Director Tom Hunter announces Sandia reorganization; appoints three deputy directors, two new vice presidents

Woodard, Stichman, Romig to be deputies; Stulen, Rottler new VPs; fewer but larger divisions in plan

By Bill Murphy and Ken Frazier

Sandia's new organizational structure, rolled out over the past 10 days at department-level meetings across the Labs, creates three deputy laboratory director positions, reduces by three the number of divisions (by consolidating centers along functional or mission-related lines), and has the MESA program office report directly to the laboratory director.

The restructuring represents an evolution of the existing structure more than a radical retooling.

As Labs Director Tom Hunter explained in a *Lab News* interview prior to the rollout, "In my talk to the managers and to the all-hands staff meeting [*Lab News*, May 27, soon after he became Laboratories Director], I talked about every step being a step forward. That's what I hope we've done here. We've taken the foundation we've built with our current organizational structure and our SMU structure and we've tried to enhance it with this restructuring."

More on restructuring

Under the new structure, the three deputy directors are Joan Woodard, deputy for nuclear weapons; John Stichman, deputy for laboratory operations, program deployment, and implementation of common engineering practices; and Al Romig, deputy for integrated technology programs.

Integrated technology programs might be thought of as "everything else" not directly related to nuclear weapons — nonproliferation, military technologies, homeland security, and energy and infrastructure surety. Each deputy will head up an "affinity group," made up of centers that share a common mission or operational focus.

"These affinity groups will be the way we consolidate roles across the laboratory," Tom says.

Tom also announced the promotion of two Sandians to vice president, Rick Stulen and Steve Rottler.

The new organizational structure places a premium on consolidation. While divisions 9000, 14000, and 15000 go away, all their centers

(Continued on page 5)

Sandia LabNews

Vol. 57, No. 12 June 10, 2005

Managed by Lockheed Martin for the National Nuclear Security Administration

Sandia National Laboratories

MiniSAR flies for first time, taking images with resolution of 4 inches

Synthetic aperture radar may soon be used for recon on small UAVs

HOW SWEET IT IS — Researchers April Sweet and Michael Holzrichter (both 2348) examine a miniSAR package similar to the configuration that has flown for the first time on a Twin Otter aircraft. (Photo by Randy Montoya)

By Chris Burroughs

Sandia researchers flew what is probably the world's smallest fine-resolution synthetic aperture radar (SAR) in May, making real-time images in the 6-kilometer range with a resolution of four inches. It was a first for the 25-pound instrument that may soon be used for reconnaissance on near-model-airplane-sized unmanned aerial vehicles (UAVs).

"What's new is that the miniSAR is flying and working just as it should," says Armin Doerry (2342). He, together with co-project leads Dale Dubbert and George Sloan (both 2345), created the current approach for the miniaturized SAR several years ago.

Over the past year the trio and a core team of about 10 engineers finished development of all the technologies that make up miniSAR, including integration of the radar subsystems and completion of the system software.

MiniSAR is less than one-fourth the weight and one-tenth the volume of SARs that currently fly on larger UAVs such as the General Atomics' Predator. It has the same capability as the larger SARs of making fine-resolution images through weather, at night, and in dust storms. It is also "every bit as complex" as the few-hundred-pound systems currently flying, Armin says.

(Continued on page 4)

MESA TOP II spreads wings in Sci-Tech Park

New facility has objective to further miniaturize SAR

A ribbon-cutting last Thursday marked the official blooming of the MESA project's second experimental flower: MESA TOP II, occupying 9,500 square feet in the Ktech building in Research Park just east of Eubank Blvd. The second experimental facility, like MESA TOP I, also in Research Park, will help provide data on how researchers from different Sandia organizations work best together, before MESA's Weapons Integration Facility is finished and the huge MESA complex is formally staffed.

The official goal of the second center, said retiring MESA director Don Cook, is to create a SAR (synthetic aperture radar) device under five pounds to put on unmanned aerial vehicles and guided munitions.

Michael Callahan (2300) told the assembled 35 researchers at the ceremony, "You're moving away from the mother ship [of Sandia's traditional org interactions] to try this experiment. I can't think of a more exciting place to be. There's a force, like tectonic plate motion, driving us. We are going the way the Lab wants to go. The expectations are great; we picked the most talented people we know. I look forward to a decade of engineering accomplishments that are unique on the planet."

Working together will be researchers from 1700, 2300, and 9100, under the leadership of Brett Remund (2300) and David Plummer (1900).

— Neal Singer

California showcases site with fun and festivities for friends and family.
Story on ***page 3.***

Sandia technology becomes cornerstone of Advent Solar start-up.
Story on ***page 4.***

ACG speaker tackles thorny issues of privacy and technology. Story on ***page 8.***

What's what

Remember the old "all work and no play makes Jack a dull boy" folk wisdom? Of course, it didn't occur to the old folks who passed that wisdom down that "all work" didn't do Jill any good either, buuuuuut that was then and they were old.

Now, with the talk of reorganization buzzing around the Labs, you can find a degree of nervous anxiety here and there. Although there's no real reason to be concerned (see "Director Tom Hunter announces Sandia reorganization…," starting on page 1), it's natural for people to be anxious about change when it's going on all around them. Especially when they have no control over such change.

Humor's always a good refuge for such times, and despite their reputation as science nerds and techno geeks, Sandians appreciate it as much as anyone else.

For example, of Albuquerque's continuing Tramway-to-Pennsylvania I-40 construction project, Michael Townsend (12654) e-mailed recently: "Should we be calling this the "Tram-sylvania" project? It could have Count Dracula as the mascot, making all your nightmares come to life."

Pretty clever. And a lot better than some of the lame "top-10" lists on Letterman recently.

* * *

And while we're on humor at Sandia, I think somebody is — or somebodies are — having a little fun with us about "the boulder" on Hardin Boulevard.

Last issue, you'll recall, we published a photo of the boulder on a Cancun beach, with a tall drink. The explanation was that it had been taking a well-deserved rest, but was now back on duty. We checked this out, and found the boulder is, in fact, back in place on the south side of Hardin near the east end of the main runway.

One of our seasoned staffers snapped the photo at right, which shows the boulder back in place. But I have to say I'm a little dubious about some of the conjecture about its here-today-gone-tomorrow-back-the-next-day shenanigans. I'm no mountain man or scout, but those marks on the ground around the peripatetic boulder look more like tractor tire tread tracks (try saying that three times quickly!) than prairie dog pawprints or alien spacecraft landing pad impressions.

If we really want to get to the bottom of this, we could get one of the crack researchers from the Combustion Research Facility to implant a sensor array in the area and see what that turns up. If it's diesel exhaust, we'll be fairly sure somebody's having us on. If it's not diesel exhaust. . . well, we'll cross that galaxy when we get to it.

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

Sandia LabNews

Sandia National Laboratories

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Albuquerque, New Mexico 87185-0165
Livermore, California 94550-0969
Tonopah, Nevada • Nevada Test Site • Amarillo, Texas • Carlsbad, New Mexico • Washington, D.C.

Sandia National Laboratories is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin company, for the US Department of Energy's National Nuclear Security Administration.

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Congratulations

To **Linda Stackpole** (3520) and Stephen Harris, married in Albuquerque, May 6.

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

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Manager Promotions

New Mexico

Mark Rosenthal from Manager, W76-1 Life Extension Dept. 2132, to Level II Manager, Stockpile Systems III, Group 2130.

MARK ROSENTHAL

Mark joined Sandia in 1982 as a member of the technical staff in the Switching Devices Division, where he was the component engineer for a Stronglink Nuclear Safety Switch. He then transferred to the Advanced Mechanical Systems Division where he became technical lead for full-scale Strategic Earth Penetrator Weapon development and testing. Mark then spent four years in the Phase 1 and 2 Division working on weapon development activities that included the Army's Follow-On-To-Lance warhead and as the project lead for the Alternate Short Range Attack Missile.

In 1992, Mark was promoted to DMTS and then to Manager of the Advanced Weapon Projects Department. This systems department led the Multi-Application Surety Technology weapon demonstration project, worked with the UK Atomic Weapons Establishment to develop a warhead electrical system, and qualified the common radar for application on the B61 lay-down bomb. His most recent assignment was Manager of the W76 Life Extension Project that is currently in Phase 6.3 Development Engineering.

Mark has a BS in mechanical engineering from the University of California, Irvine, and an MS in ME from the University of Illinois at Urbana-Champaign. He is a member of ASME, and a past chair and director of the New Mexico Section. Mark is a PMI-certified Project Management Professional.

* * *

Lee Shyr from DMTS, Transportation Assessment Dept. 4154, to Manager, Weapon Safety Basis Engineering Dept. 12347.

LEE SHYR

Lee joined Sandia in June 1994. Before that, he started his career in basic research, developing an imaging system for studying exposure risks at the microsystem level, working for two consulting companies, and doing risk assessment work supporting Los Alamos National Laboratory operations.

While at Sandia, Lee has made high-impact contributions for assessing safety and security risks of some of the nation's most critical assets, including DOE's nuclear weapon transportation program and Department of the Interior critical assets. He was the co-principal investigator of two Grand Challenge LDRD projects: Border System Model/Simulation and Virtual Perimeter Security Systems. He led Sandia's support to the DOE Hanford site on nuclear waste retrieval and closure and served on the Hanford Tank Initiative Advisory Group.

Lee has a BS in physics from National Cheng Kung University, Taiwan, an MS in radiation physics/nuclear engineering from the University of Cincinnati, and a PhD in radiation science, environmental sciences, and engineering from the University of North Carolina.

Retiree Deaths

Victor Reano (age 89) . . . . . April 3
Helen E. Melancon (86). . . . . April 24
W. W. Westman (86) . . . . . May 2
Delmar V. Gronseth (76) . . . . . May 3
James S. Hinson (77). . . . . May 6
Frank Alden (86). . . . . May 7
Frank J. Valencic (86) . . . . . May 15
James W. Courtin (83) . . . . . May 15
Henry C. Strauss (81) . . . . . May 17
Jack Raymond Smith (79) . . . . . May 18
Urbano Salas (79) . . . . . May 20
Vernal E. James (81) . . . . . May 23
James H. Renken (69). . . . . May 26

California site sparks interest from scores of guests during Friends and Family Day event

By Nancy Garcia

It was not business as usual when Sandia/California opened its doors May 21 to some 1,500 employees and guests who enjoyed a rare opportunity to see for themselves what takes place in most of the 58 buildings and 403 acres that make up the California site.

Friends and family members of all ages accompanied their Sandia hosts in exploring attractions scattered around the site and seeing offices or laboratory spaces where work is carried out. Employees had been requested to skip trying to do any additional work that day, a Saturday. Retirees were welcomed back, parents of employees tagged along, fiancés brought their future spouses and in-laws, and staff members brought offspring as young as newborns to partake in the experience.

Instead of the normal sight of people in business attire moving purposefully around the facility, the grounds were peppered with groups of relaxed folks in weekend gear clearly enjoying warm spring weather and each other's company.

A health fair was set up in the parking lot near the medical building, with hula hoops, badminton, and other activities alongside shaded tables where visitors could acquire health tips and test their vital signs and hygiene.

At the Combustion Research Facility engineers and scientists discussed engines and energy research and displayed some sources of radiation from everyday life, such as kitty litter, fertilizer,

VISITING the Homeland Security display room that he helped design was Gregg Andreski of Public Relations and Strategic Communications Dept. 8528, with daughter Mia, niece Savannah, mother Chris Andreski (8700), and wife Erica Andreski (8528). (Photos by Nancy Garcia)

Sandia CaliforniaNews

and brightly glazed imported plates.

Behind the Micro and Nano Technologies Laboratory, polymer research team members fired off a foam tester with help from onlookers.

All in all, a couple dozen exhibits, displays and demonstrations were scattered throughout the site.

"It was wonderful, it really was," remarked Birdie Nilsen, wife of Curt Nilsen (8226), as the couple departed at the end of the day with their son Ben, who said the foam tester was among his favorite stops of the day.

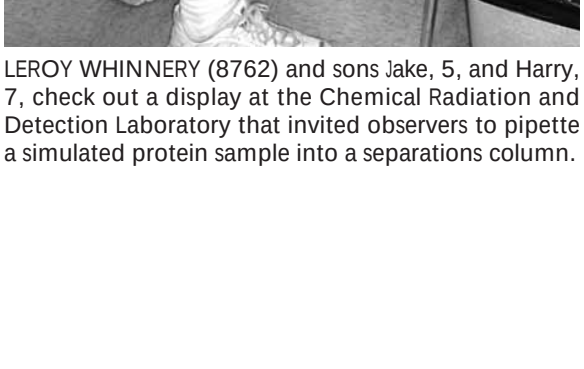
Frank Bielecki's (8941) son Rob remarked upon leaving that he really appreciated the diesel engine lab discussion by Mark Musculus (8362), while his brother Anthony said he enjoyed the radiation display by Robert Hillaire (8154).

Genetha Gray (8962) brought her boyfriend Rob McGormley, who was impressed by the variety of programs represented, from telemetry to hydrogen vehicle research. He said he liked seeing her office too. "Now I get it a little bit more," he said. "All you hear is weapons, weapons, weapons. You don't know about this other stuff that goes on."

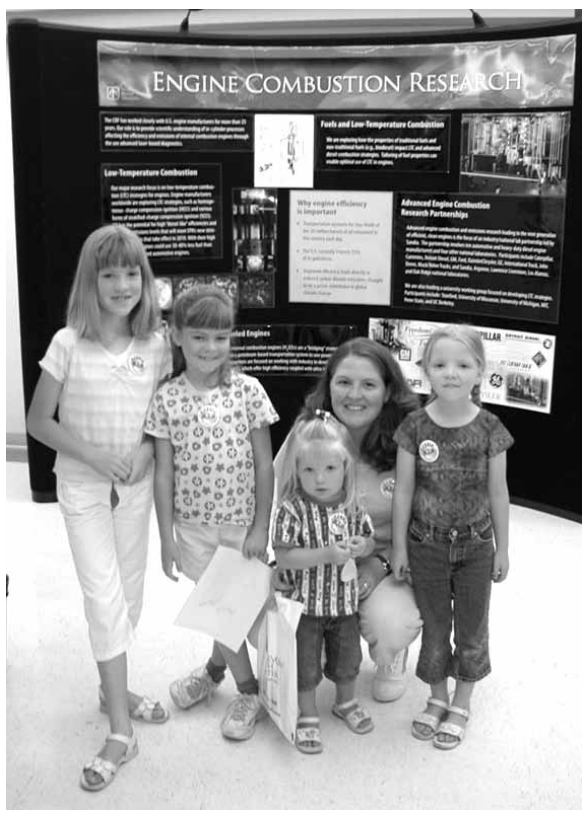
The previous Family Day six years ago took place when East Avenue was still open to through traffic and post-9/11 security challenges had not yet become a reality. This year's event was created through the efforts of scores of volunteers who offered exhibits, served as escorts, and helped prepare for the day.

"A great success all the way around," was how California Laboratory 8000 VP Mim John summarized the event.

Added Family Day chair Mike Janes (8528), "I was really pleased with both the turnout and the exceptional effort by the planning team members. Our guests really appeared to savor the opportunity to stroll around the site and see all the interesting things that make up Sandia. Having no security infractions or safety incidents, coupled with terrific exhibits, great food, and perfect weather, all made for an ideal Friends and Family Day that everyone seemed to enjoy."



LEROY WHINNERY (8762) and sons Jake, 5, and Harry, 7, check out a display at the Chemical Radiation and Detection Laboratory that invited observers to pipette a simulated protein sample into a separations column.



THE FAMILY of Lyle Pickett (8362) visited his laboratory area at the Combustion Research Facility. With his wife Judy are Andrea, 10, Katelyn, 7, Erin, 2, and Janna, 6.

Sandia technology becomes cornerstone of Advent Solar

James Gee left Sandia to found new photovoltaic cell technology company

By Chris Burroughs

A photovoltaic cell technology James Gee helped develop at Sandia is now the cornerstone of a new company that he and a long-time friend have established.

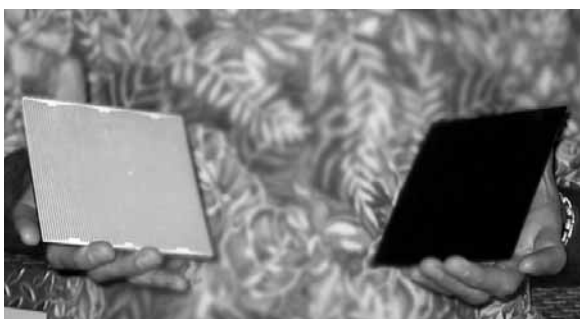
The company, Advent Solar, held its ribbon-cutting ceremony last month with both Sen. Pete Domenici and Sen. Jeff Bingaman attending.

James left Sandia two years ago to start the company with a vision that "solar energy is poised for dramatic growth in the US," he says.

"When it is recognized, solar energy is going to take off," he adds.

The company will be manufacturing and selling photovoltaic cells based on a Sandia-developed technology that locates all electrical contacts on the back of the solar cell, freeing up the top surface for more absorption of sunlight. Conventional solar cells have the contacts on the front, which results in lost light due to reflection.

"Our new photovoltaic cell technology is more efficient, costs less to manufacture, and allows use of a thinner substrate," James says.



FRONT AND BACK of solar cells. All electrical contacts are on the back of the solar cell.

A SUNNY DEPOSITION — James Gee inspects the plasma-enhanced chemical vapor deposition tool, the primary piece of equipment used in producing photovoltaic cells.

When James took entrepreneurial separation from Sandia in 2003, he spent several months working out of his home office. The company soon obtained "angel investor funding" — money from an investor that funds startups in the early stages. Finding the right investors is also critical to a startup, and the lead investor (Kristin Martinez) in Advent's first round had the contacts and startup experience to help Advent through the first year. James, the lead investor, and Advent CEO Rusty Schmit put together the company's "story" — the venture capitalists' term for a business plan that describes how the company expects to become valuable — that was used to help raise Advent's second round of financing.

In December Advent Solar received an $8 million round of venture capital that it is using to build a pilot production line at its new headquarters at the University of New Mexico's Manufacturing Training and Technology Center.

Leaving Sandia to start the company was difficult; James had been here as a scientist, senior scientist, and manager for 23 years. But the time was right.

"A lot of elements came together," he says. "I saw a technical opportunity. The solar panel market is growing."

Schmit, someone he's known for a couple of decades, approached him about joining him to co-found the company. His new partner had business experience, something James says he didn't have. Schmit was the manager of Texas Instruments' solar program (which he later helped sell) and started a company called Matrix Solar — becoming the president and director of a major international photovoltaic manufacturing firm (Photowatt International).

Using their venture capital, James and Schmit bought several million dollars worth of used equipment in good condition, and they currently have all the tools necessary for fabricating advanced silicon solar cells and modules. They placed the equipment in UNM's Manufacturing Training and Technology Center. Advent Solar is leasing 10,000 square feet there with half of it high bay for the pilot production line. Currently Advent Solar has 16 employees, but James expects that ultimately to increase to 300 over the next few years.

James says that the company will soon complete the installation of the pilot line for production of the photovoltaic cells, which will be used for perfecting the cell design and the manufacturing process. He anticipates limited sales by the end of the year.

MiniSAR

(Continued from page 1)

Small and lightweight, it can be put on airborne platforms that are one-tenth the cost of UAVs required for the larger SARs. It will also have a lower manufacturing cost than its larger cousins.

"MiniSAR is smaller and cheaper without sacrifice of performance," Dale says.

MiniSAR took its first images May 10 when it was flown on a Twin Otter aircraft owned by NNSA. This was followed by three weeks of image collection at various locations over Kirtland Air Force Base.

Currently the miniSAR is connected to an operator control computer and data recorders on board the plane. The computer and data recorders will eventually be placed in a ground station, allowing the miniSAR to function on the smaller UAVs.

The miniSAR consists of two major subsystems: the Antenna Gimbal Assembly (AGA) — the pointing system that consists of the antenna, gimbal, and transmitter — and the Radar Electronics Assembly (REA) — the signal generator, receiver, and processors. The AGA transmits and receives the radar signal. The REA is the electronics package that generates the radar signals, controls the system, processes the data, and transforms it into an image.

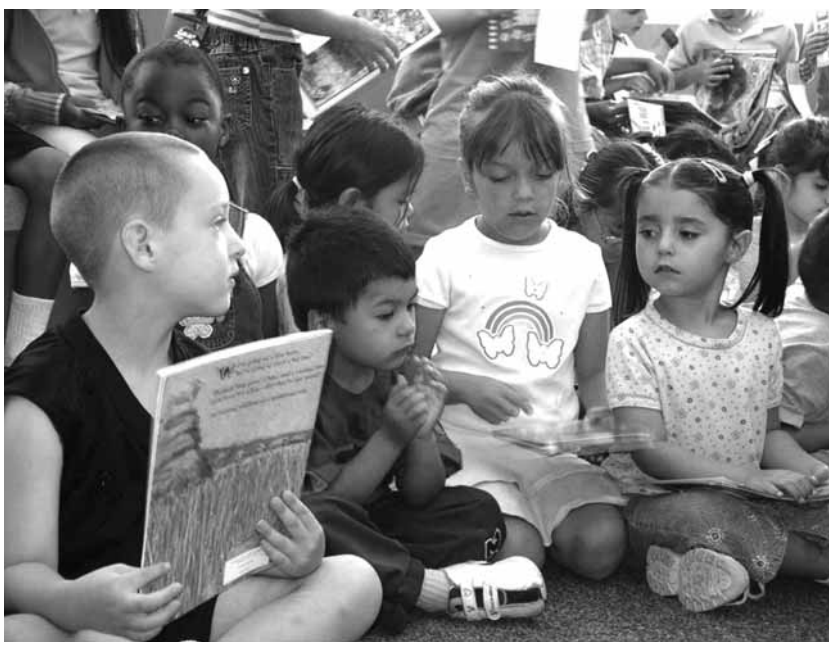
The researchers expect the miniSAR to shrink to under 20 pounds in the short run. Longer term, the team is working to exploit Sandia microsystems technologies (at MESA, the Microsystems and Engineering Science Applications complex), further shrinking miniSAR to as low as 5 to 10 pounds.

While miniSAR will initially be used for reconnaissance on small UAVs that can carry a payload of 50 pounds, it may also be used for precision-guided weapons. However, the cost and size of miniSAR will need to be reduced even more for weapon applications.

Sandia is currently negotiating license agreements with several military subcontractors, which would build the miniSARs in volume.

"While initial interest has been tremendous, we are looking for a long-term partner that not only wants to build them, but also has the vision to work with us on continuing enhancements," George says.

Sandia helps in 'Read to Me' campaign



BOOKED UP — The Albuquerque Business Education Compact (ABEC) "Read to Me" book drive that was held at Sandia along with 42 other local companies resulted in more than 12,000 books being collected. The books were being distributed at the end of the school year to Alamosa, Dolores Gonzales, Emerson, East San Jose, Lew Wallace, and Lowell elementary schools. Pictured here are students at Lowell Elementary enjoying their new books. The goal was to place at least one book in the hands of each child at those schools prior to the summer break to encourage them to read. The children also received a bookmarker and information about their local public library's summer reading program nearest their home. Many Sandians donated books in the Sandia drive, coordinated by the Office Professionals Quality Council. Pam Catanach of Community Involvement Dept. 12652 is the chair of the Read to Me Committee with the ABEC.

Reorganization

(Continued from page 1)

remain intact, but move to other divisions. In addition, several centers from remaining divisions also move to other divisions to better align with mission and functional requirements.

Thus, Science and Technology and Research Foundations Division 1000 picks up Center 6700 (Radiation Sciences), as well as Centers 9100 (Engineering Sciences), 9200 (Computation, Computers, and Math), and 9900 (Advanced Product Realization).

With the retirement of Pace VanDevender, the new VP for Science and Technology and Research Foundations Div. 1000 is Rick Stulen, currently the director of Homeland Security Systems and Development Center 8100.

With the promotion of VP John Stichman to Deputy Director, Weapons Engineering and Product Realization Division 2000 will be headed up by Steve Rottler, current director of NM Weapons System Engineering Center 2100. Steve's division picks up the two 14000 centers, 14100 (manufacturing Science and technology) and 14400 (Neutron Generator Production). (Current Div. 14000 VP Lenny Martinez has joined the Lockheed Martin Los Alamos contract bid team.)

Jerry McDowell, current VP for DoD Programs Division 15000, becomes head of a combined division 15000 and 5000 (National Security and Arms Control). The new division, to be called National Security Programs, also gets Electronics Systems Center 2300.

Center movements

Other key changes: Centers 9300, 9500, and 9600, the Integrated Information Services centers that deal with aspects of computer security, networks, and information systems, move to Integrated Security Division 4000. (The aim is to consolidate cyber and physical security functions more closely). Business and Enabling Services Division 10000 picks up Corporate Business Development and Partnerships Center 1300 and ES&H Center 6300. Human Resources Division 3000 picks up Executive Staff Director Center 12100 and Public Relations and Communications Center 12600. Energy, Information, and Infrastructure Surety Division 6000 acquires Security Systems and Technology Center 4100 and Intelligent Systems and Robotics Center 15200. California Site Division 8000 remains unchanged, as do Divisions 11000 (Legal) and 16000 (Advanced Concepts group). Stockpile Surveillance Center 12300 and Ethics and Audits Center 12800 remain directly associated to the Lab Director's Office, as do the Ombuds groups (in California and New Mexico), Corporate Investigations Dept. 20, and Counterintelligence.

One key — and intended — effect of the consolidation efforts is to create larger divisions. The newly consolidated technical line divisions (currently numbered 1000, 2000, 5000, 6000, and 8000) will average more than 1,100 employees each. In the old structure, eight technical line divisions (1000, 2000, 5000, 6000, 8000, 9000, 14000, and 15000) averaged just over 800 employees.

*(**Note:** The organization numbers used in this story and the related sidebar stories refer to numbers in the current organizational structure. The new structure may use some or all of the same numbers, or may come up with a new numbering scheme; that is a detail still be worked out. Some executive titles may also change.)*

Restructuring at a glance

Here's a thumbnail summary of changes in Sandia's organizational structure new Sandia President and Laboratories Director Tom Hunter announced May 31:

• The present number of 15 top executives will be reduced to 14; the number of divisions is reduced, with the average size of divisions going up.

• John Stichman will become deputy director. Joan Woodard will be deputy for the nuclear weapons program. Al Romig will be deputy for integrated technology programs.

• Rick Stulen will become VP for Science & Technology and Research Foundations (Div. 1000).

• Steve Rottler will become VP for Weapons Engineering and Product Realization (Div. 2000).

• Division 9000 (which Tom Hunter headed until his new appointment) is being dissolved (actually divided in two), with some centers going to Div. 1000 and others to the Security and Information Division, headed by Ron Detry.

• Division 15000 (DoD Programs) is merging with Div. 5000.

• Division 14000 (Manufacturing Systems) is merging with Div. 2000.

• A number of centers are being moved to other divisions. But the centers themselves will remain intact (nothing within them has been changed).

• The MESA Program Office will report directly to the deputy director offices. MESA Program Director Don Cook is leaving to join the Lockheed Martin team seeking to gain the Los Alamos management and operations contract. (Previously announced: VP 14000 Lenny Martinez is doing so as well.)

• The people changes listed are effective June 17.

• The California Laboratory division is unchanged.

• This year's performance reviews will be conducted with the old structure, not the new one.

• Sandia's Strategic Management Units are unchanged at least through this fiscal year; Al Romig has been asked to address any future changes in SMU structure.

• The Laboratory Leadership Team (LLT) will continue; it will continue strategic planning at each of its meetings to implement all these changes.

Operational excellence: A vital measure of success

In his public comments and in a *Lab News* interview preceding the rollout of the new Labs organizational structure, Labs Director Tom Hunter has stressed that what he calls "operational excellence" is a vital part of how the Labs' performance is measured. Here's how he describes it:

• "There are a clear set of expectations on the laboratory with respect to operational performance.

• "There needs to be a strong focus on operational safety, for which there are metrics we can use to judge ourselves. We have some clear targets for improvement there.

• "There needs to be cost-effective performance in operations as well as program deployment.

• "There needs to be an efficiency of corporate processes which allows for more time to address mission and those responsibilities. We need to give leaders time to lead and everyone time to think. So — efficiency of processes: With that goes clarity in how we do things, how we make decisions, who has what roles, and how things get done in a timely manner.

• "Cost-effective security. We need in operational excellence to not only have a very high state of operational security, but we have to figure out how to do it at a cost that allows us to not impact our mission."

There is an increasing demand from external oversight, Tom says, that Sandia be judged to be "at the top of our game" in the area of operations. The oversight comes from Sandia's own corporate board of directors, as well as from DOE's Office of Independent Assessment and the NNSA/SSO contract officer. All of these entities assess — and increasingly emphasize — operational excellence, as well as programmatic mission excellence, Tom says.

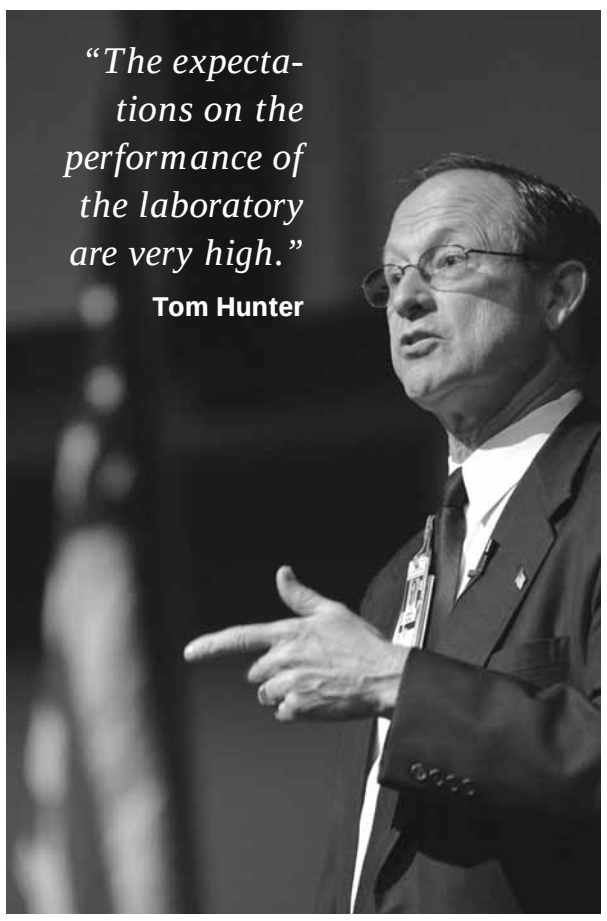


Photo by Randy Montoya

Although the external assessments may appear burdensome in the short term, Tom says he hopes that critical scrutiny actually facilitates more self-governance.

"My hope is that by establishing ourselves in the eyes of these folks as exceptional performers operationally, we can reinforce the concept of self-governance," he says. "It is a way to demonstrate our performance; we can essentially earn our way toward more operational self-governance.

"The expectations on the performance of the laboratory are very high. And we have to all share in that, and I don't think that's going to change."

Executive staff takes on nitty-gritty of planning, implementing new structure

Sandia executive staff is leading an effort that will involve key personnel from the line and operational organizations to plan, implement, and communicate details and impact of the new Laboratory structure, including new organization numbers, office moves, and the realignment of human resource and business office information systems. The committee, led by Carol Yarnall (12100), will meet over the next two months and will work closely with Sandia's Executive Management. Efforts will be made to minimize the impact of the new Laboratory structure as much as possible in terms of cost, business operations, and human resource information systems. Information about the changes and implementation timetables will be published on a regular basis in the *Lab News* and *Sandia Daily News* and will be posted on the transition web site on Sandia's internal web home page.

Reorganizing Sandia for new challenges

Labs' new structure emphasizes consolidation, operational excellence, 21st-century engineering

In his interview with the *Lab News*, new Labs Director Tom Hunter talked about the drivers behind the new organizational structure.

"Let's just go back to where we were on the 29th of April," he says. "At that time all we knew was that Paul Robinson was leaving and I would be taking over as Laboratory director. We also knew we had some pending retirements — Pace VanDevender [VP 1000] had announced his retirement. And we knew that we had one vice president, Lenny Martinez, going on assignment to support Lockheed Martin's Los Alamos bid team. That changed the executive population by a total of three people.

"Armed with that knowledge, we [the Laboratory Leadership Team, which includes all the VPs and several selected directors] decided to take our strategic planning effort and convert it into one of strategic intent, establishing what it is we wanted to do as a laboratory, what we wanted to be. Once we had established that, then we could look at organizational restructuring — how we would like to structure the laboratory [to facilitate our strategic intent]. At the same time we had to replace a couple of executives. So, simultaneously, we had this question of how do we want to be structured and who do we want to have as executives.

"Now we have done all those things. We put together a proposed organization structure that had to be approved by our Sandia Corporation Board of Directors. In addition, NNSA/SSO [Sandia Site Office] needed to concur with our key personnel appointments. Both those things have happened."

In the planning process that has occurred over the past several weeks, Tom says, "We wanted to focus on a set of what we called visions for success — you could call these long-range objectives. In each of our mission areas we wanted to establish our view of what success would be. We talked about success in nuclear weapons, success in nonproliferation, success in all the different mission areas that we have. We defined, if you will, a future-state view of what the laboratory should be."

Operational excellence, transformation of engineering

In addition to defining mission success, Tom says the planning team placed a new, heightened focus on operational excellence.

"We wanted to have the whole leadership team engaged in assuring that the laboratory has the best possible approach to operations and operational performance. And we wanted to allow for the continuation — but with even more focus and emphasis — on what I have called the transformation of science-enabled engineering or science and engineering. We want to play a leadership role in the transformation of science and engineering.

"So those were the three areas we wanted to be sure we were focused on: A vision of success; operational excellence; leadership in the transformation of science and engineering."

The MESA complex, which will create a unique 21st-century, supercomputer-driven engineering design environment, will play a key role in Sandia's leadership of the transformation of science and engineering. So important is the MESA vision to the Labs' future that Tom has moved the MESA program office from Division 1000 to report directly to the Director's office. And, he says, John Stichman, the labs chief engineer as well as deputy director, will play a key role in integrating the MESA vision across all mission areas.

There were some specific intents going forward with the transition planning process, Tom says.

- Restate the importance of nuclear weapons to the Labs.
- Focus on operational performance and stewardship of Labs' capabilities.
- Focus on transformation of our engineering practices Labs-wide.

"And we wanted to allow for the continuation . . . on what I have called the transformation of science-enabled engineering or science and engineering. We want to play a leadership role in the transformation of science and engineering."

- Integrate all mission programs other than nuclear weapons more closely, but also integrate them with nuclear weapons.
- Emphasize the importance of personnel succession planning.
- Consolidate all the centers into larger divisions to enable VPs — and directors, too — to play more strategic roles, while placing more operational responsibilities on the level II managers.
- Assure a strong link between the president's office and all of the VPs.

Tom says he thinks the new organizational structure largely accomplishes those intentions.

"The thing that I would hope we can highlight in all this is that it will allow us to focus on our mission and support our mission customers more effectively but also allow us to achieve operational excellence," Tom says.

A team effort by LLT

Tom emphasizes that the entire transition and reorganization process has been very much a team effort.

"We made sure that every member of LLT was involved and had input into the structure that we would use," he says. "We spent quite a bit of time as a team forging out affinities and the way things fit together. And we as a team used our succession-planning process to identify our next VPs."

"We made sure that every member of LLT was involved and had input into the structure that we would use. We spent quite a bit of time as a team forging out affinities and the way things fit together."

Though the overall effort was a team process, Tom did not embark on it without ideas of his own. "Certainly in the last several months the idea of how to better structure the Labs is something I've given quite a bit of thought to. Having the nuclear weapons program responsibility [as senior VP for the Nuclear Weapons SMU] and having to bring a level of coherence across a large set of the laboratory gave me some strong indications that we can have more coherence across all the organizations, and that we can focus our efforts toward better operational performance if we spend some time being really clear about roles, having deliberate processes that are as simple and practical as possible and are well understood. Those were ideas that I carried forward. And we tried to realize that in this restructuring.

"And then, of course, there's one area that all of us are concerned with and that I've thought about a lot myself — you build an organization for and around people. And how you engage the people in the process. How we went about it was in large part based around our ideas of inclusiveness, of bringing people together, and then looking at the future development of people."

Joan Woodard will remain a deputy, take on nuclear weapons role

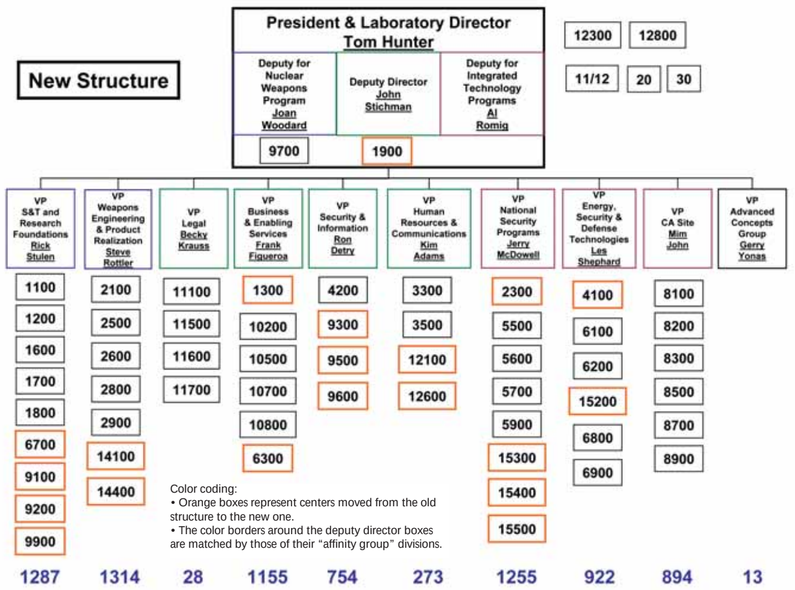
Joan Woodard will assume the role of Deputy Director for the nuclear weapons program. From 1999 to 2005, she served as the Executive Vice President and Deputy Director for Sandia.

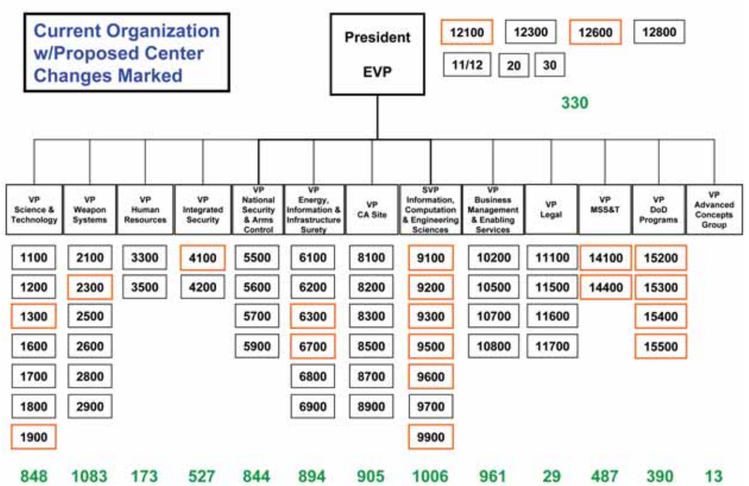
JOAN WOODARD

She chairs the laboratory management council for Nuclear Weapons.

Joan joined Sandia in 1974 and conducted research in areas ranging from economic analysis of energy technologies and heat transfer phenomena during combustion processes to waste management and pollution prevention. She has also served as Director of the Environmental Programs Center, and has worked in the national security and weapons programs of the lab leading a materials support group and managing the Neutron Generator and Explosives Component Center. Prior to 1999, Joan was Vice President of the Energy Information and Infrastructure Technology Division.

Joan holds a PhD in mechanical engineering from the University of California, Berkeley; an MS in engineering economic systems from Stanford University; and a BS in applied mathematics and computer science from the University of Missouri-Rolla (magna cum laude).





Sketches of the four promoted Sandia executives

Here are brief sketches of the Sandians promoted to executive positions in the organizational restructuring announced by Tom Hunter last week:

John Stichman

John Stichman is promoted to Deputy Director of Sandia from his present position of Vice President of the Weapon Systems Division.

JOHN STICHMAN

He has been at Sandia since 1972. In his current VP position he has been responsible for all aspects of Sandia's nuclear weapon engineering — from concept and design development through stockpile support and weapon retirement.

Previously he was Director of the New Mexico Weapon Systems Engineering Center. Before that he was Director of the Surety Components and Instrumentation Center, responsible for development of telemetry systems, electronic and electromechanical components, and subsystems for implementing safety and security in nuclear weapons, and other defense-related systems.

Earlier in his Sandia career John managed development of diverse electronic systems for weapon arming and firing, flight computers, real-time imaging radars, and automatic target recognition.

Before coming to Sandia, he worked in the Data Systems Division of Hughes Aircraft Company.

John has B.S., master's, and PhD degrees in electrical engineering from the University of Wisconsin in Madison. He is a senior member of IEEE and has received the Award for Exemplary Civilian Service from the Department of the Air Force. He has published in the areas of instrumentation and control, implantable medical electronics, and real-time optical computing. He holds two US patents and serves on the Industrial Advisory Board for the Dean of the University of Wisconsin College of Engineering.

Al Romig

Al Romig is promoted to Deputy for Integrated Technology Programs from his current position as Vice President, Nonproliferation and Assessments, which he has held since 2003. From 1999-2003 he was Vice President, Science and Technology Partnerships, and Chief Technology Officer.

AL ROMIG

Al joined Sandia in 1979 as a member of technical staff in the Physical Metallurgy Division. He became supervisor of the division in 1988. Two years later, he became Manager of the Metallurgy Department and was promoted in 1992 to Director of the Materials and Process Sciences Center. In 1995 he was named Director of Microelectronic and Photonics. In 1998 he became Director of Microsystems Science, Technology, and Components. He was named a VP the next year.

Al is a member of the National Academy of Engineering and is active on a number of NAE/NRC committees and boards. He is a fellow of the American Association for the Advancement of Science and a fellow and former president of ASM, International (formerly American Society for Metals). He is also a fellow of TMS (The Minerals, Metals, and Materials Society).

He has received several awards for his pioneering work in analytical electron microscopy and solid state diffusion, beginning with the Burton Medal of the Electron Microscopy Society of America to an Outstanding Young Scientist in 1988.

He received his B.S., M.S., and PhD degrees in materials science and engineering from Lehigh University, in 1975, 1977, and 1979, respectively.

J. Stephen Rottler

Steve Rottler is promoted to Vice President for Weapons Engineering and Product Realization Division 2000 from his present position as Director of the New Mexico Weapon System Engineering Center.

STEVE ROTTLER

Steve has been at Sandia since 1985, when he joined the labs as a Senior Member of Technical Staff in the Computational Physics and Mechanics I Division after getting his PhD in nuclear engineering at Texas A&M University. He also received bachelor's and master's degrees in nuclear engineering from Texas A&M, where he taught engineering design as a member of the faculty.

For the next six years he was responsible for research, development, and application of multidimensional radiation-hydrodynamics codes for nuclear weapon design and effects analysis and led a team of five research staff in state-of-the-art code development.

He became Manager of the Computational Fluid Dynamics Department in 1991, leading R&D and applications of computational tools for simulation of coupled problems in materials processing and environmental applications. He became Manager of the System Validation and Certification Program Office in 1994, Manager of the Defense Programs Liaison Office in 1996, and Manager and Technical Assistant to the Vice President, Weapons Systems Division, later in 1996.

Steve was promoted to Director of the Nuclear Weapon Program Integration and Studies Center in 1997 and became Director of the Electronic Systems Center in 1999. He was appointed Director of the New Mexico Weapon System Engineering Center in 2000.

Richard Stulen

Rick Stulen is promoted to Vice President, Science and Technology and Research Foundations, from his current position as Director of Homeland Security Systems and Development Center 8100.

Rick received his PhD in solid state physics from Purdue University and joined Sandia as a member of the technical staff in 1976. Soon thereafter, he helped establish Sandia's first synchrotron radiation research effort with Mike Knotek, aimed at understanding the properties of hydrogen on surfaces as they relate to Sandia's hydrogen storage programs.

In 1984 he was promoted to a level I management position in surface science and chemical physics managing a portion of the Basic Energy Sciences program in materials. In the early 1990s he helped initiate one of Sandia's first CRADAs under DOE's technology transfer initiative to develop compact radiation sources for next-generation lithography options in the microelectronics manufacturing arena.

RICK STULEN

This subsequently led to the formation of the Extreme Ultraviolet Lithography program and an industry-funded $300 million, three-lab CRADA, jointly with Lawrence Livermore and Lawrence Berkeley national laboratories. He served as Deputy Director of Science-Based Engineering and Technology and CEO and COO of the Extreme Ultraviolet Lithography Virtual National Laboratory, a consortium of the three labs.

Sandia promoted him to Director of Materials and Engineering Sciences (8700) in 2001. In 2003 he assumed leadership for Exploratory Systems and Development Center 8100, currently named the Center for Homeland Security Systems and Development.

Throughout his career Rick has organized and chaired international workshops and published extensively in areas related to surface science and EUV lithography. In 1999 he received Lockheed Martin's prestigious NOVA award for Technical Excellence.

Can sensors foster community without invading privacy?

New capabilities can help defeat terrorism but have drawbacks, ACG group finds

By Neal Singer

Joe McCarthy, a young Seattle technology entrepreneur, was earnestly explaining to a group of 20 Sandians a week ago Tuesday how radio-frequency tags, sensors, and large monitors had been used in new ways to create a feeling of community at a computing convention in Seattle.

JOE McCARTHY, Seattle technology entrepreneur.

Security-conscious Sandians, ever cautious, were interested in his ideas but presented him with a problem.

McCarthy had been invited to explain the value of electronically aided personal interactions and their resultant social ramifications at a colloquium held by Sandia's Advanced Concept Group on May 31. The ACG is exploring the uses of technology to build community for homeland defense purposes.

At the convention, he said, a sense of community increased when registration consisted not only of institutional affiliation but electronic pictures of participants' families, dogs, hobbies, books admired, recent foreign travel, and so on. When participants went for coffee, a radio-frequency tag on their ID card activated a display of this personal data on a large nearby monitor. Instead of being merely a name on a hard-to-read card pinned on their chests, participants found they had presented conversational openings to those around them. Thus, anonymity had been lessened and personal interactions strengthened.

"But wouldn't these ID cards be reasonably simple to copy?" interrupted audience member Glen Kuswa (6202), speaking on behalf of humanity's dark side. "It would probably be a simple task."

"Hmmm," said McCarthy. "I didn't think about that."

A quiet voice from the back of the room said thoughtfully, "Welcome to Sandia Labs."

The Sandians seemed to find McCarthy's social insights thought-provoking even while peppering him with possible problems.

McCarthy listed the large number of ways people use modern tools to express their identities. Among the things he mentioned over the hour-and-a-half talk were magnet-held messages on cars, vanity license plates, tote bags with photos on them that encourage conversations, web blogs, cell phones, online dating services ("40 million users," he said), eCommerce with its user reviews of products, the sharing of family pictures with guests by using changing digital displays at home parties, and the availability of rf electronic communication at "hangouts at the heart of the community," which he illustrated with images from cafes, coffee shops, bars, and even a hair salon in Milwaukee.

Despite his enthusiasm, he recognized past problems. When Elaine Raybourn (15241) asked if there was thought of showing personal data on screens other than in the convention room occupied by the badge holder to achieve greater possible contact, he said he had considered greater sharing of personal data but that Intel had a private squad — "a team of four people" — concerned with uses of technology that could be portrayed in an evil light. "They asked me if I really had to do this," he said.

Sandia VP, principal scientist, and ACG Director Gerry Yonas (16000) said of the Intel team, "We need to talk with these people."

When Gerry also asked, "How many people actually want anonymity?" McCarthy quipped that "the price of anonymity is a 10 percent discount," but John Whitley (16000) commented that this was because people "hadn't experienced [information] abuse yet, like walking by a pet store in the mall and having people come out to sell you dog food, or photos of your grandkids taken by satellite."

Curtis Johnson (16000) felt that there were areas of information where government control, not commercial incentives, were necessary: "If you're a pilot, I don't care if you enjoy the process, I want you registered."

The effort by ACG to establish a workable context for sensors and information without incurring "the Poindexter effect," as Gerry put it, is ongoing. John Poindexter, a government official, opened a new approach to interpeting complex data, and was criticized in certain circles by people who possibly misinterpreted what he was doing, said Gerry. "When you do something new and different, it can lead to criticism for something you never intended in the first place."

More information on McCarthy can be found at his website, http://interrelativity.com/joe/.

Feedback

Q: *Could a link be created in the Sandia Directory (phone book) for Bldg/Rm when calling up an individual's information and linked to the appropriate map locator?*

A: Yes, links to appropriate maps for an individual's Bldg/Rm could be created in the Sandia Directory (phone book) and it's a great idea. Currently we can only link to existing maps found within the FGIS Building/Map index. It's been decided that your suggested enhancement will be prioritized with other modifications. We hope that we can make it available to Sandia by the end of the fiscal year. *— Jim Stromberg (9524)*

* * *

Q: *I have a question about proper dress here at Sandia. To preface my question, I see from the Employee Handbook out on the web that Sandia does not have a formal dress code but under the personal appearance section does give the following guidance: "Although Sandia does not have a dress code, you should use common sense and mature judgment in determining appropriate and suitable dress."*

I appreciate that Sandia allows us to express ourselves and be comfortable while at work through such a broad definition of dress. However, a recent style among the younger set of ladies in society, which has been appearing here at the labs, should probably be addressed. This style is one where the midriff is either always exposed or exposed at any slight movement by the person. The views provided are unwanted at a minimum and unwanted/very unsightly (putting it mildly) at a maximum. Can this be addressed somehow in some forum?

A: It is important to note that appropriate and suitable dress in the workplace can have many positive implications in the workplace. With proper dress, employees have the opportunity to avoid and minimize safety issues and workplace hazards. In addition, professionalism is paramount when it comes to client contact, therefore exercising mature judgment when determining appropriate dress attire can have an impact on our business settings by giving visitors and customers a positive impression of our employees.

Managers and employees are responsible for making the final determination about the dress requirements for a particular situation that coincides with the vision and mission of Sandia National Laboratories. *— BJ Jones (3500)*

Electrical safety shorts

Caution for GEM cart users

Everyone who uses GEM carts is urged to take special care to properly store extension cords used for GEM Cart charging. Proper extension cord storage will help keep them free of damage and in safe working condition and prevent people from tripping on them. Extension cord requirements are located in the Sandia ES&H Manual Section 4B and the Electrical Safety Manual Chapter 2 Section 2.11. Some extension cord requirements that are Gem Cart relevant include: 1) protect extension cords from damage; 2) prior to use, inspect all extension cords and power strips for damage such as deformed or missing pins and damaged outer jacket or insulation; 3) remove damaged cords from service.

Take Note

Retiring and not seen in *Lab News* pictures: **Benny Rose** (1751), 25 years.

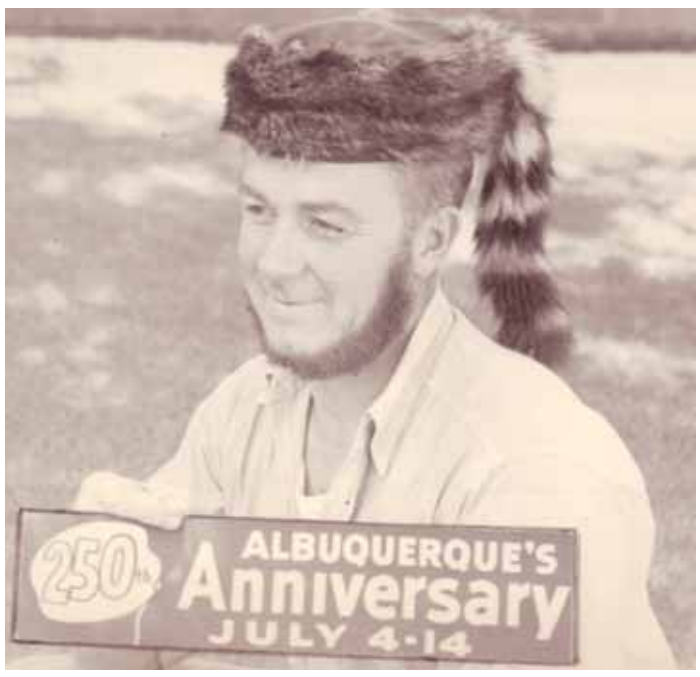
Sympathy

To Gene Hertel (9116) on the death of his wife, Lynn Hertel, April 2.

Favorite Old Photo

Bearded Sandians marked city's 250th birthday

CELEBRATION AND CONTEMPLATION — As the City of Albuquerque prepares to celebrate its 300th anniversary in 2006, Sandia retiree Carl Hawk sent us this 1956 photo of him honoring the city's 250th birthday celebration. The picture was taken by Ben Bright, his neighbor and supervisor at Sandia at the time. Carl says many Sandians grew beards for the 250th anniversary, "and those were the only beards seen at Sandia, at that time." Carl, who has always had a philosophical bent, retired early, at the end of 1974, "to have plenty of time to think," he says. He and his wife still live in the house they bought in Albuquerque in 1952, and he says the mortgage was paid off 35 years ago. "Almost every morning for the past 30 years I have been up by 6:00 sitting at my kitchen table with my coffee and writing tablet. They didn't let me be boss at Sandia, but now I am boss of my 'little Sandia.'"



Jumpin' Jehosephat!

Ron Weagley celebrates his 50th birthday with 50 jumps — all in one day

It's one of the milestones in life: your 50th birthday. Hardly anyone passes it without giving thought to life's big questions. Questions like — can I jump out of an airplane from 3,000 feet 50 times in one day? Big questions.

Ron Weagley (9538) asked himself that question, but unlike most folks, who would go through the rest of their years just wondering if it were possible, Ron decided to find out.

With the help of Skydive New Mexico, Ron — who, after all, isn't exactly a greenhorn, with more than 800 jumps to his credit — set out to make one jump for each year of his life. 50 Years. Fifty jumps. In one day.

And with three Cessna 182s in support at the Belen Alexander Municipal Airport — those babies can *climb* — Ron started his quest at sunup. By sundown — go! go! go! — he had done it. What a day!

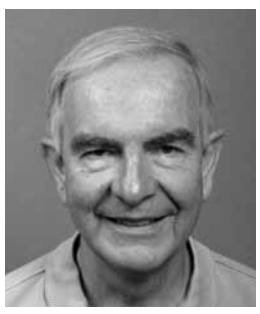
Ron jumped into this scheme fully aware of the risks, but, as he put it, "The biggest risk in life is not partaking in something you would love to do and then you can't do it because it's too late."

Next up: 60 jumps?

Photos by Randy Montoya

Mileposts

New Mexico photos by Michelle Fleming
California photos by Bud Pellitier



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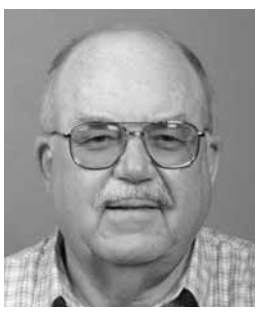

Daniel Talbert
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Martha Campiotti
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Mark Schaefer
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Gary Ashcraft
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Dennis Rieger
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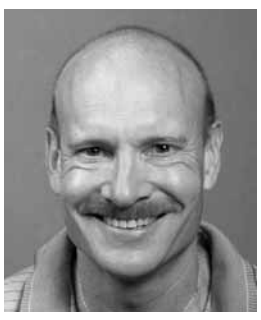

Timothy Wheeler
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Daniel Barton
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Robert Chambers
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Barbara Funkhouser
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James Mangum
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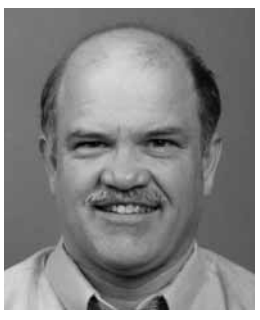

Fred Oppel
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Roger Smith
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Mark Stavig
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William Tedeschi
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Gus Galves
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Amy Haas
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Mike Hagengruber
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Paul Helmick
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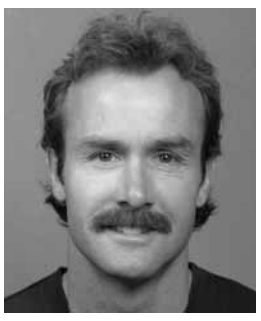

Marc Kniskern
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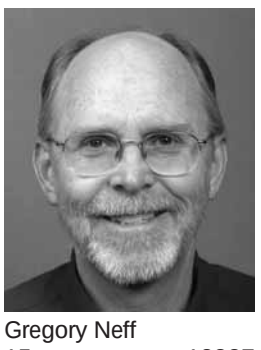
John Mounho
15 10501



Gregory Neff
15 12337

Beverly Ortiz
15 9342

Gina Rightley
15 2125

Patsy Rowland
15 10826

Juan Torres
15 6202

Feedback

Has Labs considered true cost of frequent management changes/rotations?

Q: *I understand upper management's wish to foster a "culture of change" and their wish to rotate members of management to broaden the managers' experience. My co-workers and I really have to wonder where the line is drawn between needed change and chaos. In the last eight months we've had a new Level 1 manager, new Level II manager, new Director, new VP, and new President of the Laboratories. In the midst of regulatory changes, budget changes, customer requirement changes, employees need some stability in their work life to help them make the all the required transitions. The cynical joke around my workplace is, "When in doubt, reorganize!" Has the Laboratories calculated the true cost of frequent management changes and rotations? Does the benefit really justify the impact on staff's productivity?*

A: First, thank you for acknowledging the practice of rotation to broaden experience, and your concern for balance and stability. Clearly, numerous and rapid management changes, particularly when several individuals along one chain are affected, can be disconcerting in a variety of ways. Just one such event or a retirement, for instance, can trigger a variety of changes.

Some interlocking points now:

The post-and-bid process is an important tool for staff transition, career growth, and ultimately a successful operation. In addition, any organization dedicated to operational excellence and long-term success must have specific plans for management rotation — especially director and VP — to broaden their experience and to achieve a strong sense of commitment to the organization as a whole. In fact, succession planning was a topic mentioned in general terms on several occasions during the April 13, 2005, Spring Managers Conference, attended by more than 500 individuals representing all levels of management.

You are right that stability can be very important, but today, more than ever, successful organizations like Sandia need an agile management team to deal with changes — in our case to deal with changes in national security needs. Additionally, Sandia must be prepared for changes in the economy (which impact budget, ability to staff, etc.), changes in technology, etc. For any organization to remain viable in the face of constant world changes, we must develop an agile, adaptive workforce. While stability is desired, we must always be mindful that our environment requires we change in order to remain the innovative organization we are today.

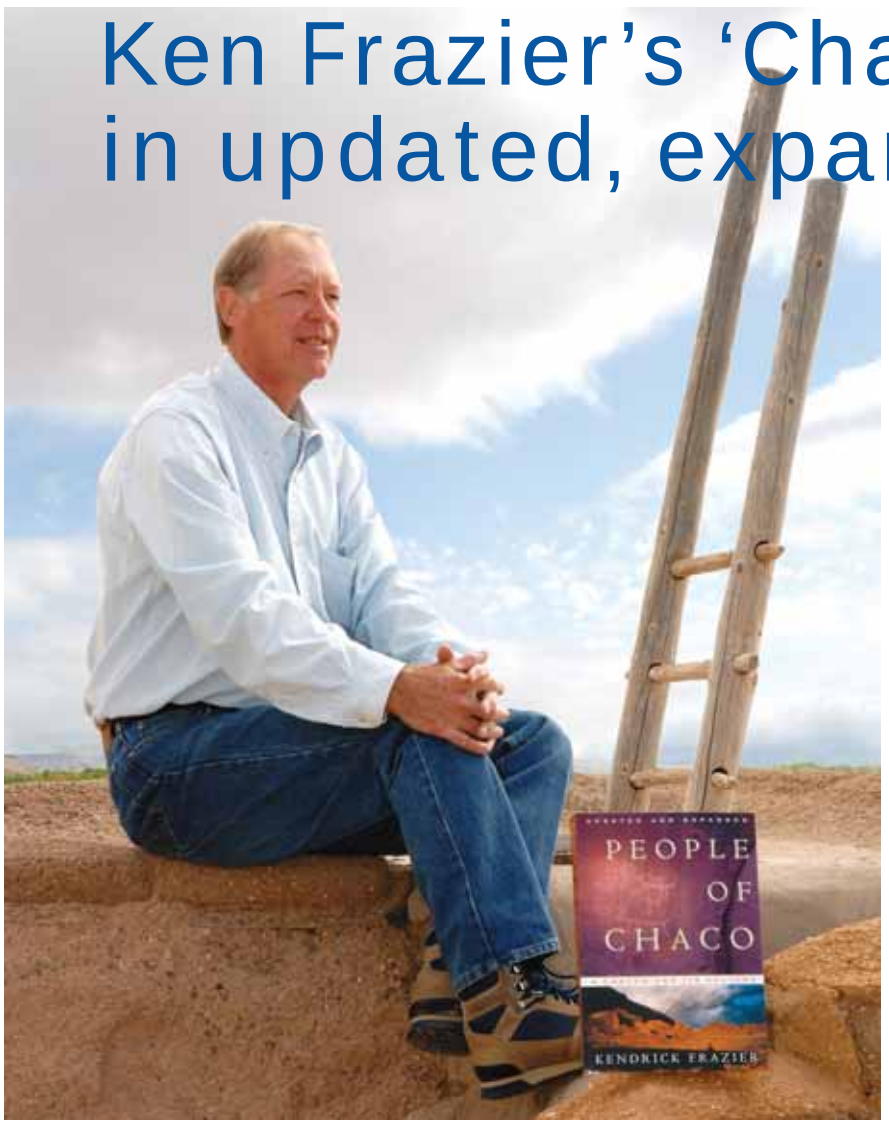
It is vital that our workforce maintain its effectiveness in times of change and important that management understand the impact of change on that effectiveness. Vital to the success of change — both planned and quick — is good communication in both directions along the management-staff chain. Those making decisions must respect corporate values and understand employee concerns.

Consequently, it is essential that staff and their immediate managers maintain good communication so the true cost of decisions of any sort — you ask about "true cost" and "productivity" — are part of the decision-making process. When changes to one's management chain are significant — the case you describe, for example — it is especially important for staff to communicate to managers their sense of disruption in the workplace, as well as their sense of well-being. When this occurs, the Labs, indeed, has a mechanism for determining, or at least considering, the return on investment (ROI) when making changes.

In conclusion, it is paramount, as President Tom Hunter told those 500-plus gathered managers at the recent Spring Managers Conference, that they — managers of all levels — recognize their responsibilities. An example: "We don't view ourselves as needing a wholesale transformation. We need to view ourselves such that every step is a step forward. That everything we do builds on what we have and makes it better or adds a new dimension. We'll spend as much time as we can as a matter of principle to make sure we're clear and that communications work. And, there's where you all will come in because you are the key part of communications around this Laboratory. We need your help in communication. We need your strength and skill in reaching out to that wonderful set of staff who support us everyday."

— Rod Geer, Sr. Administrator, Public Relations and Communications Center (12600)

Ken Frazier's 'Chaco' book published in updated, expanded edition



Lab News Editor Ken Frazier's book *People of Chaco* has just been published in a new updated and expanded 2005 edition with four new chapters.

The book chronicles the pre-Puebloan culture (A.D. 850-1130) that built the magnificent multistory sandstone-slab buildings ("great houses") in Chaco Canyon in northwestern New Mexico, now the site of Chaco Culture National Historical Park.

W.W. Norton & Co., New York, the publisher, calls *People of Chaco* "the classic work on the mysterious canyon of New Mexico, updated with the latest archaeological and anthropological findings."

Ken says *People of Chaco* has been in print continually since the first hardback edition in 1986, followed by the first trade paperback edition in 1987, which went through seven printings. Ken then added an extensive new chapter updating all the research for a 1999 edition. About 18 months ago Ken and his publisher decided that another update was merited.

"I started researching again early last year, and I quickly realized that there has been an astonishing amount of new research into Chaco in the past five years," says Ken. "So this turned out to be a major expansion and update over previous editions. What was one new chapter in the 1999 edition became four new chapters in the 2005 edition."

One new chapter reports on, among other things, how all the wood used in Chaco was processed and on new geochemical studies that help identify the forests it came from. It also gives new insights into the Chacoan "cityscape." Another expands on Chacoan cosmographic expression. It also deals with the touchy question of violence in the prehistoric Southwest and attempts to put it into some perspective. The final chapter chronicles the Chaco Synthesis Project (1999-2005), an ambitious attempt, just now concluding, by archaeologists to freshly review all the previous research into Chaco and come up with a grand new synthesis.

Ken also wrote a new preface and made a few other changes here and there, including adding two new photos of Pueblo Bonito by *Lab News* photographer Randy Montoya. In his preface Ken thanks friends and colleagues at Sandia and elsewhere for encouragement and support. The 2005 edition of *People of Chaco* is available in local bookstores.

Photo by Randy Montoya

Texas Tech wins Sandia MEMS design competition

By Neal Singer

Students from Texas Tech University's Electrical and Computer Engineering Department have won this year's annual MEMS design competition sponsored by Sandia.

"Grades became secondary as students concerned themselves with turning ideas into designs," says Texas Tech professor Tim Dallas.

Said contest judge and University of Utah professor Bob Huber, "The design tools and production facilities needed for a real learning experience in the MEMS field are too expensive for all but the wealthiest schools to provide. This program brings these facilities within reach of many more schools." He says students respond "with some super designs."

Texas Tech student lead Phillip Beverly and team advisor Tim Dallas have been awarded a trip to Sandia to present their ideas and tour its facilities, say Harold Stewart (1749) and Dave Sandison (1769), who run the University Alliance for Sandia. Texas Tech has also been awarded membership in the international MEMS organization MANCEF.

In addition, student teams from the University of Oklahoma at Norman, Albuquerque's Technical Vocational Institute, and the University of North Carolina at Charlotte will have their designs fabricated for free, using the world's most advanced silicon surface micromachining fabrication process, SUMMiT V™, developed by Sandia.

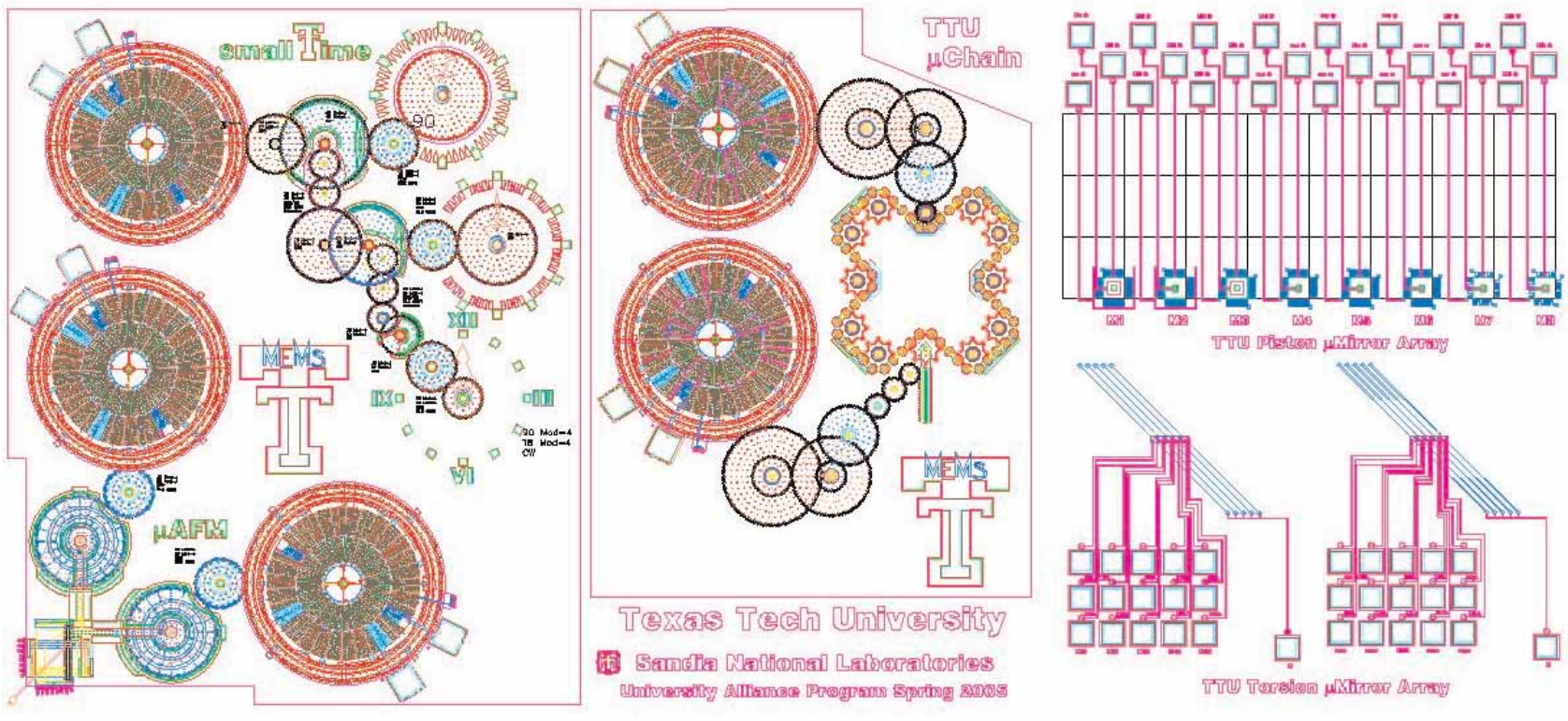
The winning entry was a combination of four individual designs that included a micromechanical clock, a microchain, a torsion micromirror, and a micron-sized atomic force microscope. The design was chosen based on the use of SUMMiT's specific strengths, usefulness of the design for educational demonstrations, and uniqueness of design.

Institutions must be members of Sandia's MEMS University Alliance for their students to participate. Membership is available to any US institution of higher learning. Members receive course materials structured to help start or further develop their own MEMS program, licenses for Sandia's cutting-edge MEMS design software, and other benefits. All University Alliance members, regardless of contest participation, receive MEMS parts to use in their curriculum. Ten schools currently are members of the Alliance.

Sandia recognizes the need to be proactive in attracting and training the next generation of the MEMS workforce. The Alliance supports microsystems education with cost-effective programs and by building relationships with US students and professors. This is the first year of the design competition.

For more information on the contest or Sandia's MEMS University Alliance, contact Natasha Bridge at nabridg@sandia.gov.

For information about becoming a member of the University Alliance, contact Kathryn Hanselmann at kdhanse@sandia.gov.



TEXAS TECH'S winning MEMS design has won its student lead Phillip Beverly and team advisor Tim Dallas a trip to Sandia to present their ideas and tour the Labs' facilities.