agencies that could help his daughter lead a normal life.

In spite of his being offered two commands, Don decided to retire from the Air Force, work for Sandia, and provide stability to Tanya and the rest of the family.

Geoffrey is Mike's best friend. "Geoffrey is a quadriplegic spending most of his life in a wheelchair and requires assistance with every aspect of life," says Mike. "Though born with cortical blindness, Geoff has taught himself to 'see.' When I walk into the room, he says, 'Mike! Mike! Mike!'

Geoffrey has cerebral palsy. By the age of 10, he had had 10 major surgeries. Many were performed to lengthen muscles to relieve the pain from his muscles contracting. Each surgery kept him in a body cast for three months.

Geoffrey goes to regular school. "We just want kids to treat him like a regular kid," says Mike. "He goes to the bus stop, and it is great to see other kids giving him high fives."

"Families Plus, a small United Way agency, much like Alta Mira provides personal care and respite help for Geoffrey so Mike and Tonya can go to work. "The agency provides support not only to the client but to the whole family," says Tonya. "They have wonderful caregivers who are highly trained and help the client with daily goals such as brushing teeth, taking baths, going to therapies, etc. Geoffrey's Families Plus care provider even went to Easter Seals camp with

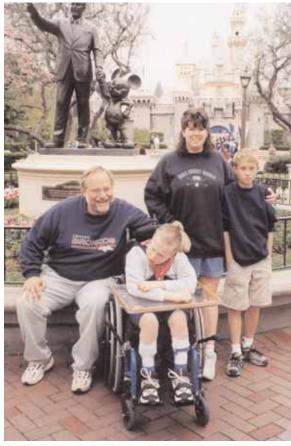
Geoffrey loves music, the "Wiggles" (children's program), bowling, going to school, riding roller coasters ("more," he says, as it stops), and Tigger. He looks forward to going to Easter Seals camp, Disneyland, and the beach. Though Geoffrey cannot speak much, he has lately begun to string three words together at a time. He is great at saying,

"When I have a bad day at work," says Mike, "I think of Geoffrey and how he is trapped in a body unable to tell us how his day was and how hard it was on him. That puts all of life into perspective."

"More goldfish, please."

Both sets of parents credit United Way agencies with helping them and their families lead as normal lives as possible. Both Don and Mike describe their children as happy, having a wonderful sense of humor, and being

"I don't think most Sandians realize how close to

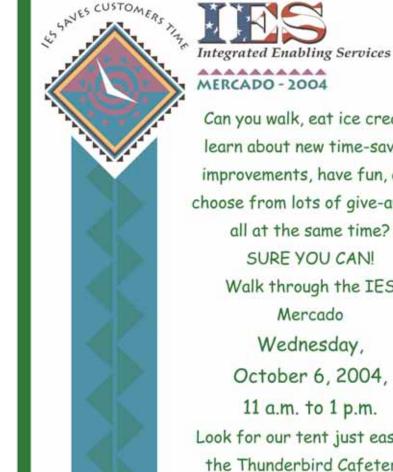


GEOFFREY EATOUGH and his family at Disneyland this summer.

home their generous support hits," says Mike. "Without them our family would find life very

"United Way agencies help many people every day, and they have directly improved the quality of life for my daughter and my family,' says Don. "I want to personally thank everyone who has so generously contributed to United Way.'

For more information on United Way and the various agencies go to www.uwcnm.org.



MERCADO - 2004 Can you walk, eat ice cream, learn about new time-saving improvements, have fun, and choose from lots of give-aways all at the same time? SURE YOU CAN! Walk through the IES Mercado Wednesday, October 6, 2004, 11 a.m. to 1 p.m. Look for our tent just east of the Thunderbird Cafeteria.

Schedule for Sandia's 2004 ECP/United Way Campaign kickoff event: 'Books Are Fun' Book Fair

Monday, Oct. 18 Bldg. 811

Monday, Oct. 25 10 a.m. -2 p.m. Thunderbird Cafe

Monday, Nov. 1 Time TBD Location TBD

Tuesday, Oct. 19 8 a.m.-4 p.m. Bldg. 811

Tuesday, Oct. 26 10 a.m. -2:00 p.m. Thunderbird Cafe

Tuesday, Nov. 2 Time TBD Location TBD

Wednesday, Oct. 20 8 a.m.-4 p.m. Bldg. 811

Wednesday, Oct. 27 10 a.m. -2 p.m. Thunderbird Cafe

Wednesday Nov. 3 Time TBD Location TBD

Thursday, Oct. 21 8 a.m.-4 p.m. Bldg. 811

Thursday, Oct. 28 10 a.m. -2 p.m. Thunderbird Cafe

Thursday Nov. 4 Time TBD Location TBD