

Sandia leads three-year alliance with companies interested in nanoparticle coatings, films



STOP AND SMELL THE FLOWERS — Nanoparticle-enhanced coatings are making their way to consumer products, including flat-panel TV screens like the high-definition monitor seen here with images almost real enough to touch. (Photo by Randy Montoya)

Goal to advance manufacturability and factory-scale processing

By John German

At the truly tiny scale of nanoparticles, attractions and repulsions among atoms and molecules often overwhelm the more ordinary forces at play in the larger-scale world.

Such nanoscale forces, driven in some cases by the momentary orientations of electrons, become a problem when the goal is to keep particles evenly dispersed in liquid — a challenge for manufacturers who want to make products featuring nanoparticle-enhanced films or coatings. Nanoparticles suspended in solvents at high densities tend to clump while the coating is drying, negating the benefits of their nano-sized ingredients.

Improving the processing and manufacturability of such coatings and thin films is the primary goal of a research collaboration that began last spring among Sandia and a half dozen major companies.

The Nanoparticle Flow Consortium includes 3M, BASF, and Corning, among others. Sandia serves as the hub for the three-year, \$2 million cooperative research and development agreement.

(Continued on page 4)

Refurbished Z open for business



After a \$90 million refurbishment project, Sandia's Z machine is operational again. Get a behind-the-scenes look at this industrial-scale project in a photo spread on pages 6-7.

'Total compliance' attained in no-notice environmental inspection

Accomplishment a first for federal facilities in New Mexico

By Debi Angeli for the *Lab News*

A "no-notice" inspection conducted by the New Mexico Environment Department (NMED) produced outstanding results for Sandia. In fact, the inspection of the Labs' hazardous waste operations resulted in a first-ever "no notices of violations."

According to an NMED manager, this was the first time since NMED has been conducting inspections that any federal facility was found to be in total compliance.

The annual no-notice inspections are mandated by federal law. NMED personnel only notify Sandia's environmental program managers of the inspection when they are just outside the Kirtland gate and about to enter Sandia facilities.

This year, the 14-member team arrived in early December for a two-week inspection of Sandia's five technical areas and selected off-site locations involved in hazardous waste activities. Some of those areas were:

- Less than 90-day accumulation areas
- Hazardous Waste Management Facility
- Radioactive Mixed Waste Management Facility
- Manzano bunkers

(Continued on page 4)

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Sandia teams with Russian researchers to develop way to determine work readiness for critical ops

Efforts center on facilities with nuclear materials

By Chris Burroughs

Russian researchers, wanting to reduce the number of accidents at nuclear materials facilities in their country, have teamed up with several Sandia human factors and cognition experts to figure out ways to determine on any given day if workers are ready to perform critical operations.

"The Russians came to us seeking help in developing some kind of protocol for assessing human readiness for duty," says Elaine Hinman-Sweeney (6723), who manages Sandia's US-Russian collaborations for the Nuclear Weapons Science and Technology Program. "They want to know what factors might cause a person not to do well at his or her job."

The reason for their concern is that between 1945 and 1999 a total of 22 accidents occurred in nuclear process facilities in the US, Russia, and the United Kingdom, resulting in nine fatalities and amputations in three survivors. One of the most serious was at a nuclear power reactor at Chernobyl in the Ukraine in 1986. Nuclear process facilities include both nuclear weapons laboratories and nuclear power plants where operations involve fissile materials that require physical and administrative controls to prevent critical or near-critical events from occurring.

Human error looms large

Causes for the serious accidents were due primarily to human error and included failure to follow procedures, failure to notice abnormal conditions, communication errors, and inadequate supervisory monitoring of operations. Also causing the accidents were deficiencies



in training, equipment, and processes.

Promoting the joint research were representatives of VNIIEF — a Russian experimental physics laboratory. Russian researchers at St. Petersburg State University have invented a technology that evaluates readiness in people employed in that country's railroad system, looking at immediate skill levels and physiological indicators of emotion and stress resilience. The skill portion is specific to the ability to operate trains.

The Russian researchers want to adapt the same technology to the nuclear materials arena — hence the reason they turned to Sandia human factors and cognition experts for assistance.

Sandia psychologist Courtney Dornburg (12335) says one of the first activities she and Elaine engaged in was to develop a glossary of common neuroscience, cognition, and human factors terms.

"The Russians use some of the same vocabulary as we do, but in our initial conversations, we found that our words really had different meanings," Courtney says. "The glossary put us on the same

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Sandia greens up

Sandia's Fleet Services Dept. 10265 has exceeded fuel and energy efficiency standards set by DOE, one of a few organizations to do so in the nuclear weapons complex. Read about the accomplishment on **page 5**.

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So long, John

After nearly 36 years at Sandia, where he served in many high-consequence positions, Executive VP and Deputy Labs Director John Stichman is poised to begin a long-planned retirement. Find out more about John's plans on **page 12**.

That's that

I came across a website the other day that provides an exhaustive list of obsolete skills – once-vital talents that are now outdated. The site (obsoleteskills.com) lists hundreds of skills that have gone by the boards, some going back thousands of years (flint knapping, mastodon hunting, sword fighting) and some that were the last word in high-tech just a decade or so ago (formatting a floppy disk, mastering a command line interface).

I'm not sure what all this means, but I'm pretty sure it means something. Consider: For millennia, all the things you learned during the course of your life were the same things your children and your children's children would have to learn. You passed along your skill set to them so that they could survive. In the 21st century if your children had to make it based on your skill set, they'd be in a world of hurt. Today, it's like that old line from the Firesign Theater comedy troupe: "Everything you know is wrong."

Wait a minute, you're saying. Isn't that a bit of an overstatement? Maybe, but I ask you this: How much of our mission at Sandia could we accomplish today if all we brought to the table were the skills that prevailed in 1949? Not a lot, I'd argue. (Don't get me wrong – those were great skills, world-shaking skills. But they were different skills.)

In my own case, I'm a bundle – a veritable roiling stew – of obsolete skills. I won't even go there other than to note that a pretty big piece of my personal and dearly bought skill set is rushing headlong into obsolescence. To wit: The other day I was reading *Writing that Works*, a specialty newsletter about business communications, when what do I see right there on the front page but a headline that asks, "Are writers becoming obsolete?" Ouch. If you're still reading this, I guess I'm okay. For now.

In the meantime, anybody for some mastodon hunting?

* * *

Hey, have you been checking out the poll feature on our new *Lab News Interactive* website (www-irn.sandia.gov/newscenter/interactive)? One of the latest ones asked what alternative energy technology the nation should focus on – if it could choose just one. The results didn't surprise me: Solar got about 32 percent support from Sandians, nuclear fission got 25 percent support; fusion got two thumbs up from 16 percent. The other options – biofuels, wind, hydrogen, geothermal – came in with various lower numbers. For what it's worth, I voted for fusion, mostly for its long-term potential. In the shorter term, I'd like to see us really go all-out to revitalize our nuclear industry, implementing 21st century concepts that Sandia has done so much to develop.

* * *

Speaking of energy, I'm going to tiptoe into an area here that may seem political; I hope it's not taken that way. But isn't it nuts, given the wakeup call this country received with the oil embargo in 1973, that in 35 years we haven't made more progress on the road to energy independence? An awful lot of our problems as a nation are tied directly to our need to import billions of dollars worth of oil from not-always-friendly sources. As Sandia's mission evolves, I hope our already substantial role in addressing this paramount national security challenge grows – right along with our evolving skill set.

See you next time.

– Bill Murphy (505-845-0845, MS0165, wtmurph@sandia.gov)

Bob Waters appointed to hazardous materials transport panel

Bob Waters (12347) has been appointed to a three-year term on the Transportation Research Board's (TRB) Committee on Transportation of Hazardous Materials.

The TRB is a division of the National Research Council (NRC), a private, nonprofit institution that provides expertise in science and technology to the government, the public, and the scientific and engineering communities. The NRC is jointly administered by the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. Bob's work on safe and secure transportation of nuclear weapons will allow him to add valuable perspectives to the committee.

Bob received a BS in civil engineering from the University of Kentucky in 1983, MSCE from Tulane in 1987, and MSCE and PhD from Vanderbilt in 1992 and 1993. Prior to joining Sandia in 1993, Bob was a drilling and production engineer for Exxon USA. At Sandia as a staff member and manager, Bob has led a range of complex-wide programs, including management of Sandia's National Transuranic Waste Program in Carlsbad, leadership of Sandia's Risk and Reliability program for WFO customers, leadership of several Sandia/Los Alamos teams for several major NRC vulnerability analysis programs, and development of security programs for DOE and WFO customers.

He currently leads all safety analyses for NNSA's weapons transportation program and leads a project that will transform the way weapons are transported. He has served on many national and international panels studying issues related to nuclear and other hazardous waste management and was part of a team studying the impact of the Chernobyl nuclear accident.

Bob is an adjunct professor of civil engineering at both the University of New Mexico and New Mexico Tech. He is a registered professional engineer and has published more than 40 journal articles, papers, and reports.



BOB WATERS

Management promotions

Henry J. Abeyta from senior manager, Line of Business Director, Global Security Center 6900, to director of that same center.

Ronald A. Farmer from PMTS, Nuclear Reactor Facilities Dept. 1381, to manager, System & Software Quality Engineering Dept. 12341.

Kerry Kampschmidt from manager, Legal Business Development Center 11700, to director of that same center.

Mark Lee from PMTS, Semiconductor Material & Device Science Dept. 1123, to manager, CINT Science Dept. 1132.

Reggie Tibbetts from team lead, Facilities Approval Team Dept. 4234, to manager, Information Security Dept. 4234.

Retiree deaths

Omar H. Heins (age 96)	Jan. 17
Virginia J. Miller (81)	Jan. 18
Palmer L. Nelson (67)	Jan. 21
Warren H. Curry (84)	Jan. 22
Emery L. Chavez (68)	Jan. 26

Sandia LabNews

Sandia National Laboratories

http://www.sandia.gov/LabNews

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Sandia's contribution to United Way



SANDIANS Pam Catanach, left, Mike DeWitte, and Terri Lovato accept the United Way of Central New Mexico Million Dollar Roundtable Award on behalf of Sandia from Helen Wertheim, United Way campaign chair, right.

"We're proud to be a part of giving with our heart," read Mike DeWitte, 3652, from a poem he wrote as he accepted the Million Dollar Roundtable Award from the United Way of Central New Mexico.

Sandia's ECP pledges to United Way were announced as \$3,672,968, making Sandia the community's No. 1 giver again this year. Sandia has been the top donor for 50 years.

Sandia retirees contributed more than \$500,000. In honor of Sandia's 50th anniversary supporting United Way of Central New Mexico, Sandia/Lockheed Martin contributed an additional \$25,000 as an above-and-beyond sponsor of the Albuquerque Family Advocacy Center. — Iris Aboytes

Div. 8000 makes tech staff recruiting a top priority

By Patti Koning

The fiscal year is nearly half over, and Sandia/California is behind its targets for member of technical staff (MTS) hiring. MTS full-time employees are essential to Div. 8000 performing its mission.

“For the past three years we have failed to meet our MTS FTE [full-time equivalent] hiring targets — targets that are based on estimates of affordability,” says Denise Koker (8520). “If we continue to undershoot these targets, we inhibit our ability to execute the mission. We are determined to reverse this trend, and history shows we can do it.”

Div. 8000 VP Paul Hommert has made addressing MTS hiring a top priority. “The nation’s security needs have never been greater, including energy, homeland security, and nuclear weapons. Our missions are increasing, and the nation needs the capabilities resident at the California site. This picture has to change,” he says. “And I’m committed to changing it on my watch.”



ALTHOUGH RECENT HIRING has not met affordability targets, Div. 8000 has hired at these levels in the past. (Note: affordability targets are not available prior to FY2005.)

To that end, Paul asked Denise to assemble a team of senior managers, which includes Art Pontau (8750), Howard Hirano (8960), Bill Even (8220), and Glenn Kubiak (8320). Margaret Quinn, the recently appointed manager of Recruiting, Staffing, and University Partnerships Dept. 8524, is also a member. The team’s short-term goal is to implement changes to increase MTS FTE hiring. The long-term goal is to create a “state change” in how technical staff is recruited and hired.

“The nature of work at national laboratories has been changing for decades, with that change accelerating in the last 10 years,” says Denise. “We simply don’t have the long-term, stable funding from nuclear weapons that we could count on in the past, and new technical grads have lots of opportunities and interest in employment beyond national laboratories.”

This leads to what she characterizes as first-level manager anxiety. Managers are concerned, Denise explains,

that if they make the hire but don’t get, or lose, funding, they are left holding the realignment problem.

“I hear loud and clear that managers are unsure about hiring additional staff if they aren’t sure about their future direction,” says Howard. “We’re asking managers to make ‘faith-based’ hires. We need to find a way to support new hires in the first year so managers aren’t scrambling while people are being trained and waiting on clearances.”

Paul says that while there are many components to the problem, cohesive funding for the first year is one of the bigger aspects. As a first step he’s made available \$500,000 of royalty funding to directors to use at their discretion to ease the first-year transition.

A contributing factor to this challenging problem is that the people Sandia needs to hire are simply hard to find. In the past, national labs hired people with broad capabilities, often just out of college or graduate school with degrees in engineering or science. Today, many roles require more depth and very specific experience.

“It might take a year to find the right person,” explains Denise. “Recruitment and replacement of people lost through attrition is more complex. Trying to time that with funding creates another layer of difficulty. Clearly, a year-round, robust recruiting effort is an essential ingredient for the successful achievement of the division’s technical hiring goals.”

To that end, Sandia depends heavily on the direct participation of technical staff in the recruiting process. The task team identified a key barrier to this participation — technical staff members who are ready and willing to help with recruiting may be prevented from doing so because they don’t have any funding to cover labor time spent on recruiting trips or related follow-up actions.

Margaret and the staffing team have developed a new program to ease that constraint.

“We now have division support available to pay for the labor costs associated with approved recruiting trips, plus time to evaluate, match, screen, and distribute candidates to managers and staffing consultants,” she explains. “We are extremely pleased with this program, which will enable our enthusiastic technical staff members to fully participate in supporting such an important goal for the lab.”

Another issue, one that is not as well-defined, is that the recruit-to-hire process can be long and onerous. Staffing is addressing this with a focused effort on MTS hiring, called the FY08 MTS FTE Hiring Team. The team has two key goals: Identify the key barriers to meeting MTS FTE targets by both center and position and, based on the barriers, implement a set of effective tactical

activities and processes that address the key barriers.

“MTS FTE hires are our priority right now,” says Lori Kiefer (8524). “We’re working to drive real activity all the time, which we think will translate into more hires.”

Margaret notes that while the hiring goals are not being met in terms of numbers, they are being met in terms of quality. More than half of MTS hires come from 25 top schools, as identified by Sandia; 28 percent are from the top three: MIT, Stanford, and the University of California-Berkeley.

Sandia California News

Sandia named a top place for postdocs to work

Sandia cracked the top 10 — twice — in *The Scientist* magazine’s annual survey of the best places to work for postdocs. Sandia/New Mexico was named No. 3 and Sandia/California was named No. 10 out of 110 participating institutions.

More than 3,000 registrants on *The Scientist* website who identified themselves as non-tenured life scientists working in academia or other noncommercial research institutions participated in the survey. Respondents were asked to assess their working environment according to 44 criteria in 11 categories, including quality of training and mentoring, career development opportunities, benefits, and family and personal life.

About Sandia/California, survey respondents said that they were encouraged to attend symposia and conferences with money available to help defray expenses and that the other postdocs came from high-quality institutions. Sandia/California also received high marks for the local community, salary, and benefits.

“We’re really pleased to receive this recognition from *The Scientist*,” says Margaret Quinn, manager of Recruiting, Staffing and University Partnerships Dept. 8524. “We are always striving to make Sandia a great place to work for postdocs and the entire workforce.” The California and New Mexico sites were treated separately, according to *The Scientist*’s survey criteria. This is the first time that either site has been recognized as a Best Place to Work: Postdocs by *The Scientist*.

Feedback

‘Do not call’ lists; the appearance of nepotism; classified ads and contractors

Q: In the past few months, it seems like I am getting more and more solicitation (marketing) calls. Isn’t Sandia on a “do not call” list? Do I have to personally go to the national “do not call” service and sign up my office phone?

A: The “do-not-call” registry is not an option for Sandia as it is only for private residence numbers. A similar list does not exist for businesses.

We can help by blocking calls from specific numbers to a specific Sandia number or to all Sandia numbers if we know the telephone number that is calling. If the calling number shows on your phone, write it down and report the number to our telephone hotline at 505-845-8509.

*** — Lee Byers (09335)

Q: It is the time to think about summer interns including high school students. However, as has been common practice in my division, managers including the VP have routed the résumés of their children and asked if there is any interest. This distribution smacks of nepotism. Anyone hiring such a student could be expected to be viewed in a positive light, even if that is not the intent. One previous summer student from a high-ranking manager always brought up that fact that his father is a manager.

Why do we allow such seemingly inappropriate behavior? Why can’t the student go into the hopper like other students, especially when it is a high school student who doesn’t have

any relevant engineering experience? It just doesn’t look right, and in some cases it isn’t.

A: While not specific to student interns, Sandia’s nepotism policy states “Sandia may hire qualified relatives of employees if the employment does not create an actual or perceived conflict of interest. Relatives are not permitted to work together in a manager-to-subordinate relationship, upward or downward, or in a position where a Sandian could influence the hiring, career development, performance rating, pay rate, or progress of a relative, either as a Sandian or a contractor. For this purpose, ‘relative’ is defined as an employee’s spouse (or those in a close personal or spouse-like relationship), child, or any individual related to the employee or to the employee’s spouse.”

All applicants for the student internship program must meet the eligibility requirements outlined in the Student Internship Resource Guide (SIP). Keep in mind that it is common for employees to receive a résumé from a student or other interested candidate and for the employee to forward that résumé to prospective hiring managers. This is appropriate; however, the sender should identify the proper audience given the potential applicants qualifications and abilities. A blanket distribution of an résumé across multiple organizations is likely not appropriate but a narrow distribution to organizations potentially needing

the ability and skills of the individual may be entirely appropriate.

The ethics office discourages members of management from circulating their family members’ résumés because of the sensitivity and perception of undue pressure that individuals may sense. In addition, dissemination of résumés should be for information only and should not carry with it a stated or unstated expectation for action other than a fair review and assessment as to whether there is a fit within a given organization.

*** — Sarah Renfro (12410)

Q: Why are the Sandia Lab News classified ads only open for submission by “. . . active and retired Sandians and DOE employees” and not the Sandia workforce in general? Can this not be opened up to Sandia MOWs (members of the workforce)?

A: Thanks for calling our attention to an oversight in the way we describe eligibility to submit classified ads to the *Lab News*. The policy should state “. . . active members of the workforce, retired Sandians, and DOE employees . . .” In fact, Sandia contractors have always been welcome to advertise in the *Lab News* classified ad section. The wording in the form however is not as explicit in that regard as it could be. We’re changing the wording, which will be reflected in “How to Submit a Classified Ad” forms. — Bill Murphy, Lab News editor

Nanoparticles

(Continued from page 1)

From lab to plant

Currently most nanoscience takes place in labs where very small amounts of matter are manipulated using specialized equipment. To manufacture consumer products, companies will need to master high-throughput, large-scale nanomaterial processing techniques, says Randy Schunk of Nanoscale & Reactive Processes Dept. 1516, who leads Sandia's portion of the work.

"Manufacturable implies practical," he says. "Companies need to disperse these particles in liquid, then cast them, coat them, layer them, or paint them on something, often over large areas. Such problems aren't necessarily going to be addressed in a research lab."

The potential benefits are enormous, he says. The National Science Foundation estimates that by 2015 the worldwide nanotechnology market could reach a trillion dollars annually. "The amount of money involved is staggering," says Randy.

Already today's flat-screen TVs incorporate nanofilms in their display screens. On the horizon are stronger and more transparent glues, lightweight composites, sealants for microelectronics devices, and new materials for sensing and medical devices.

Possible future products include coatings that react to the environment, paint or glass that color-shifts like a chameleon, self-lubricating or self-healing surfaces, or antimicrobial coatings for hospital ventilation systems, for example.



RANDY SCHUNK says nanoparticle-enhanced coatings are critical both to solid-state lighting and high-resolution consumer flat-panel displays. (Photo by Randy Montoya)

Toward a predictive capability

The consortium's work will address two main technical challenges: stable dispersal of nanoparticles in solution during processing, and improved understanding of particles dispersed in materials under stress or flow and how these states are affected by nanoscale forces. Both were viewed by participants as limiting factors in bulk manufacturing of nanomaterials and thin films.

Sandia is developing the modeling and simulation tools needed to understand liquid flow chemistry, nanoparticle dispersal stability, and particle control. Together with Sandia's high-performance computers, says Randy, the tools are expected to result in a predictive capability for nanoparticle processing — meaning materials and techniques with the highest chances of success can be designed on computers before they are ever tried in a laboratory. The modeling tools will be available to all consortium partners.

Resolution of these technical barriers may open doors not only to advanced coatings, but to layered bulk materials as well, he says.

Within Sandia the work is a Labs-wide collaboration, with contributing scientists and engineers from four centers, says Randy. They include Steve Plimpton (1416), Mike Brown (1412), Gary Grest, Matt Lane, Matt Petersen (all 1114),

Nelson Bell (1816), Jeremy Lechman (1516), and Anne Grillet (1513).

Work benefits NINE

Nanoparticle dispersal in liquid is a key issue for the companies involved in the National Institute for Nano



CORNING SAYS its proprietary fusion manufacturing process yields exceptionally clean, smooth, and flat surfaces, essential to the manufacture of LCD TV screens. (Image courtesy of Corning Display Technologies)

Engineering (NINE), a national hub for nanoscale engineering and education. NINE funds Sandia's portion of the consortium's work, and NINE collaborators and students will benefit, he says.

The Nanoparticle Flow Consortium is modeled after a similar cooperative research effort that began at Sandia in 1996, the Coating Related Manufacturing Processing Consortium (CRMPC). The CRMPC included many of the same partners and resulted in a software package, GOMA 5.0, which far exceeded existing modeling capabilities for coating processes, Randy says.

Inspection

(Continued from page 1)

- Auxiliary Hot Cell Facility
- Thermal Treatment Facility
- Corrective Action Management Unit (CAMU)
- Satellite accumulation areas
- Used oil and universal waste areas
- Aerial Cable Site, former Burn Site, and associated boneyards.

In addition to inspecting the targeted areas, NMED staff also reviewed a variety of internal documentation and checklists designed to ensure compliance at all levels of inspected facilities.

"Sandia continues to work toward meeting its goals of recycling and waste minimization," wrote inspectors in an informal closeout report. "The NMED inspection team was able to accomplish their targeted goals for this year's inspection in approximately 4.5 days of work versus the planned 8 days. This is due to Sandia's total commitment toward management of their hazardous waste activities."

Since the establishment of the Environmental Compliance Coordinator (EC) function, maintaining compliance has become a collaborative effort between line organizations and ES&H.

"Our EC coordinators assist the line organizations when it comes to meeting applicable environmental requirements," says Terry Cooper, manager for Environmental Programs and Assurance Dept. 4133. "They also help develop program guidance to achieve objectives and manage risks. In this way, our ECs work with the line to ensure they have the right information and tools to be successful. That translates to being inspection-ready all the time."

Work readiness

(Continued from page 1)

page so that when we talked through an interpreter we understood each other."

Courtney and Elaine also reviewed a survey of all the accidents that occurred in the Russian nuclear weapons complex to better understand their seriousness and which could be attributed to human error and stress.

In October they spent a week in St. Petersburg, meeting with Russian professors and researchers, giving all the team members the opportunity to talk face to face. This was the third meeting between the Russians and Americans in Russia. Two other meetings were held earlier at Sandia.

As part of the October visit, the Sandians — Courtney, Elaine, Chris Forsythe (6341), and Conrad James (1744) — attended a conference on cognitive psychology and neuroscience technology. The conference emphasized a sharing of research and ideas concerning technology application of cognitive and neuroscience research. Other



SANDIANS and Russians met in St. Petersburg to study "fitness for duty" issues in nuclear facilities.

Americans attending the conference were representatives of the Army Aeromedical Research Laboratory, Potomac Institute for Policy Studies, and the University of Memphis.

The goal of the conference, Chris says, was to open doors for US and Russian collaborations in the area of cognition and neurotechnologies.

Courtney says the conference and other meetings made both the Americans and Russians even more aware of their different approaches.

Follow-on activity would be for the Russians to continue to develop the readiness for work detection tool and convert it to critical facilities that contain nuclear materials. Sandia would then validate their efforts.

Chris notes that Sandia's cognition work with the Russian laboratory and university will have benefits in this country.

"Concern for personnel readiness for duty exists throughout US critical nuclear weapons operations, just as it does in Russia," he says. "The project provides an avenue for the US nuclear facilities, and other government agencies, to learn about and potentially benefit from the research and development of the Russian scientists."

Fitness for duty measurements developed for evaluation protocol

How do you measure fitness for duty?

Louise Weston (12335) answered that problem for the work with the Russian researchers by developing an evaluation protocol for proposed measures of fitness for work.

Last year Louise, together with Sandia psychologist Courtney Dornburg (12335) and Kathleen Diegert, manager of Reliability Assessment and Human Factors Dept. 12335, participated in a conference at Sandia

with VNIIEF staff interested in developing readiness-for-duty measures. Using information gained from that conference and additional research, Louise wrote a SAND report that examined experimental methods of validating measures of emotional state and readiness for duty in critical operations.

The methods outlined in the report are how Sandia would go about validating work readiness measures for Russians working in critical operations.

Greener and greener: Fleet Services Department exceeds DOE fuel and energy efficiency standards

By Chris Burroughs

Sandia's Fleet Services Dept. 10265 has exceeded fuel and energy efficiency standards set by DOE, one of a few organizations to do so in the nuclear weapons complex.

By making a conscious effort to reduce the use of petroleum fuels and increase the use of gasoline enhanced with ethanol and alternative fuel vehicles, Sandia has met — and even exceeded — requirements of Executive Order 13423. The order requires all government agencies to improve energy efficiency and reduce greenhouse gas emissions by a fixed date.

"We got on board early and have been working aggressively to meet the new standards, not just to be in compliance but because it is the right thing to do," says Fleet Services Manager Mark Crawford. "Green fleet management is good for business and good for the environment."

Falling under Sandia's Fleet Services' jurisdiction are 808 vehicles at all Labs sites, including cars, vans, pickups, and trucks. Ninety-eight percent of the annual replacement vehicles run on alternative fuel. This exceeds the Executive Order 13423 requirement that 75 percent of fleet replacements use alternative fuels.

Mark says Sandia took seriously an earlier Executive Order (13149) that called for

some of the same requirements as 13423. The department started about 14 years ago using compressed natural gas in vehicles. It then progressed to E85, a fuel composed of 85 percent ethanol and 15 percent gasoline. (Gasoline purchased at gas stations off base generally consists of 85 percent gasoline and 15 percent ethanol.)

Sandia vehicles use 1,300 gallons of E85 a week. Fleet Services fills the E85 tank once a week, but Mark anticipates that soon it will be filled twice a week.

"Meeting the new requirements in 13423 was simple," Mark says. "All we did was continue what we were doing."

In addition, Sandia vehicles that run on diesel use B20 — fuel made of 80 percent diesel fuel and 20 percent biodiesel fuel. Mark says his department may soon experiment using B100, diesel fuel made of 100 percent biodiesel.

Sandia's efforts in reducing use of petroleum products and increasing the use of alternative fuels and vehicles have been recognized both nationally and by the state of New Mexico. In 2006, Sandia's fleet was one of several fleets in the nuclear weapons complex that helped DOE win the coveted White House Closing the Circle award in the category of "Green Fleet Team Fuel Reduction through Alternative Fuels." Besides Sandia, the other organizations in the nuclear weapons complex that were part of the DOE nomination were Savannah River Site, Idaho National Laboratory, and Pantex. Sandia's fleet also won several Green Zia Environmental Excellence awards from the state of New Mexico.



GREEN MACHINE — Victor Cano-Linson of Sandia's Fleet Services Dept. 10265 fills up a government vehicle with E85, a green fuel composed of 85 percent ethanol and 15 percent gasoline. (Photo by Randy Montoya)

Laboratory, and Pantex. Sandia's fleet also won several Green Zia Environmental Excellence awards from the state of New Mexico.

New voicemail system about to enter your life

After 16 years Sandia will be changing out its aging voicemail system. The new system, CallXpress from AVST, was selected by a review team after months of research.

"Our internal team has been using the [CallXpress] system for several months now," says Gary Shepherd, project lead for the voicemail transition, "but the Labs-wide deployment won't take place until this summer. However, we need to get the general word out because we are in process of soliciting beta test users for the new system as we work up towards full deployment."

Gary and his team have developed a list of questions and answers (below) that address issues that are most likely to occur to typical users. For information not addressed in the Q&As, contact the Sandia Voice Information System (SVIS) hotline at 845-9445 in New Mexico or the Telecom Helpline at 294-6000 in California. Email questions to SVIS@sandia.gov.

• Why a new voicemail system? What's wrong with the old one?

The current voicemail systems in New Mexico and California have given excellent service since 1991. However, these very old proprietary boxes are no longer manufactured or vendor supported, parts are hard to



Photo by Randy Montoya

come by, and they are becoming increasingly difficult to support with ongoing changes in computer security.

• Who is affected by this change?

Everyone. The new system is able to simultaneously work with several different telephone switches. Most New Mexico and all California customers are connected to a 5ESS telephone switch, so this is the primary integration. However, customers who reside in the new Innovation Parkway Office Center (IPOC) facility (OMNI VoIP system there) or who work through the Definity telephone switch will be connected to the new system as well. The voicemail system should function the same way regardless of the telephone switch the customer's phone may be connected to. Everyone is on the same voicemail system, even though there are separate systems in New Mexico and California. The New Mexico and California systems are digitally connected so it will appear to customers as if they are all on the same system.

• So what's the new system?

After many months of examining systems from nine potential vendors, AVST was chosen as the replacement. Their system is called CallXpress. The team worked very hard to choose a system that would minimize change for customers. Some changes are inevitable as this is a much more modern system design, but these are minimal and online education tools will be available to learn about the changes. There are also lots of new features available to customers.

• What is new and great?

Customers who use the "get your voicemail in your email" functionality will be pleased because the new system delivers voicemail messages to the email system more quickly than the old system. Further, the Web Phone Manager (replacement for Web Messenger) is much more sophisticated and gives customers the abil-

ity to change and control many features on their own. Online training will be available to acquaint customers with all of these new features.

• Are there any major differences?

One area that customers should note is that the "get faxes in my voicemail" feature was not purchased with the replacement system. Faxes were very important 15 years ago but use of the fax features has steadily declined and is quite low at present. Any customers in New Mexico or California who need fax receipt in voicemail should drop an email to SVIS@sandia.gov. If the volume of requests is significant, this issue will be revisited.

• How will we be migrated to the new system?

Please note that user accounts, zero out indications, and telephone aliases will be moved from the old to the new system. However, customer recorded personal names, greetings, and messages cannot be moved. Each user will be required to initialize his/her voice mailbox on the new system and set a seven-character password (seven characters required). Anyone who has messages on the old system that they wish to retain should use either Web Messenger or EVM (EVM only in California) to get those messages downloaded to their local computer. (If you need help doing this, call the SVIS Hotline at 845-9445 in New Mexico or the Telecom Helpline at 294-6000 in California for help.)

• When will all this happen?

Because of telephone switch considerations, it is necessary to move the entire customer base at one time. Once the new system is ready for use, everyone will be given a temporary phone number to reach it and asked to initialize their new system mailboxes so that everything is ready to go when the switchover takes place. New system mailboxes will not accept messages until they are initialized by customers. This setup period will occur over a two-week block to be announced. Once the switchover takes place, customers will dial the same access numbers (both local and 800 numbers in New Mexico and California) that they have been using for many years. They will just be using the new system rather than the old one.

• What if I have questions or concerns now?

Sandia Daily News bulletins will be issued to keep everyone alerted as various deployment activities are scheduled, but if you still have questions, in New Mexico you can call the SVIS Hotline at 845-9445 or email question/concern to email address SVIS. In California, call the Telecom Helpline at 294-6000.

(Team members: Gary Shepherd, team lead; Marcia Jacobs, Les Brown (both 8949), and Lee Byers (9335, telephone system lead)

Sandia supports School to World



THE ANNUAL SCHOOL TO WORLD event at Albuquerque Convention Center in late February attracted some 2,000 students from public and private schools from around New Mexico. School to World is an educational event for 8th and 9th grade students and their parents to explore approximately 150 career options. The event is sponsored by Sandia/ Lockheed Martin and other community businesses and organizations. Students had the opportunity to visit with more than 500 presenters, including Jake Deuel (above), manager of Mobile Robotics Dept. 6472. (Photo by Bill Doty)

Refurbished Z continues its march into the future

Ceremony celebrates success of complex renovation

Photos by Paul Silva, Charlie Robinson, Jimmy Potter, and Bill Doty



I REMEMBER THAT — Sen. Pete Domenici, R-N.M., at Sandia to participate in the reopening of the Z machine after a \$90 million, multiyear refurbishment project, looks at historic photos of himself at the dedication of the Particle Beam Fusion Accelerator (PBFA), the predecessor to Z. To the senator's left is Keith Matzen, director of Pulsed Power Sciences Center 1600. Behind Domenici's right shoulder is NNSA Deputy Administrator for Defense Programs Robert Smolen. (Photo by Randy Montoya)

By Neal Singer

Despite the recent grim weather, the sun was shining on Sandia's modernized Z facility at a rededication ceremony held in Area 4 late last month.

Sandia President and Labs Director Tom Hunter, Executive VP Joan Woodard, and VP Rick Stulen welcomed Sen. Pete Domenici and Robert Smolen, deputy administrator for defense programs at NNSA, to the celebration. Also present were DOE SSO personnel, members of other national labs, and speakers representing New Mexico Sen. Jeff Bingaman and Reps. Heather Wilson, Steve Pearce, and Tom Udall. The point was to celebrate the nearly on-time, on-budget renovation of the one-of-a-kind facility.

Among the many recognized for praise was Ed Weinbrecht (1630) for managing the refurbishment project; Sandia staff photographer Randy Montoya (3651) ("for making the ugly look good," quipped Domenici); those administrators, researchers, and technicians — "heroes," they were termed several times — who had made the refurbishment possible; and its succession of directors, beginning with VP Gerry Yonas, who was instrumental in growing Sandia's pulsed power programs beginning in the 1970s.

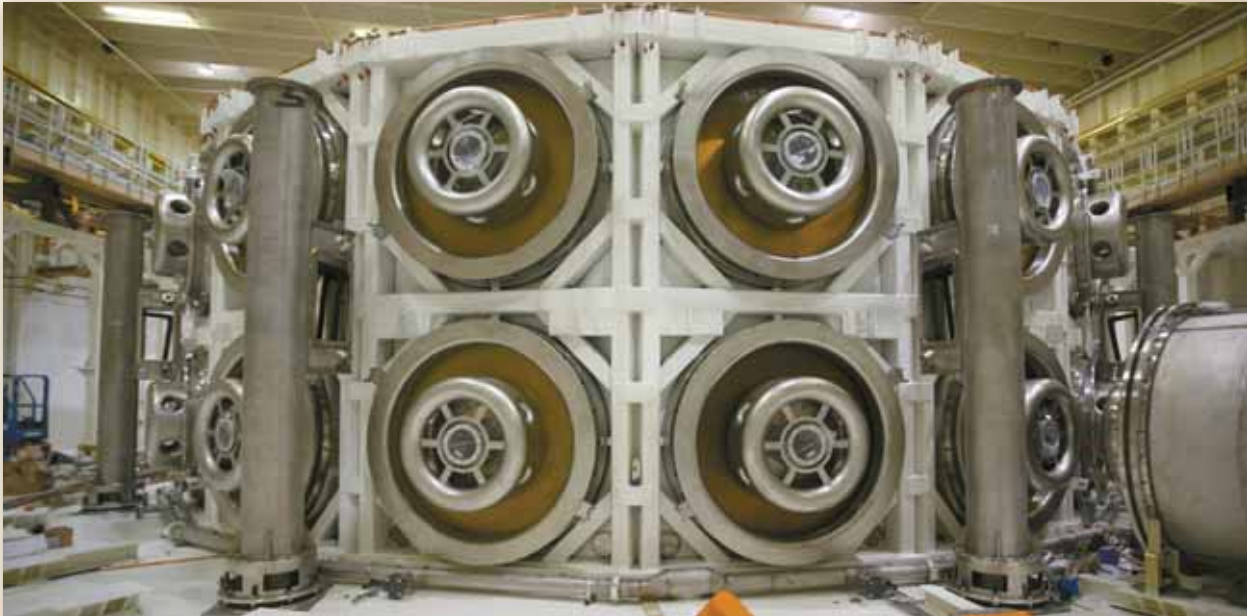
The facility's upgrade was completed late last year after a six-year effort that cost \$90 million. It will

take several more months to complete system testing at gradually increasing energies and to optimize experimental conditions for the research areas explored at the facility.

Z's original and still major purpose is to provide fundamental physics data and experimental tests of supercomputer models used to certify the US nuclear weapons stockpile. Inputs from its firings to date have helped avoid the need for underground nuclear tests. The more powerful version of Z is expected to provide still more precise data.

Additionally, the 107-foot-diameter machine's output advances the study of creating and controlling nuclear fusion in the laboratory. The so-called "dark-horse" entry in the fusion race has successfully squeezed a capsule containing heavy water to produce low-energy fusion neutrons. The big prize here, still decades distant, would be a method that uses similar pulses of power to produce electricity from (essentially) sea water, the most widely available substance on Earth.

After an extensive makeover that involved (among other improvements) new triggering lasers, larger electrical storage capacitors, and more durable parts, the facility can now deliver up to 26 million amperes to experiments, up from its previous incarnation's level of 18 million amperes. The question now to researchers is: What new insights will the machine produce with its additional energy?



Rebuilding Z

No one will ever compare Sandia Labs to a peacock. Showy, we're not. Some might call us understated. One famous Albuquerque remark has it that "Sandia Labs — no one really knows what goes on out there." Even Sandia's Z machine — which regularly reaches the temperature of the sun only a few miles from downtown Albuquerque — is not only hidden behind protective fencing but is housed in a nondescript building about as glamorous as an old-time high school basketball gym.

So we thought we'd partially lift the veil to show some of the grit and glamour of the refurbishment of Sandia's Z accelerator that has taken place during the past two years. The sparks and arcs of a welder's torch, casings that resemble a Roman aqueduct in size, metal shapes that resemble someone's idea of flying saucers, and men protected against harmful dust in white total-body cover seen by ordinary citizens only in science fiction films.

The majestic construction effort shows the powerful underside of a mighty project that provides data to simulate the effects of nuclear weapons. A project that just may hold the key to eventually unlock the secrets of controlled nuclear fusion that could provide unlimited electricity from sea water.

Then we'll drop the curtain again. — Neal Singer



Julia Blocker, John Schwartz among Sandians making ‘extreme makeover’ possible

By Iris Aboytes

A dilapidated duplex and two run-down buildings in Albuquerque were transformed into a mission-style complex by an *Extreme Makeover: Home Edition* crew and thousands of volunteers. The volunteers included employees from Sandia.

Extreme Makeover: Home Edition builds or renovates homes in a week for deserving families.

The selected family is sent on vacation while the house is built, and then returns to a new home. Homes are gutted and new ones are custom-built for the family.

Atreus Homes & Communities was the contractor for the house. *Extreme Makeover: Home Edition* airs on ABC Sundays at 8 p.m. No date has been announced for the national airing of the Albuquerque project.

Transforming a neighborhood

The compound was built for Rev. Gerald Martinez, pastor of Joshua’s Vineyard Church, and his family.

Martinez moved to the Trumbull neighborhood several years ago and began transforming the local church. He created a refuge with a café, daycare facility, and bathroom with showers. He worked at transforming an area called “the War Zone” into “God’s Block.” Martinez purchased two other duplexes that were used to create the Mission Outpost, a place where broken people could recover. All these services

were free.

His family began having financial difficulties. They did not have a working stove and used hot plates to do their cooking.

Extreme Makeover: Home Edition not only built the family a home but remodeled two existing duplexes and built an adobe-colored duplex to be used as part of the ministry’s outreach.

The home was built by volunteers. Everything was donated. “The

contractors work in 12-hour shifts,” says Sandian Julia Blocker (2454).

“There is no way I could work an hour at their pace. The people doing the actual work are contractors. Volunteers clean up, sweep, move materials, and perform tasks to help the experienced work-

ers. I worked two shifts.”

John Schwartz (2952) was primarily involved in the refurbishment of the two middle buildings. He and his wife Deanne volunteered about 60 hours. John and Deanne are good friends of the owner of the subcontractor firm GranCor Enterprises. GranCor was the troubleshooter for the project. As a result, John and Deanne knew firsthand what was needed.

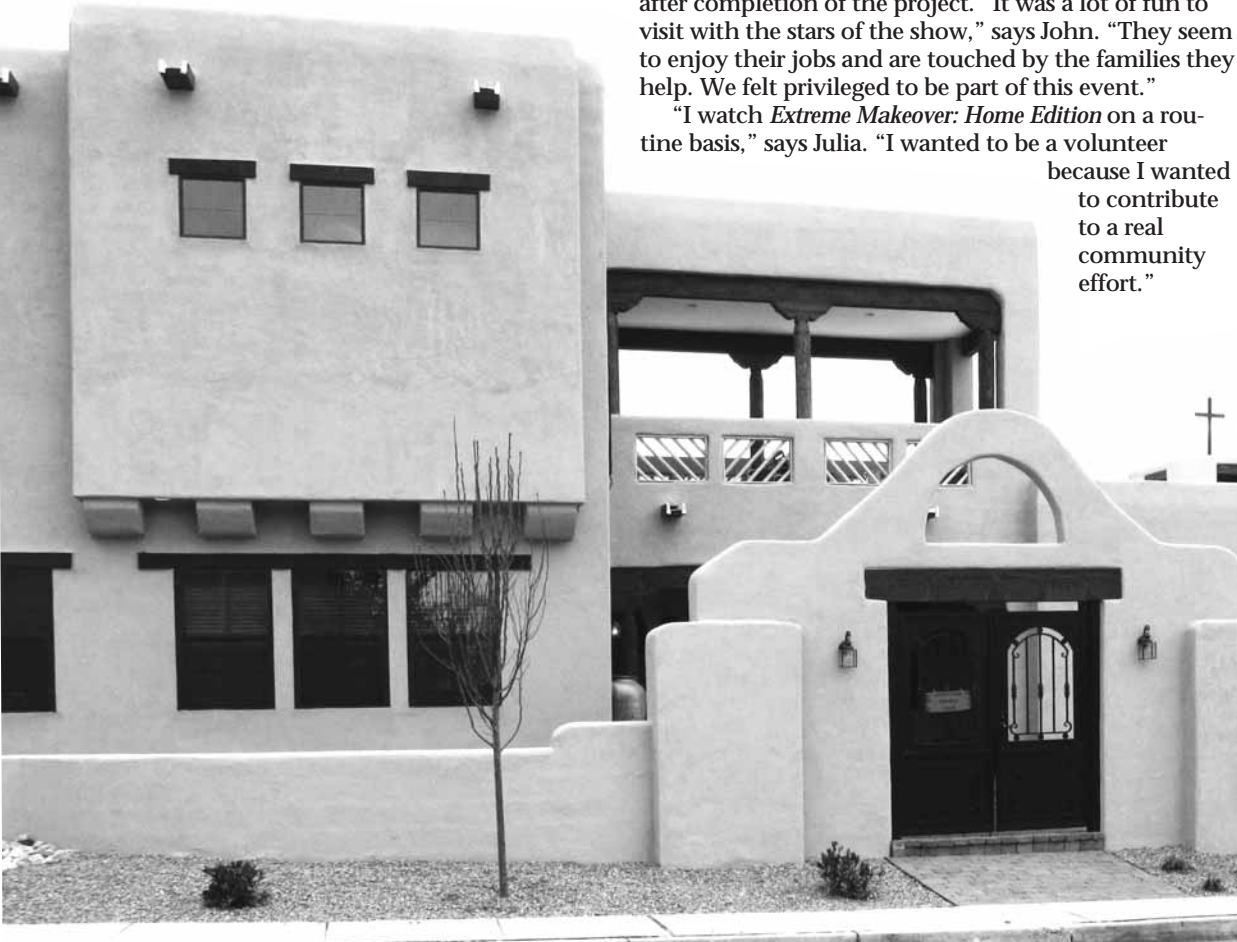
“One day on our way to the job site, Deanne solicited material donations to put the finishing touches on the landscaping,” says John. “She was able to solicit artwork, tables and chairs, and other landscaping totaling about \$3,000.”

John and Deanne were invited to the “wrap party” after completion of the project. “It was a lot of fun to visit with the stars of the show,” says John. “They seem to enjoy their jobs and are touched by the families they help. We felt privileged to be part of this event.”

“I watch *Extreme Makeover: Home Edition* on a routine basis,” says Julia. “I wanted to be a volunteer

because I wanted to contribute to a real community effort.”

Extreme
MAKEOVER
HOME EDITION



TRANSFORMATION — The Martinez home after being rebuilt from the ground up by *Extreme Makeover: Home Edition* crew, contractors, and volunteers, including several from Sandia. (Photo by Randy Montoya)



American Nuclear Society holds conference in Albuquerque

Helen Greiner, cofounder of iRobot, speaks with Les Shephard, VP of Energy, Security, and Defense Technologies Div. 6000, at Monday’s opening plenary session of the American Nuclear Society Joint Topical Conference on Emergency Management and Robotics for Hazardous Environments held in Albuquerque. Greiner was the plenary session speaker, and Les was honorary chairman of the three-day conference, which served as a forum for reviewing scientific, technical, social, and regulatory aspects of emergency management and robotic applications in hazardous environments. Attending the conference were first responders, emergency planners, and decision makers.

(Photo by Bill Doty)

Sandia News Briefs

Terrorism conference is April 1-3

The Homeland Security & Defense SMU, Security Systems and Technology Center 6400, and the Arlington, Va.-based Terrorism Research Center will cohost the annual Training, Threats, Tactics, and Technology (T4) Conference April 1-3, 8 a.m.-5 p.m., at the Albuquerque Marriott, 2101 Louisiana Blvd. NE. For the past 10 years, the Terrorism Research Center has gathered nationally recognized experts to discuss terrorism, emerging threats, training, tactics, and technology, particularly as they relate to those tasked with dealing with these issues. During the conference, participants will have the opportunity to explore some of the challenges and gain insights into issues related to terrorism. Registration will be on a first-come, first-served basis; cost is \$500 per person. Questions to Erica De Smet at edsanch@sandia.gov or 505-845-8352.

New dependent enrollment reminder

If you have a dependent who becomes newly eligible for medical, dental, and/or vision coverage through Sandia, you must enroll that dependent within 31 calendar days of the event (e.g., birth, adoption, marriage, etc.) qualifying them for coverage. If you miss the 31-day period, the next opportunity to enroll your eligible dependent will be during Sandia’s Open Enrollment period in the fall, with coverage effective Jan. 1 of the following year. You must provide a birth or marriage certificate, adoption papers, or any other required documentation within 60 calendar days of the event. In order to meet the 31 calendar day enrollment requirement, you must submit the enrollment form within 31 calendar days. Then complete the enrollment process by providing the required documentation as described above. The health plan enrollment forms are available on the web under Corporate Forms. Contact HBE at 505-844-4237 for assistance.

Trinity Site tour is April 5

The National Atomic Museum will lead a bus tour to the Trinity Site Saturday, April 5. The bus leaves the museum (1905 Mountain Rd. NW, Albuquerque) at 6 a.m. and will return around 4:30 p.m. Tour participants will walk to Ground Zero, see Jumbo, and be able to enter the historic McDonald Ranch House. Docents will lecture on the bus and at the site about historical events, developments, and scientific pioneers of the Manhattan Project. The tour includes lunch and viewing of an explosives test at New Mexico Tech in Socorro. Cost is \$60 per person. A lecture about the first atomic test Friday, April 4, 7 p.m., is included in the tour; cost for others is \$3. Make reservations at <http://tinyurl.com/3bfqs4> or call 242-6083.

Morris Dees to address diversity forum

Morris Dees, chief trial counsel for the Southern Poverty Law Center, will deliver the keynote presentation “Beyond Tolerance to Inclusion” at the 19th Annual Diversity Leadership Council on Diversity Forum April 24 at the Albuquerque Convention Center. The full-day forum features a luncheon address by Bill Resnik, a plenary workshop titled “Crucial Conversations,” and two rounds of breakout workshops with 10 choices focusing on a wide range of diversity-related issues. For information go to Sandia’s Diversity website at <http://ln.sandia.gov/diversity-awareness>. or contact Rochelle Lari at 844-2111 or ralari@sandia.gov or Lupita Serna (3512) at 845-3401 or leserna@sandia.gov.

Science fair judges needed

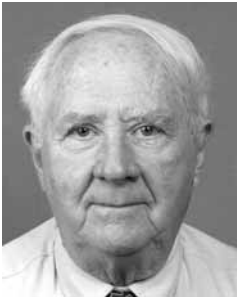
Judges are needed for the National American Indian Science and Engineering Fair (NAISEF), to be held March 27-29 at the Albuquerque Convention Center (West Complex). Judging takes place Friday, March 28, beginning at 7 a.m., with a continental breakfast and judges’ orientation. NAISEF is an annual event for Native American students to participate in a science-based learning environment and create science projects that can be shared among peers, teachers, and educators. Judges serve as role models, proponents of science and engineering, and advocates for research. If interested, contact Tina Pino at tina@aises.org or 505-765-1052 ext. 105, or visit the NAISEF website at <http://tinyurl.com/22jxdj>.

Mileposts

New Mexico photos by Michelle Fleming
California photos by Randy Wong



James Harrison
40 8238



Charles Christensen
30 2913



Bruce Gunckel
30 9538

Recent Retirees



John Vitko
33 12101



Howard Hirano
30 8960



William Winters
30 8757



William Wolf
30 4136



Mark Baumann
25 6475



Michael Benavidez
25 4211



Randy Simons
29 5534



Ann Riley
25 10222



Tom Brewer
25 12341



Steve Bunn
25 8948



Viola Campos
25 11500



Tony Chavez
25 8948



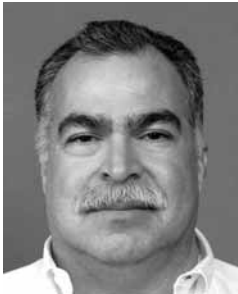
Charles Duus
25 6301



Peggy Collins
10 5525



John Fellerhoff
25 12300



Raymond Gabaldon
25 1053



Charmaine Grabowski
25 4018



Rigoberto Ledezma
25 8247



Tanny Mays
25 10267



Gary Polansky
25 5424



Wayne Schock
25 8512



Anthony Trujillo
25 2992



Constance Vanderburg
25 4800



Lynn Janik Washburn
25 1054



John Cresap
20 2611



Donna Edwards
20 8114



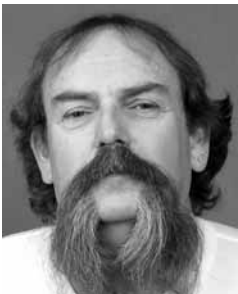
Marjorie Petersen
20 6324



Tim Shepodd
20 8778



Andrew Silva
20 9335



David Van Ornum
20 2734



Cynthia Alvine
15 8239



Sara Fernandez
15 8517



Mike Foley
15 8229



David Furgal
15 6755



Alvin Leung
15 8234



Blake MacDonald
15 8514



Frances Moore
15 8003



Habib Najm
15 8351



Carol Neely
15 8524



Colista Reynolds
15 5925



Sandra Smallwood
15 3332



Shelly Smurthwaite
15 8521

Sandia

Classified Ads

Sandia

Classified Ads

Sandia

Classified Ads

Sandia

Classified Ads

MISCELLANEOUS

CHROME RIMS, 22-in., Pinnacle Messiah, w/tires, great condition, paid \$2,300, asking \$1,200. Guthrie, 907-9228.

AB LOUNGE, \$50; Cosco infant stroller, \$25; antique/decorative wood high chair, \$25. Bruneske, 263-1311.

DRESSER, 9-drawer, matching mirrors, \$250; double bed, \$200; teak desk, \$175; refrigerator, \$175, much more, moving. Pendall, 265-3008.

SHORT-WAVE RADIO, w/speaker, Hallicrafter, \$150 OBO. Alexander, 291-8028.

BIKE TRAILER, for kids, Burley Solo, \$100; Raleigh commuter bike, 2 yrs. old, \$150 OBO. Oczon, 888-5140.

YU-GI-OH CARDS, most 1st edition, condition varies, call for specifics. Wagner, 823-9323.

NOTEBOOK/LAPTOP, Sony Vaio VGN FS660, under Best Buy warranty, like new, \$750. Campbell, 294-6000.

GRATEFUL DEAD COLLECTION: videos, DVDs, CDs, posters, books, Garcia ties, T-shirts & more. Gravning, 265-1398, ask for Dolores.

LAWNMOWER, Craftsman, 20-in., rear-bag, little use, like new. Storks, 831-7149.

CRYPTS, 2, in original mausoleum, Sunset Memorial Park, very desirable location, \$8,400. McKiernan, 255-2277.

GARDEN/STORAGE SHED KIT, metal, 8' x 5', new, \$170; lawnmower, 18-in. reel, w/catcher, Sears Best, \$50. Roeske, 275-5935.

OCEANIC FISH TANK BASE & CANOPY, will hold 18" x 48" tanks, \$100. Walraven, 291-8242.

CELL PHONE, Verizon, Samsung i760 Smartphone, near new, used 1 mo., all pkg. & material, w/extras, \$410. Colborg, 604-4915.

METAL/GLAS DOOR, \$95; rims, 4, 15-in. 6-lug, \$100; wrought iron door, \$75; dishwasher, \$95. Logsted, 281-3130.

DOG CRATE, metal, medium, 24"H x 21"W x 30"L, bird cage, 37"H x 23"W x 19"L, \$85/both or \$50 ea. Stafford, 453-6898.

CONVERT OLD VINYL, into CDs and/or MP3, nearly scratch/pop/click-free, donations appreciated. Bullock, 400-8070.

TELESCOPE, Meade 8-in. Dobsonian starfinder, ~8 yrs. old, dustcap, Telrad, Antares focuser, accepts 1.25-2" accessories, \$180. Barnette, 861-2451.

JACKETS, woman's, med./large, lovely, one-of-a-kind, work/dressy, must see, best offer. Wilson, 293-2228.

FOUR-BIKE HITCH RACK, Yakima, full-swing, w/lock, excellent condition, \$175 OBO. Hutchinson, 281-5358.

TIRE & RIM, B78-13st, new, for trailer use, \$20. Nelson, 881-0148.

UPRIGHT PIANO, w/bench, ~1920 Jesse French & Sons, mahogany, only slightly used, \$200. Miller, 275-8154.

LIFT TICKETS, 2, Wolf Creek, valid any day rest of the season, regularly \$50 ea. asking \$75/pair. Grube, 238-5845.

BASKETS, Longaberger, special editions, multiple sizes & styles, prices vary, \$50-\$150. Wells, 292-0179.

PROM/FORMAL DRESSES, sizes 7-9, assorted colors/styles, very pretty, only worn once, \$50-\$75 ea. Garcia, 977-5889.

WOOD STOVE, antique, white, 6-burner, w/oven, \$950 OBO; antique dresser, needs refinishing, \$150. Chavez, 315-1069.

CAMPER SHELL, ARE, white, fiberglass, fits '00-'06 GM long bed, excellent condition, \$600. Graveline, 980-5888.

CONDO, Cabo San Lucas, Mexico, Nov. 30-Dec. 7, 1-bdr., kitchenette, 1 mile from beach, \$900/wk. Collins, 864-0511.

TIMESHARE RESORTS, variety of hot vacation spots, Interval International, 2 units, 2-bdr., \$900/wk. Luther, 822-1187.

DISH 311 RECEIVER, w/remote, 3 yrs. old, no account balance, \$50 OBO. Gibson, 440-0624.

BOWFLEX POWER PRO XLT, w/lat, squat, leg attachments, video/manual, barely used, excellent condition, \$500. Crawford, 401-6886.

WHEELS/PERFORMANCE TIRES, from '03 Nissan 350Z, 2 rear (235-50X17), 1 front (225-50X17), low miles, \$600 OBO. Alexander, 797-7750.

SKIS, Solomon Xscream shaped, length 160cm, w/Solomon bindings & poles, \$60 OBO. Woodard, 239-0517.

DINING SET, Thomasville, lighted china cabinet (52" x 77"), round 42" table, 2 leaves, 4 chairs, excellent, \$650 all. Benham, 792-1264.

REFRIGERATOR, Kenmore, white, side-by-side, 26-cu. ft., ice/water dispenser on door, 4 yrs. old, \$700 OBO. Stevens, 301-3719.

DISPLAY CASE, w/drawers on bottom, ~9-ft. tall, pine wood, used, \$70. Bandlow, 301-3296.

AVIAN BEHAVIORISTS, Sally Blanchard/ Suzanne Cochran, 3/15/08, CNM Vet students, Community of Christ Church, <http://www.nmbird-club.org>, \$25/\$15. Bullington, 797-5999.

LOVESEAT, microfiber, light brown, lightly used, \$100 OBO. McMurtrey, 292-4880.

CELL PHONES: Verizon, Samsung A950 \$45; Motorola RazarV3, \$65; Motorola V276, \$35; several accessories for ea. Hale, 298-1545.

ROLL-TOP DESK, w/chair, \$125; 2 entertainments centers, \$80/set. Smallwood, 828-2107, ask for Cathy.

INTERIOR DOORS, 2, 6-panel, 24-in. wide, solid pine, right-side hinges (from exterior), w/jams & knobs, stained special walnut w/urethane, \$50 ea. Dwyer, 271-1328.

CUSTOM WHEELS, 4, Panther, 18-in. chrome, 5X114.3 bolt pattern, Toyo Proxes s/t 275 low profile tires, only 1 yr. old, \$1,000 OBO. Gonzales, 898-3956.

ELECTRIC DRYER, Frigidaire, commercial, heavy-duty, w/drum light, hardly used, like new condition, \$200. Pifer, 299-9693.

GRAPHING CALCULATOR, TI-84 Plus Silver edition, used 2 wks., \$80. Sanchez, 315-9258.

WEDDING RINGS, 1/2 carat diamonds, ladies sizes 6.5 & men's 9, \$400. O'Brien, 400-1564.

ROCKER RECLINER, La-Z-Boy, new, Rich II, paid \$1,200, asking \$550; Yamaha piano, spinet, w/bench, very good condition, \$525. Malcomb, 294-6975.

FOOT PEDAL REED ORGAN, antique, requires some restoration & assembly, w/assembled pictures, free. Freymiller, 286-1325.

POPEJOY TICKETS, 2, front row mezzanine, "HMS Pinafore" 4/16/08, \$82; "I Love a Piano" 5/3/08, \$86. Verley, 821-0492.

EXERCISE BIKE, Schwinn Aerodyne, \$150; Craftsman gas lawnmower, 22-in., \$25. Rudolfo, 294-9334.

DESK OR VANITY, 1940s, mahogany, youth-size, \$95; Kenmore sewing machine w/attachments, \$75. Stauffer, 268-8819.

TIMESHARE, 2-bdr., Vacation Village, Bonaventure, Fla., can be deposited w/RCI, \$8,000. Meinelt, 899-5038.

ALTO SAXOPHONE, '89 LeBlanc Vito, student model, original owner, great condition, but needs tune-up, \$400. Davis, 268-0768.

SONY STEREO, 50-CD w/surround, \$50; desk, like new, \$50; Philips TV, 19-in. flat screen, \$50; DVD player. Cazares, 620-3860.

CLARINET, Selmer series 10B, Paris, beautiful condition, perfect for advancing high school student, w/plush case, \$1,100. Stuart, 296-8188.

How to submit classified ads
DEADLINE: Friday noon before week of publication unless changed by holiday. Submit by one of these methods:
• EMAIL: Michelle Fleming (classads@sandia.gov)
• FAX: 844-0645
• MAIL: MS 0165 (Dept. 3651)
• DELIVER: Bldg. 811 Lobby
• INTERNAL WEB: On internal web homepage, click on News Center, then on *Lab News* link, and then on the **very top of *Lab News* homepage** "Submit a Classified Ad." If you have questions, call Michelle at 844-4902. Because of space constraints, ads will be printed on a first-come basis.

- Ad rules
1. Limit 18 words, including last name and home phone (If you include a web or e-mail address, it will count as two or three words, depending on length of the address.)
 2. Include organization and full name with the ad submission.
 3. Submit ad in writing. No phone-ins.
 4. Type or print ad legibly; use accepted abbreviations.
 5. One ad per issue.
 6. We will not run the same ad more than twice.
 7. No "for rent" ads except for employees on temporary assignment.
 8. No commercial ads.
 9. For active members of the workforce, retired Sandians, and DOE employees and retirees.
 10. Housing listed for sale is available without regard to race, creed, color, or national origin.
 11. Work Wanted ads limited to student-aged children of employees.
 12. We reserve the right not to publish any ad that may be considered offensive or in bad taste.

SOUTHBEND LATHE, 10-in., w/all tooling, 120-V threading attachments, very accurate still, \$1,850 OBO. Lynch, 379-3066.

POKER TABLE, oak, reversible top, w/4 gas-lift adjustable chairs, dark blue fabric, excellent, \$250. Dimock, 821-9212.

BABY EQUIPMENT: stroller w/car seat, Baby Bjorn carrier, great condition; new large dog crate. Cook, 275-3692.

WORKMATE PROJECT CENTER/WISE, Black & Decker 550, \$35; Craftsman 1.5-hp router & table, \$35. Owens, 281-8525.

DINING ROOM TABLE, 6 chairs, buffet/hutch, medium oak, mission-style, great condition, \$700/all. Valdez, 550-1993.

LAPTOP, Gateway Turion X2, 1GB memory, 150GB HD, 15.4-in. machine, 6 mos. old, \$600 OBO. Mares, 896-1704.

COUCH, brown microfiber, comfortable, seats up to 3/4 people, excellent condition, \$300. O'Canna, 463-3731.

ENTERTAINMENT CENTER, Hooker, 3-pc., 101" W x 77"T, up to 36-in. TV, lighted sides, \$1,800 OBO. Jamison, 899-1540.

TRUCK BED TRAILER, 4' x 6', \$100; 4' x 8' MC/utility trailer, \$600; both titled. Gourley, 301-2711.

FRONT-LOAD WASHER & DRYER, Samsung, washer 3.8-cu. ft., dryer 7.3-cu. ft., white, stacking kit, <9 mos. old, \$1,200. Falconi, 350-5006.

TIMESHARE, Gold Crown Resort, South Padre Island, TX, March 29-April 5, 1-bdr., full kitchen, \$700. Walters, 857-9767.

ANTIQUES: dresser w/mirror, \$250; 2 marble top end tables, \$200; 2 lamps, \$40. Campos, 898-7941.

COUCH & LOVESEAT, beige w/small floral pattern, good condition, \$300 OBO/both. Madsen, 294-3895.

GERMAN SHORTHAIR POINTERS, field trial champion/hunting lines, 7 males, 1 female, located in Bernalillo, \$400. Myers, 350-5782.

DUPLEX DOG HOUSE, 4' x 8' x 4', w/hinged roof, \$175. Cox, 440-0643.

HDTV, Panasonic, 54-in., works great, \$350; Sears 10-in. radial arm saw w/stand, \$350. Lanes, 856-6237.

AB LOUNGE XTREME, Tony Little, exercise chair, w/DVD, part chair, part exercise machine, excellent condition, \$80. Gallegos, 804-1985.

CAMERA, Nikon D70, 2 lenses, \$450/firm; Nikon D80, 18-135mm, warranty, \$850 OBO; Toshiba U205 C2D ultra-portable, \$550 OBO. Itokazu, 808-342-1430.

HOME THEATER SPEAKERS, Canton Fonum, 39"H, black w/2-8-in. bass, 6-in. mid, 1-in. HF drivers, \$400/pair. Brooks, 271-1224.

EXERCISE MACHINE, Soloflex, weight straps, leg extension, butterfly attachment, excellent condition, call for details, \$250. Rentzsch, 281-5017.

HOME REMODELING SUPPLIES: vinyl floor tile (26 boxes); drywall (~550-sq. ft.), call with offer. Edney, 281-4779.

WIDESCREEN HDTV, 48-in., Mitsubishi WS-48313 DLP, ~4 yrs. old, good shape, ~\$1,800 new, \$800 OBO. Lee, 286-7734.

CHAIRS, 8, matching, solid wood, not upholstered, dark oak color, very good condition, \$100/all. Mattern, 823-9543.

ENTERTAINMENT CENTER, oak, w/glass & wood doors, open shelves, \$125 OBO. Long, 286-2509.

SKI RACK, Thule flat top, 4-ski, rooftop carrier, \$80; racquet ball racket, \$15. Monson, 573-5480.

PLATFORM BED, w/6 deep drawers, oak, California king, w/pillow-top mattress, \$500. Gibson, 332-2714.

TABLESAW, Craftsman, 10-in. w/dust collection, link belt, casters, built-in router table, \$300. Rizkalla, 286-9278.

WASHER & ELECTRIC DRYER COMBO, Frigidaire, 27"W, ~ 5 yrs. old, white-on-white, great condition, \$300. Sells, 254-2590.

GOLF BAG, Hunter carry w/auto stand, very nice, #1, 3, 5 Elan Kunnan metals w/graphite shafts, make offer. Havo, 821-6682.

SOFA & LOVESEAT, tan & black, both w/large pillows, \$300 OBO. Leach, 239-8522.

MOVING SALE, 3/22/08, 8:00 a.m.-12:00 p.m., 11020 Hagen Road NE, futon, freezer, tables, dressers, bed, entertainment center, toys, TV. Varro, 228-7290.

DRUM SET, w/5 drums, throne & cymbals (hi-hat & ride), cymbals & throne are new, \$250 OBO. Henfling, 869-4119.

KID'S BEDROOM SET, bed, desk, headboard, lots of shelf & drawer storage under bed, light laminate finish, excellent condition, \$975. Newman, 228-0859.

TODDLER BED & MATTRESS, wood bed, white, assembled, \$30; mattress, \$20; both never used. Lobato, 507-9171.

VACATION CONDO, available 5/9-5/16, Landal Wirfttal Resort, Stadtkyll, NW Germany, near Paris, 3-bdr., full kitchen, \$1,000. Garcia, 280-5815.

ELLIPTICAL, Health Rider, good condition, works great, \$600; glider rocking chair, \$50. Keller, 440-7816.

DOG CRATE/CARRIER, XL Pet Porter, sand color, for large breed dogs, \$50. Pena, 271-5222.

CUSTOM SOFA & CHAIR, Southwest-style, medium blue cushions, great condition, can email photos, \$800. Kepler, 296-0402.

CARPET CLEANER, Bissel ProHeat, \$75. Sorensen, 890-7163.

SURROUND SPEAKERS, Bose Acoustomass7, \$250; Bose 301 speakers, \$100; JVC receiver, \$200; convertible crib/toddler/full bed, \$200. Briggs, 280-3810.

TIMESHARE, Cancun, Royal Sands Resort, May 24-31, 2-bdr. villa, sleeps 6, \$1,100. Limon, 890-4135.

TRANSPORTATION

'99 VOLVO V70XC, AWD, Cross Country Wagon, PW, heated leather seats, CD, AC, sunroof, new tires, 141K miles, \$8,000 OBO. Mosley, 281-4023.

'05 DODGE GRAND CARAVAN, 55K miles, great condition, \$9,999. Armijo, 507-7417.

'02 HONDA ACCORD EX, coupe, V6, fully loaded, silver, 72K miles, great condition, \$12,900. Crespin, 797-9451.

'03 GMC YUKON DENALI, loaded, 2nd row Captain seats, 68K miles, great condition, \$23,500 OBO. Brown, 688-6199.

'04 DODGE RAM Q/C, 4x4, white, 4.7L V8, 5-spd. manual, #22 on base lot, lots of extras, 72K miles, \$13,500. Willmas, 252-0138.

'89 ACURA INTEGRA, engine turns over, won't start, \$250. Greatbatch, 899-4159.

'00 CHEVY CAMARO, V6, AT, cherry red w/gray interior, 75K miles, KBB \$8,000, asking \$7,600 OBO. Dominguez, 379-4112.

'90 MAZDA 626, AC, PW, PL, 5-spd. manual, moon roof, 28-mpg, quality tires, 94.7K miles. Allen, 890-6935.

'03 VW JETTA GLX, V6, loaded, leather seats, new tires, 53K miles, great car, \$15,900 OBO. Proctor, 321-0785.

'91 CHEVY SILVERADO, extended cab, V6, 5-spd., white, bed liner, 18-mpg, original owner, 132K miles, \$4,000. Sanchez, 463-0543.

'91 RANGER, 4WD, manual transmission, 197K miles, terrible paint, project vehicle, \$800. Babcock, 892-7199.

'02 CHEVY MALIBU, V6, AC, PS, PL, CD, new tires, 85K miles, good condition. Gonzalez, 463-5057, ask for Sergio.

'03 TOYOTA TACOMA TRD, 4x4, 4-dr., V6, AT, factory warranty, complete maintenance records, excellent condition, \$17,800. Drennan, 897-7153.

'05 INFINITI G35, AT, leather, in-dash 6-disc CD/MP3, dealer serviced, 4/60 factory warranty, 31K miles, \$23,000. Natha, 453-6345.

'01 TOYOTA 4RUNNER SR5, 4x4, custom wheels & tires, reliable, 112.3K miles, great condition, \$11,250 OBO. Kizziah, 331-8232.

'00 HONDA ODYSSEY EX, AT, grey, 6-disc CD, original owner, well maintained, garaged, new Michelin tires, 62K miles, \$11,000. Jones, 280-1398.

'83 PORSCHE 911 SC, 3.0L, 5-spd., rebuilt transaxle & much more, 184K miles, runs great, \$8,500 OBO. Moriarty, 235-2449.

'95 FORD F350 XLT, 4x4, 4-dr., long bed, lots of extras, excellent condition, \$10,000. Moser, 833-1135.

'07 FORD F150, single cab, 5-spd., silver, 4.6K miles, \$15,000. Romano, 228-0092.

'02 DODGE DAKOTA, quad cab, V8, AT, PW, PL, AC, CC, tow pkg., matching camper shell, new tires, 101K miles, excellent condition, \$9,700 OBO. Archuleta, 450-3729.

'69 MERCURY COUGAR, new engine (351 Windsor), new paint, \$12,000. Flores, 850-7400.

'05 HONDA ACCORD LX SEDAN, 4-cyl., AT, dark blue, tinted windows, all power, original owner, 30K miles, \$16,250 OBO. Alderete, 565-4321.

'99 TOYOTA CAMRY LE, AT, V6, all power, AC, ABS, cruise, traction control, tan, 150K miles, runs excellent, \$4,800. Mihalik, 281-1306.

'04 JEEP WRANGLER SPORT, 6-cyl., red, hard/soft bikini tops, 21K miles, great condition, \$16,400. Hapka, 220-9114.

'01 AUDI TT ROADSTER 225 QUATTRO, silver, 51K miles, new tires, perfect, \$1,500 under book, \$15,000. Morales, 363-6707.

'96 FORD MUSTANG, manual, green, 89K miles, great condition, very reliable, \$3,500. George, 730-6030.

'03 JEEP GRAND CHEROKEE OVERLAND, heated seats, loaded, 74K miles, must see, \$15,000 OBO. Rowen, 263-3843.

John Stichman, quintessential engineer, retires from Sandia after nearly 36 years

By Iris Aboytes

Sandia Executive VP, Chief Operating Officer, and Deputy Laboratory Director John Stichman will soon drive off in his 1965 restored Corvair convertible and retire from Sandia after nearly 36 years of service.

"I have planned on retiring at this time for some years. I do not have any anxiety about retiring. Happily for me there are many things that are elements of defining who I am to myself and so I will carry those with me. They aren't all about Sandia. I have always felt that my work here is an important part of that, but not all of it," says John.

"John has been a stalwart contributor to the Laboratory," says President and Labs Director Tom Hunter. "He has been the chief engineer for the nuclear weapons program. In his current role, he has been a terrific source of confidence and strength for me and the executive team. It has been a privilege to work with someone of John's character, integrity, and ability."

John came to Sandia in 1972. Sandia was in a hiring freeze and the recession was in full gear. "I was happy to get a job," says John. "Many of my friends weren't getting job offers."

John earned his BS, master's, and PhD degrees in electrical engineering from the University of Wisconsin at Madison.

During his career, John has filled many roles including two division supervisor positions. It was in his second role as supervisor that he realized he was involved in making a difference. His team was given 22 months to go from concept to field deployment of the first cryptographic controlling system for coding systems for nuclear weapons in Europe. "We absolutely had to make it happen. The technology was not fully developed," says John. "It was a complicated high-security software system. We pulled together a team that worked to make it successful."

As director of the Surety Components and Instrumentation Center, John directed the development of telemetry systems as well as electronic and electro-mechanical components. He then became Sandia's VP of the Weapon System Division, responsible for all aspects of Sandia's nuclear weapons engineering.

Nearly three years ago John was appointed to his current position, where he is responsible for Labs operations, staff, and facilities and for developing policy and assuring implementation. John's responsibilities include the overall stewardship of the technical capabilities of the Labs and for setting, promulgating, and maintaining standards for technical activities.

"John is the quintessential engineer," says retiree Michael Callahan. "He values and loves engineering. John has a deep, foundational integrity for the realities of engineering. Integrity means that John is always the same John, and that he always has the same principles, that his principles are ones we recognize and respect. John often refers to writings of Samuel C. Florman, author of *Existential Pleasures of Engineering*. A quote from Florman could have been spoken by John. 'I respect that impulse in human nature which seeks to improve the world. This impulse manifests itself in engineering.'"



FROM JUNK TO A GEM — John sits behind the wheel of his restored 1965 Chevrolet Corvair convertible.

John and his wife Kris will be taking a trip to France soon after his retirement. "John is a perfectionist," says Kris. "He loves to read and find out things. Cooking and singing in our church choir have been his primary stress relievers. I look forward to having more time to be spontaneous. It will be wonderful to do things on the spur of the moment."

John hopes to rekindle some of his suspended hobbies. Some of the things he enjoys are music and woodworking. He has combined those hobbies and built two hammer dulcimers. He has also built a teardrop fiddle and a violin from a blank. "That was a daunting experience," he says. He also has an 1880s parlor organ in need of restoration. He and Kris have built furniture and maybe they will do some of that again.

John will continue to contribute to the community. "What form, I don't know," he says. "I have told my friends I feel that no matter where you are as long as you are able-bodied and able-minded, you have to earn your air."

John is also interested in philosophy, theology, and ethics as formalistic fields of study and would like to pursue his interest in them.

"Every so often, I get the urge to take some old car and turn it into running condition like I did my 1965 Corvair, which was pure junk when I first got it," he says.

'Hey kids'

John and Kris have three children, David, Amy, and Kit, and two grandsons, Aidan, 2, and Reese, 6.

John says he is not the most patient person, but patience is described by Amy. "My dad was my primary teacher when I learned to drive," says Amy. "Tension was often pretty high in the car. I was nervous about driving and Dad was nervous about letting me drive. He taught me how to drive in our old 1973 Ford Bronco, which had an enormous steering wheel, no power anything, and a manual transmission. After we'd conquered driving in parking lots and out-of-the-way dirt roads, I drove in the city. I was doing all right for a while, but I had to turn right onto a fairly busy street from a corner with a steep hill. I panicked, popped the clutch, pulled out onto the street too quickly, and over-compensated by turning the wheel too much to the right. For about half a block, I was driving with two wheels on the sidewalk. I was very upset and humiliated. People driving past were pointing and laughing. I looked over at Dad, expecting him to chew me out, but he's too busy trying to choke back the laughter.

"From this I learned if you learn how to do something the hardest way, any way after that will be easy, and even in times of great tension, sometimes the best thing to do is to laugh at yourself, or at someone else," says Amy.

"Throughout my life I have heard, you look exactly like your father," says David. "As much as I've laughed that off, it is, without a doubt, a compliment. It would be an even greater compliment for me to hear, 'You are exactly like your father.' That would mean that people recognize in me the same qualities and values that are found in him and to which I aspire, including — but certainly not limited to — intelligence, the importance of family, ethics, hard work, dedication, integrity, empathy, sympathy, kindness, compassion, and generosity.

"Another quality is the necessity for humility and staying grounded. When I was in my teens my shorter father and I played a game of one-on-one basketball. I took control of the game early and was feeling rather brash and overconfident. I didn't take it easy on him; however, my dad still had some tricks up his sleeve. In one surprising moment, he managed to block one of my shots completely off the court.

"I was immediately taken down a peg, and his sly smile is still a reminder to me that no matter how much I think I know and how confident I may be, there is still so much more than can be learned and nothing should be taken for granted. From him I learned it is critical to balance confidence and humility.

Maybe for him it's only to a certain extent. After all, he sure bragged about that blocked shot for many months afterward."

"Dad was always there for us," says Kit. "I was a competitive swimmer and he never missed one of my meets. He was always there cheering me on, offering words of encouragement when the outcome wasn't what I had wanted. Dad was always trying to teach us



THE STICHMAN FAMILY (from left to right) — Kit, Amy, Reese, David, Kris, Aidan, and John.

no matter where we were. He would always say, 'Hey kids.' Now whenever he starts we all say, 'Hey kids.'"

John can do anything

"As graduate students, John and I were teaching assistants," says Tony Sill (5732). "John is extremely bright with a high level of integrity. John can do anything. He and Kris built their own furniture. He can fix anything. He even taught himself how to play the violin."

John would also like to devote time to sports. "I used to play lots of tennis," he says. "I realize I have played less in the last five years than I did in a typical week or two several years ago. I am concerned my ankles will fail to move my body. My ankles will just ask — what? There are 20 pounds of me that have never played tennis before.

"I hope I have had a positive influence on the laboratory and have helped prepare it for its future."

John's theme of excellence

"The way I look at it," says John, "people who have gone before us set an ethos for Sandia. They made decisions about this laboratory: 'This is what Sandia will be. We are going to be a force for positive influence in the community.' We have retained that. When I go to United Way events, I find a great many Sandians still staying much involved at a very high level. Those early Sandians also set a model for excellence in getting the job done, pushing the boundaries of what can be done. In those ways, they have done a tremendous shaping of the laboratory."

"Our jobs here are to support Sandia's mission with nuclear weapons, other national security issues, energy, and a broad range of other things. Some years back, I spent time thinking about what constitutes excellence in engineering. These precepts have application to any profession. I carry these four things as a theme of excellence."

- 1. Work with discipline and prudence
- 2. Exercise critical thinking
- 3. Innovation
- 4. Work in your career to increase capability and confidence

