Paul Hommert lays out new org structure at first town hall meeting as Labs director

Executive leadership framework stresses stronger integration to support mission delivery

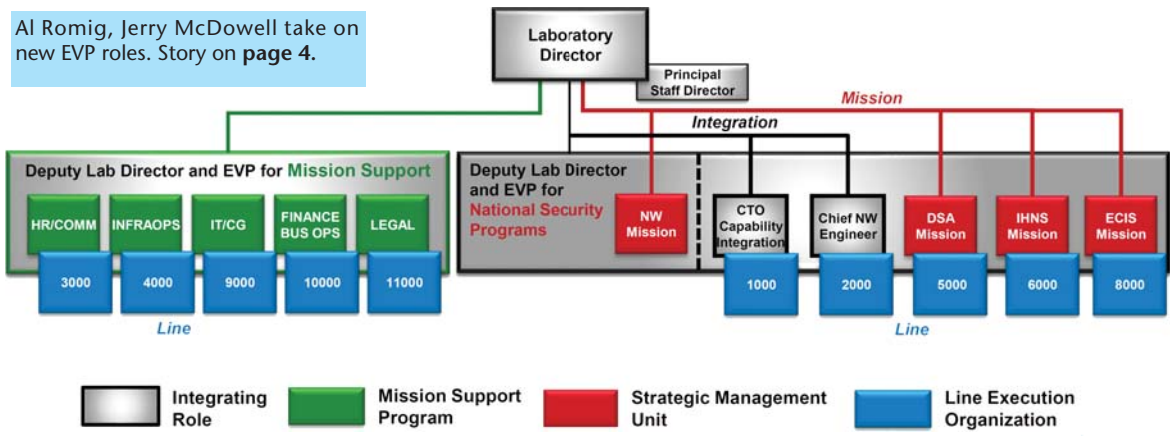
By Mike Janes

In his July 1 town hall meeting, new Sandia President and Laboratories Director Paul Hommert provided a first look at how the roles of the Labs' executive leadership will be redefined in his administration.

"These changes are designed off of a leadership platform built over years by Tom [Hunter]," Paul stressed.

(Continued on page 4)

Al Romig, Jerry McDowell take on new EVP roles. Story on **page 4.**



R&D 100

Sandia wins four R&D 100 awards in wide-ranging display of expertise

Photovoltaic-coated batteries, water security, rapid medical diagnosis, simpler thin-film coatings selected

Story on page 5

Meet Paul Hommert . . .

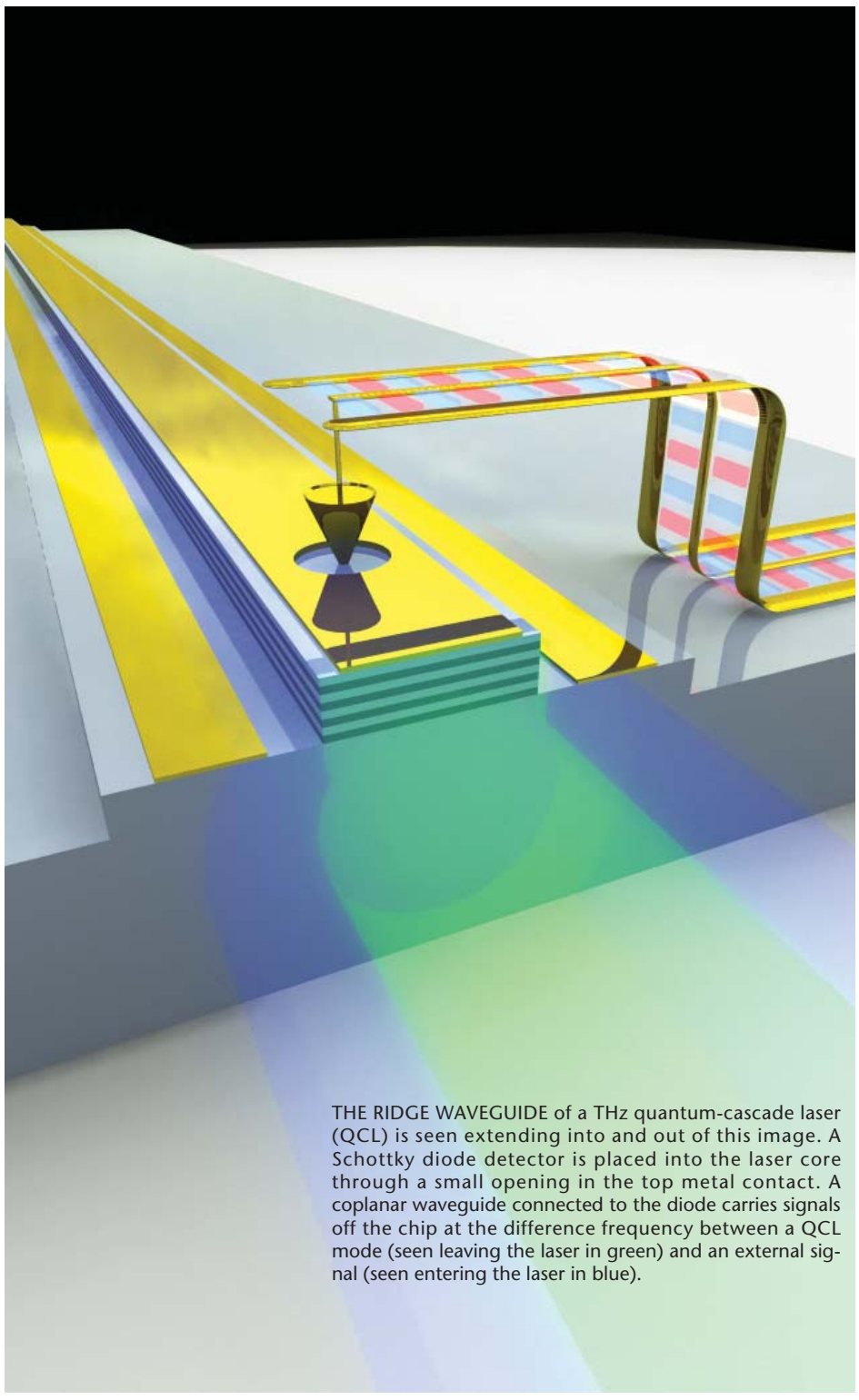
. . . the kid who read the encyclopedia for fun began a lifelong love affair with science after hearing President Kennedy's inspiring words about going to the moon. Read more about Paul in a story on **page 6.**

Sandia LabNews

Vol. 62, No. 13 **July 16, 2010**

Managed by Lockheed Martin for the National Nuclear Security Administration

Sandia National Laboratories



THE RIDGE WAVEGUIDE of a THz quantum-cascade laser (QCL) is seen extending into and out of this image. A Schottky diode detector is placed into the laser core through a small opening in the top metal contact. A coplanar waveguide connected to the diode carries signals off the chip at the difference frequency between a QCL mode (seen leaving the laser in green) and an external signal (seen entering the laser in blue).

Sandia achieves integration of terahertz quantum-cascade laser and diode mixer into a monolithic solid-state transceiver

Improved control of 'neglected middle-child' frequency range offers potential benefits

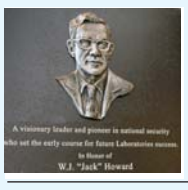
By Nigel Hey and Neal Singer

The first steps toward reducing the size and enhancing the functionality of devices in the terahertz (THz) frequency spectrum have been taken by Sandia researchers.

By combining a detector and laser on the same chip to make a compact receiver, the researchers rendered unnecessary the precision alignment of optical components formerly needed to couple the laser to the detector.

"Similar to moving from discrete transistors to integrated chips in the microwave world and moving from optical breadboards to photonic integrated circuits in the

(Continued on page 5)



Former Sandia Executive VP Jack Howard has become the third Sandian to be inducted into the Labs' Hall of Fame. The honor recognizes former employees who made pivotal contributions that have significantly enhanced Sandia. Read about Jack's career and legacy in a story on **page 7.**

Inside . . .

Sandia Total Health and prescription drug coverage. See page 8.

TAKECHARGE

Kaiser HMO and CIGNA In-Network members: Transitioning to Sandia Total Health . . . what it means to you. See page 9.

That's that

This is the first issue of the *Lab News* to be published during what will come to be known as the Hommert era. My colleagues Mike Janes and Patti Koning, who worked closely with Paul when he was the California lab director, had a chance to interview him recently for the *Lab News*. Mike's story (on page 6) does a nice job of telling us a bit about Paul Hommert the man, as well as Paul Hommert the distinguished and accomplished engineer and technical manager.

Paul's tenure will mark the fourth Labs director I've worked under. I came right at the tail end of Al Narath's tenure. Al was followed by Paul Robinson and, of course, Tom Hunter. In my capacity as a writer for and then editor of the *Lab News*, I interviewed both Paul Robinson and Tom several times. And though I've never interviewed Paul Hommert, I have watched his all-hands meetings as California lab director and as head of the nuclear weapons program. And I perceive a common characteristic among all three leaders. These men are profoundly thoughtful about what Tom recently called "the awesome responsibility" of this laboratory and its role in maintaining the safety, security, and reliability of the nation's nuclear stockpile. Profoundly thoughtful. It speaks well of Sandia that we have had such leaders. And it speaks well of America that our most fearsome weapons are stewarded by men like these.

* * *

Carthago delenda est.

With those words, Cato the Elder, one of the senior statesmen in the Roman republic, ended his every speech on the Senate floor. "Carthage must be destroyed!" Cato was, in fact, calling for a war of vengeance to destroy once and for all Rome's persistent and tenacious enemy in the Phoenician city-state of Carthage. No matter what he was talking about — the grain supply from Sicily, the status of the diplomatic mission to Athens, the drift toward Grecian decadence he perceived in his fellow Romans — Cato would end with a thumping "Carthage must be destroyed!" And in the Third Punic War (149-148 BC), Rome did just that, utterly flattening the city and selling the survivors into slavery.

So, what's the point of this history lesson? Well, 41 years ago today (July 16, 1969) America sent three astronauts — Neil Armstrong, Buzz Aldrin, and Michael Collins — on their epic voyage to the moon. But Armstrong and Aldrin's bootprints had barely been planted in the lunar soil when Congress and the Nixon administration began to scale back the nation's ambitious plans for space exploration.

In subsequent decades, the US has created and maintained the impressive space shuttle fleet (to be retired this year) and was the general contractor (so to speak) for the International Space Station. But we haven't gone back to the moon. And as of now, we don't really have any plans to do so. And that's where Cato the Elder comes in. We need a senator today, someone respected on both sides of the aisle, to end his or her every speech with a rousing, "We must return to the moon!" *"Reverte ad luna!"*

By why? I think John F. Kennedy's words, from almost half a century ago, still answer the question pretty effectively: "But why, some say, the moon? Why choose this as our goal? . . . We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the others, too."

See you next time. Or make that *"Reverte ad luna!"*

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

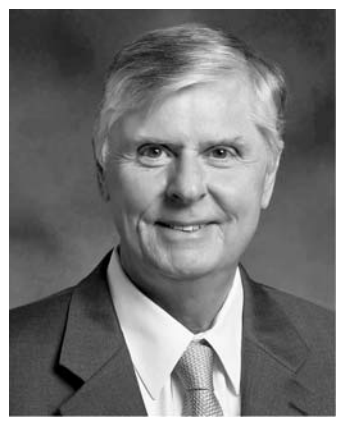
Former Sandian Don Cook appointed deputy administrator for NNSA Defense Programs

By Neal Singer

Former Sandian Don Cook has been confirmed by the US Senate as NNSA deputy administrator for Defense Programs.

From 1977 to 1999, Cook led Sandia efforts in pulsed power accelerator design and experimentation, fusion research, hydrodynamics, radiography, diagnostic development, and computational code development.

He managed Sandia's Inertial Confinement Fusion program from 1984-1993, and was director of Pulsed Power Sciences from 1993 to 1999.



DON COOK

In 1999, he took over direction of the MESA Program Center, which led design and construction of Sandia's largest project, the Microsystems and Engineering Sciences Applications (MESA) complex, completed in 2008.

In 2003, Cook also assumed program director responsibilities for Sandia's infrastructure program and for its Safeguards and Security Technologies Program.

He was managing director of the Atomic Weapons Establishment (AWE) in the UK from 2006 to 2009.

In a news release issued by NNSA following Cook's appointment, NNSA Administrator Tom D'Agostino said, "Dr. Cook brings a tremendous amount of experience to this position as NNSA continues to transform from a Cold War-era nuclear weapons complex into a 21st century nuclear security enterprise. His background in science, technology, engineering, manufacturing, and executive leadership is a tremendous asset in helping to implement President Obama's nuclear security agenda."

In the same news release, Cook was quoted as saying, "I am both honored and excited to be a part NNSA's Defense Programs, while assisting with President Obama's nuclear security agenda. I look forward to working with the men and women of NNSA in preserving the safety, security, and effectiveness of the nuclear stockpile and to ensuring that our enterprise continues to lead the world in scientific discovery."

Cook graduated from the University of Michigan and received his doctorate from the Massachusetts Institute of Technology. He's a Fellow of the American Association for the Advancement of Science and the UK-based Institute of Physics.

Sandia LabNews

Sandia National Laboratories

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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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Lab News fax **505/844-0645**
Classified ads **505/844-4902**

Published on alternate Fridays by Media Relations and Communications Dept. 3651, MS 0165

LOCKHEED MARTIN

Emcore tragedy touches Sandia community

City of Albuquerque spokesman Chris Ramirez (far left facing camera) and Mayor Richard Berry (second from left) listen closely as Albuquerque Police Chief Ray Schultz briefs members of the news media Monday, July 12, on the tragic shootings at the Emcore facility in Sandia Science & Technology Park just outside the Eubank Gate at Sandia/New Mexico. Also listening, at Schultz's left, is Albuquerque Public Safety Director Darren White. Labs employees with offices in Sandia Science & Technology Park were sheltered in place for several hours during the incident and Sandia security and emergency personnel were on the scene to support city responders.

(Photo by George Rhynedance)

Sandians recognized for lifelong learning

By Karyn Scott

Lifelong learning has been a central aspect of Sandia culture since its earliest days. For decades, the Labs has supported — often quite proactively — a variety of programs aimed at providing opportunities for Sandians to broaden, deepen, and otherwise expand their skills through education and training.

Now, the Labs has taken a new step: formally recognizing Sandians who have been proponents and practitioners of lifelong learning in the Sandia culture. This year, for the first time ever, the Sandia Learning and Professional Development organization presented lifelong learning awards in two categories: the Sandia Lifelong Learner Award and the Sandia Leadership in Lifelong Learning Award. A total of 44 Sandians were honored in the two categories (see list below). The awards were presented during this year's Learning Expo.

The Sandia Lifelong Learner Award recognizes individuals who persevere in enhancing their knowledge, skills, and experience to stay relevant at work. The Sandia Leadership in Lifelong Learning Award gives recognition to leaders who proactively support learning in the workplace by influencing, motivating, and enabling others to be engaged in lifelong learning. "These awards are a terrific recognition of people who live Sandia's longstanding commitment to an environment of continuous learning," says Duane Dimos, director of Engineering Sciences Center 1500 and chair of the Labs' Strategic Education Committee.

To be eligible for an award, the employee had to be nominated by a fellow Sandian and nominations could be based on either formal and/or informal learning. All nominated employees received a certificate and were honored during the Learning Expo awards ceremony.

Nominations for next year's Lifelong Learner and Leadership in Lifelong Learning awards will be accepted during the second quarter of FY2011. So start looking around now for a friend, colleague, team leader, or manager who deserves an award for his or her dedication to continuous learning.

Lifelong Learners honored

LIFELONG LEARNERS gather for a group photo during an awards ceremony at the 2010 Learning Expo. (Photo by Lloyd Wilson)

Sandia Lifelong Learner Award recipients

- Wendell Jones (500)
- James Laros III (1422)
- David Smallwood (1523)
- James Redmond (1525)
- Salvador Rodriguez (1532)
- Malcolm Carroll (1725)
- Amy Moy (1735)
- Peter Oelschlaeger (1912)
- Elsa Glassman (3521)
- Suzette Beck (4031)
- Brian Bielecki (4200)
- Anthony G. Chavez (4826)
- Lavone Jones (4871)
- Jerry Langheim (5230)
- Kevin Fleming (5434-1)
- Barry Speltzer (6740)
- Jim Scott (8945)
- Cecilia Brown (9753)
- Jeanne Wallace (10248)
- Vicki Malone (10507)
- Betty Glover (10657)
- Delfinia Salazar (10657)
- Edith Johnson (10694)
- Gerald Hendrickson (12002)

Sandia Leader in Lifelong Learning Award recipients

- David Sandison (1110)
- Ronald Allen Knief (1382)
- Kathleen McCaughey (2700)
- Regina Griego (2950)
- Thomas Henderson (12321)
- Margaret Harvey (3021)
- Charline Wells (3520)
- Kevin Fahey (4241-3)
- Robert Huelskamp (5730)
- Georgianne Peek (6336)
- Steve Ratheal (6453)
- Ronald Lipinski (6774)
- Debra Post (8248)
- Michael Cahoon (9311)
- Steve LeTourneau (9511)
- Donald Devoti (10222)
- Berweida Learson (10660-2)
- Wendy Bechdel (10680)
- Lori Parrott (12140)
- Daryl McCollister (12314)

Learning Expo focuses on education, training opportunities

The Lifelong Learning awards were presented during the annual Learning Expo sponsored by Corporate Learning and Professional Development Dept. 3520. Learning Expos serve as awareness campaigns emphasizing and supporting continuous learning and development opportunities for all employees. This year's Learning Expo, a three-day event held in early May, focused on formal education and training, informal learning beyond the classroom, and leadership learning.

Award recipients talk about value of lifelong learning

Education is important to me because it provides the basis to make our dreams come true. Lifelong learning facilitates the opening of doors to many career opportunities. While the educational path for an adult learner isn't an easy path, the yields of improved self-esteem, growth, and career opportunities make it more than worth the effort. To be competitive requires one to be well-educated and continuously maintain or improve expertise. So, education is a criterion for anyone wanting to remain relevant and viable in their chosen field of endeavor.

ANTHONY CHAVEZ

Sandia's various educational programs facilitate the learning process by assisting you with every step on your path to success.

— Anthony G. Chavez, Sandia Lifelong Learner Award recipient

* * *

I was pleasantly surprised to find out that the Strategic Education Committee was presenting the Lifelong Learning Award, and even more so to learn that I was one of the recipients. I consider it a privilege, and an awesome responsibility, to be able to contribute to the knowledge base of Sandia's technical staff by serving as an instructor for ENGR400 – Product Definition. What we, as instructors, convey to the students has a direct impact on how we conduct business and, ultimately, on the quality of our work.

THOMAS HENDERSON

With respect to my own continued education, I appreciate that Sandia provided support for me to realize a personal goal of earning an MBA. Given the variety of internal courses offered at the Labs, along with the Tuition Assistance Program for continuing formal education, there are plenty of opportunities for us Lab employees to keep our knowledge base relevant. I think it's essential that we take advantage of that.

— Thomas Henderson, Sandia Leader in Lifelong Learning Award recipient

Paul Hommert's first town hall meeting

"We need to strive for focus and simplicity."

"I need to hear the good, the bad, and everything in between."

"I am counting on you just as you can count on me . . ."

(Continued from page 1)

The decision to restructure the executive leadership framework, he said, came only after considerable engagement with his transition team, discussions with Labs VPs, and feedback from recent listening sessions with employees.

Paul placed emphasis on four things, the first of which is to strengthen integration across Sandia's national security missions. Doing so will help reinforce Sandia as a national security laboratory with nuclear weapons as its core mission responsibility, and remove the perception that Sandia is two laboratories.

Another emphasis is around integrated mission delivery. "No member of the workforce walks through our gates who is not important to the delivery of our mission," Paul said. "The way we operate has to reinforce that thinking. I can't emphasize that enough."

Paul also aims to streamline Sandia's leadership decision-making and to clarify executive leadership roles and the responsibilities, authorities, and accountabilities that go along with those roles.

In the new executive leadership structure, several leadership councils and committees will no longer exist, Paul said. Among those being eliminated are the National Security Leadership Council, the National Security Technologies & Systems Leadership Council, and Laboratory Transformation Leadership Council.

"We need to strive for focus and simplicity," Paul said.

He laid out a straightforward reporting structure, with two deputy Laboratories directors and executive VPs: one — Al Romig — is responsible for Mission Support, while the other — Jerry McDowell — is responsible for National Security Programs.

As the executive VP for Mission Support, Al Romig will oversee Sandia's Mission Support Programs. In this capacity the VPs of Divisions 3000, 4000, 9000, 10000, and 11000 will report directly to Al, who will be responsible for providing the integration necessary to achieve integrated mission delivery.

As the new executive VP for National Security Programs, Jerry will wear two hats; he will oversee Sandia's nuclear weapons mission area and lead integration opportunities across all four Strategic Management Units (SMUs), which, in addition to the Nuclear Weapons SMU include the Defense Systems & Assessments; Energy, Climate & Infrastructure Security; and International, Homeland, and National Security SMUs.

In defining this integration responsibility for Jerry, and as a further simplification of the leadership structure, Strategic Management Groups (SMGs) have been eliminated.

The VPs of Divisions 1000, 2000, 5000, 6000, and 8000 will report directly to Paul.

In describing the way that Sandia's leadership will function, Paul referred to two teams — the Laboratory Leadership Team (LLT) and the Mission Leadership Team (MLT).

LLT, chaired by the Laboratories director, has three principal responsibilities: assuring mission performance, sharing the excellence of the Laboratories' accomplishments and its learnings, and communicating. More important, Paul said, LLT remains vital in offering the venue for all VPs to come together and bring an integrated focus on these responsibilities.

MLT is the venue where Paul, as chairman, along with the two executive VP and the five VPs responsible for mission delivery, come together to reach decisions that affect integrated mission delivery. MLT, Paul said, will help ensure that all Laboratories decisions are made in accordance with Sandia's overall mission and values. The previous structure, he said, sometimes allowed decisions to be inadvertently "decoupled" from the Labs' mission.

Paul asked all Sandians to observe the changes in leadership structure over the next several months, and invited feedback at future listening sessions.

"I need to hear the good, the bad, and everything in between," he said.

"It is my expectation," Paul said in closing, "that these changes will strengthen Sandia's ability to deliver the exceptional services that the nation requires of us, but we can only succeed if these changes positively impact your ability to contribute. Moreover, I am counting on you, just as you can count on me, to help make this happen."

Al Romig, Jerry McDowell will be executive VPs under new org structure laid out by Paul Hommert

Under the reorganization of Sandia's executive leadership reporting structure announced by Sandia President and Labs Director Paul Hommert during a July 1 town hall meeting, Sandia will operate with two executive VPs, Al Romig and Jerry McDowell.

Al will assume the responsibilities of executive VP and deputy Labs director for Mission Support and Jerry will serve as executive VP and deputy Labs director for National Security Programs.

Al, the Labs' chief operating officer and EVP since 2009, served from 2005-2009 as EVP for Integrated Technology and Systems, overseeing all work outside the nuclear weapons program. Jerry since 2005 has been VP for Div. 5000 and the Defense Systems & Assessments Strategic Management Unit, and has been Sandia's primary executive for DoD programs.

The reorganization, Paul wrote in a memo to employees announcing the appointments, "is intended to leverage Sandia's leadership capabilities, reduce decision making complexity, and strengthen integration across the Laboratory in support of mission delivery."

* * *

Jerry's primary responsibilities in his new role will include:

• Program executive for Sandia's nuclear weapons program
- Accountable for nuclear weapons products and customer relations
- Providing strategic direction and priorities for assigned nuclear weapons missions
- Responsible for the stewardship and health of the nuclear weapons capabilities

JERRY McDOWELL

• National Security Programs Integrator
- Creating mission strategies and Sandia-wide solutions for customers with needs that cross multiple mission spaces
- Ensuring that accountability for cross-cut mission delivery is clear, and execution is optimized with the stated Laboratories strategy
- Establishing systems to maximize integrated mission delivery

* * *

Al's primary responsibilities in his new role will include:

• Accountability for Sandia-wide mission support functions

• Integrating mission support elements in support of overall mission delivery

• Leading the interface with NNSA's Sandia Site Office in developing appropriate measures and standards for Sandia's performance

AL ROMIG

• Implementing integrated best business and operational practices to support the mission delivery VPs in their accountabilities

Paul has also tapped Dori Ellis, a 32-year veteran of Sandia who has held a wide range of leadership positions, to serve as principal staff director.

"She is extremely well-qualified to fill this position and will be a key contributor on the executive staff," Paul wrote in his memo to employees.

Paul also announced that Mike Vahle will serve as acting VP of Div. 5000 and the Defense Systems and Assessments SMU.

Sandia wins four R&D 100 awards in wide-ranging display of expertise

By Neal Singer

Sandia researchers — competing in an international pool that includes universities, start ups, large corporations, and government labs — received four R&D 100 Awards this year, and played a role in at least one more.

R&D Magazine presents the awards each year to researchers whom its magazine editors and independent judging panels determine have developed the year's 100 most outstanding advances in applied technologies.

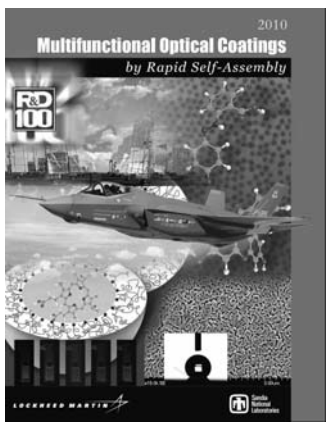
The awards, with their focus on practical effects rather than pure research, reward entrants on their products' design, development, testing, and production.

Winners are expected to participate in a formal awards banquet at the Renaissance Orlando Hotel in Florida on Nov. 11.

DOE Secretary Steven Chu said, "The large number of winners from the Department of Energy's national labs every year is a clear sign that our labs are doing some of the most innovative research in the world. This work benefits us all by enhancing America's competitiveness, ensuring our security, providing new energy solutions, and expanding the frontiers of our knowledge. Our national labs are truly national treasures, and it is wonderful to see their work recognized once again."

The four Sandia award winners are:

1. **"Multifunctional Optical Coatings by Rapid Self-Assembly."** The technique inexpensively forms film-like coatings already widely used in consumer electronics, semiconductor devices, and high-performance glass and ceramics. Rather than requiring high temperatures and/or the considerable vacuum of current commercial operations, the Sandia method disperses commercially available polymers by inserting them in common solvents under ambient conditions and then uses simple spin, dip, or spray techniques to coat surfaces. Evaporation of the solvents induces the polymers to self-assemble into multifunctional nanoparticles as well as films with tailored optical properties and a nanostructured surface. Because the process is compatible with conventional spray processing, it can be applied directly to the coating of large or complex parts, which current commercial methods are less able to do. The work was led by Sandian Hongyou Fan (1815) and his group as a joint entry with Lockheed Martin. Researchers from University of New Mexico also participated.



Sandia: Hongyou Fan (PI, 1815); Huimeng Wu (postdoc, 1815); UNM: Zaicheng Sun, Feng Bai; Davidson College: Dan Boye (sabbatical professor in Hongyou Fan's group); Lockheed Martin: Earl Stromberg (Lockheed Martin, Aeronautics Company)

2. **"Acoustic Wave Biosensor for Rapid Point-of-Care Medical Diagnosis."** The device, a joint effort of Sandia and the University of New Mexico Health Sciences Center, is essentially a handheld, battery-powered, portable detection system capable of identifying a wide range of medically relevant pathogens from their biomolecular signatures. Detection can occur within minutes, not hours, at the point of care, whether that care is in a physician's office, a hospital bed, or at the scene of a biodefense or biomedical emergency. According to the researchers, "The Acoustic Wave Biosensor provides fast, low-cost diagnostic results with as good or better sensitivity than traditional techniques." The device's sensor array works like a miniature analytical balance, weighing the amount of pathogen that binds to its surfaces. The pathogen-bound sensor acts like a spring with a small weight bouncing at one end. As more pathogens stick to the surface, the weight on the spring increases, causing the spring's bouncing speed to decrease by a measurable amount. The sensors detect minute weight differences by this method. A variety of sticky substances (ligands) attach to different pathogens. Surface tension draws the sample over the sensor, so no pumps or valves are required. This makes the sensors smaller, more reliable, and less expensive to manufacture, and extends the operating time of the rechargeable batteries. System control, data analysis, and reporting are performed by a personal digital assistant.

Sandia: Susan Brozik, Darren Branch, Thayne Edwards, and David Wheeler (all 1714); UNM: Richard Larson, Brian Hjelle, David Brown, Pam Hall, and Marco Bisoffi

3. **"CANARY: Event Detection Software."** How does a country whose water supply is as dispersed as that of the US act to rapidly and accurately detect contamination of any of it, whether due to natural causes or terrorist activities? Sandia researchers, led by Sean McKenna (6731), working with the US Environmental Protection Agency's National Homeland Security Research Center, have developed software that enables immediate contaminant detection by continuously analyzing signals from networked sensors for unusual responses. The software is designed to be compatible with sensor technologies and information technology programs existing at most water utilities, and it can be easily modified by the end-user for specific applications and for utility-specific customization. But this isn't just a war-and-disease prevention program — several utilities have reported that using the software has enhanced the day-to-day water quality management within their distribution networks. Sean says, "I think this project has been a great example of staff with different backgrounds and expertise coming together from across the Lab (three divisions and four centers) to solve a security problem that is making an impact both nationally and internationally. For example, Singapore has been running CANARY on its national drinking water system since July of 2009."

From Sandia: Sean McKenna (6731); David Hart (6731); Katherine (Kate) Klise (6731); Eric Vugrin (6371); Mark Koch (5433); Shawn Martin (1415); Bill Hart (1415); US EPA National Homeland Security Research Center: Regan Murray, Terra Haxton, John Hall; EPA Office of Water: Katie Umberg

4. **"Micro Power Source."** You've accepted that batteries run out of power and that newer batteries are rechargeable in wall electric sockets. But why should you go through all that? Why not a battery covered by a thin photovoltaic film? Just like on rooftops, the photovoltaic surface could harvest sunlight and turn it into electricity, recharging the battery in an ongoing process. This work, a joint effort with Pacific Northwest National Laboratory and Front Edge Technology Inc. in Baldwin Park, Calif., was originally part of a Defense Advanced Research Projects Agency program, but commercial applications were "evident from the start," the researchers wrote. The most likely immediate applications of the durable batteries are self-powered environmental sensors, self-powered tags for material tracking, and self-powered "smart" cards to enhance user features and security. The key feature for the micropower source is a volume of only one microliter, yet a high peak-power density greater than 1,000 watts per liter. This makes the device useful for powering wireless microsystems that sense, record, transmit, and/or actuate. The photovoltaic battery stack itself is only five millimeters in diameter and approximately 50 micrometers thick. (A human hair is approximately 70 micrometers thick.)

Sandia team includes Todd Bauer (1746); David Stein (1726); Carlos Sanchez (1746); Rob Jarecki (1746); Randy Shul (1746); Darlene Udoni (1726); Doug Greth (LMATA); and Chris Ford (LMATA); with assistance from the MESAFab staff. LMATA Government Services, a small business joint venture created by L&M Technologies, Inc., and ATA Services, Inc., is dedicated to the recruitment and staffing of professional, support, and administrative personnel.

5. Another Sandia effort aided researchers at Los Alamos National Laboratories in developing another winning effort: "The Solution Deposition Planarization."

Terahertz

(Continued from page 1)

visible/infrared world, this work represents the first steps toward reduction in size and enhanced functionality in the THz frequency spectrum," Sandia lead researcher Mike Wanke says.

The new solid-state system puts to use the so-called "neglected middle child" frequency range between the microwave and infrared parts of the electromagnetic spectrum.

Terahertz radiation is of interest because some frequencies can be used to "see through" certain materials. Potentially they could be used in dental or skin cancer imaging to distinguish different tissue types. They also permit improved nondestructive testing of materials during production monitoring. Other frequencies could be used to penetrate clothing and possibly identify chemical/biological weapons and narcotics.

Since the demonstration of semiconductor THz quantum cascade lasers (QCLs) in 2002, some researchers have speculated that these devices could offer unprecedented advantages in technologies used for security, communications, radar, chemical spectroscopy, radioastronomy, and medical diagnostics.

Until now, however, sensitive coherent transceiver systems could only be assembled from a collection of discrete and often very large components.

The work, described in the June 27, 2010, issue of *Nature Photonics*, represents the first successful monolithic integration of a THz quantum-cascade laser and diode mixer to form a simple, but generically useful terahertz photonic integrated circuit — a microelectronic terahertz transceiver (transmitter/receiver).

With investment from Sandia's Laboratory Directed Research and Development (LDRD) program, the lab focused on the integration of THz QCLs with sensitive, high-speed THz Schottky diode detectors, resulting in a compact, reliable solid-state platform. The transceiver embeds a small Schottky diode into the ridge waveguide cavity of a QCL, so that local-oscillator power is directly supplied to the cathode of the diode from the QCL internal fields, with no optical coupling path.

The Sandia semiconductor THz development team, headed by Mike Wanke, also included Erik Young, Christopher Nordquist, Michael Cich, Charles Fuller, John Reno, Mark Lee — all of Sandia — and Albert Grine of LMATA Government Services in Albuquerque. Young recently joined Philips Lumileds in San Jose, Calif.

The paper is available online (abstracts are available to everyone, full text only to subscribers) at http://dx.doi.org/10.1038/NPHOTON.2010.137.

'Kid who used to read the encyclopedia' ready to take on new challenges at Sandia

Paul Hommert waxes poetic on World Cup, vegan cuisine, and following one's passion

Story by Mike Janes

PAUL HOMMERT on the way up the spiral staircase to the sun deck at his home in Corrales, N.M., one of his favorite spots to sit and think and read and relax. Paul assumed his duties as Sandia's 13th Labs director on July 9. (Photo by Randy Montoya)

When someone ascends to the highest level of his or her profession, leave it to Mom to put it all in perspective.

"Well, that's what you get for reading the encyclopedia as a kid," said Paul Hommert's 90-year-old mother when told by her son that he'd been named president and Laboratories director at Sandia. Paul succeeded Tom Hunter on July 9.

Poring through the *Encyclopedia Britannica* may, indeed, have been a quirky habit, Paul acknowledges, but it was an early indicator of his curious nature. It would lead him to Purdue University to study mechanical engineering and eventually to the top echelon of leadership at Sandia.

Growing up in the late 1950s and early 1960s, Paul says he was strongly influenced by President Kennedy's space initiative.

"I was absolutely fascinated," he says. "I would write to NASA, ask for special information, and track the space program's progress. It created in me an inquisitiveness about science and how things work."

Perhaps surprisingly, he didn't necessarily take after his father, a classic "do-it-yourself" practitioner. "I was more interested in the theoretical side of things, not as much hands-on," Paul says. He also used the space program as his own personal motivator, and says he still occasionally shows a famous film clip of President Kennedy speaking at Rice University in 1962, where the president said, "We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard."

Following one's passion

President Kennedy's space initiative intersects with Paul's own belief in challenges and risk-taking.

"I'm a big believer in following one's passion," he says. He harkens back to a time earlier in his adult life when he coached high school-age soccer players and admits that he earned an occasional yellow card. (In soccer, a yellow card is an indication of a misconduct caution from the referee, while a red card leads to a dismissal from the field.) "It was a clear reflection of the passion I felt as coach, and I admire that kind of passion in others as long as it's about achieving excellence and being respectful of others." Paul maintains a keen interest in soccer, which he played at the collegiate level, and kept a close eye on this summer's World Cup action. "I love the event," he says. "The whole world participates, so it's a passion that's shared globally."

Paul faced a decision at Purdue that would turn out to be a defining moment in his career. In making the decision, it should come as no surprise that he focused on the "passion factor."

"After I received my master's, I debated whether I should pursue a PhD," he says. "I did a round of interviews with various companies, but I came away feeling that the positions I might have been offered wouldn't have had the challenges I was seeking." He stayed at Purdue and earned his doctorate.

One decision that wasn't so hard to make, Paul says, was his acceptance of a job offer from Sandia. "It was the only offer I had," he jokes. He initially worked on underground coal gasification, the start of a 15-year tenure in Sandia's energy program (what would now be the Labs' Division 6000).

Leaving the energy program, however, wouldn't prove as easy as joining it. But it was another major decision point in his career that Paul now says "kicked off a whole sequence of events" that led to where he is today.

"In 1992, Sandia was eliminating a number of what we call today the senior manager role," Paul explains. "I had to decide whether to leave energy, and I really hemmed and hawed about it since I'd devoted 15 years and was pretty passionate about it." It was his wife, Beth, Paul says, who ultimately helped convince him that he needed a new direction.

A leadership role at AWE

Paul joined the group that is now known as Center 1500, and soon thereafter the Labs' stockpile stewardship program began, with a new emphasis on computing and simulation. Ascending to the director's seat by 1995, Paul's leadership experience in the stewardship program led directly to his appointment as director of Research and Applied Science at the Atomic Weapons Establishment (AWE) in the United Kingdom.

Returning to Sandia following his three-year stint in England, Paul soon faced another big decision: whether to accept an offer from Los Alamos National Laboratory to lead that lab's Applied Physics Division (known as X Division). "It was a difficult and messy situation there, and therefore a great challenge," Paul says. "So, of course, it appealed to me tremendously."

Paul says his work at Los Alamos "had somehow ended up on Tom Hunter's radar screen," and he was asked to return to Sandia in 2006 as vice president at the Labs' California site.

"The biggest reason I'm now here as Sandia's president," Paul says, "is all those other experiences I was fortunate enough to have throughout my career. Working in energy, being in the right time and right place with the Labs' stockpile stewardship program, traveling to England to work at AWE, serving as California's vice president — those were enormously enriching times for me, both professionally and personally."

Complementing the challenges woven into the fabric of Paul's professional life are a number of social and recreational pursuits.

"I believe it's important to keep a balance in one's life," he says. "For me, I find it's essential to pull back from my professional responsibilities on occasion and recharge."

Though Paul good-naturedly claims not to possess the "intellectual energy" for traditional hobbies, he enjoys fine dining and gravitates toward spicy foods, well-prepared Italian meals, and even the nondairy vegan cuisine that Beth recently persuaded him to try.

Making time for family

Family, Paul says, dominates the little free time he has these days. "We're empty-nesters now, and I really enjoy talking with my children and learning about their own families and personal challenges." He says he and Beth thoroughly enjoyed their time spent in Europe, and he's intrigued by the prospect of some day visiting other far-off lands, such as New Zealand.

From August through September, Paul notes that he roasts a year's worth of chiles and is "quite proud" of his chile roasting skills. To wash it all down, he'll enjoy a good glass of wine (a pleasure that was reinforced during his three years in California). Or, he might prepare a latte that he has threatened to patent: a mix of espresso, soy, and coconut, with a hint of agave. "It foams nicely," Paul says. He cedes all other coffee drinks, however, to his colleague Rick Stulen (8000), a known java connoisseur.

Though Paul has little time for television, he'll relax by watching sports and reading ("mostly nonfiction," he says). He recently finished *Googled* (the story of the famed search engine) and found it "very impressive." He's currently making his way through a book on Abdul Qadeer (A.Q.) Kahn, the infamous Pakistani nuclear scientist.

Mountain yet to climb

Returning to the recurring themes of passion and challenges, Paul acknowledges that he sees a vast test ahead of him as Sandia's new president and director.

"Look at all the things that now encompass national security," he says. "The list, unfortunately, is very long. Nuclear terrorism. Energy security. Biological and chemical terrorism. Cybersecurity. Nuclear deterrence. Loss of scientific leadership.

"We're now a nation with a diversity of national security challenges and issues to deal with. The question for Sandia, then, is whether we can move from our historical position — as a weapons laboratory that has demonstrated it is good at doing other things — to a true national security lab that is sanctioned that way by the nation's leaders and citizens.

"The fact is, we are far removed from 1949," Paul concludes. "We have moved to a different place, and that's a natural maturation of our national security position. But earning that new position will be a huge mountain to climb. I think we're up to the challenge."

PAUL HOMMERT and wife, Beth, relax at their home in Corrales, N.M. (Photo by Randy Montoya)

Honoring Jack Howard

RETIRED SANDIA EXECUTIVE VP Jack Howard ponders the plaque that will be displayed in his honor in Sandia's Bldg. 800. Jack, who launched Sandia's California site in 1956 and was an early champion of improved use control and safety measures in nuclear weapons, is the third member of Sandia's Hall of Fame, joining Sandia pioneers Glenn Fowler and Bob Henderson. (Photo by Randy Montoya)

Sandia honors former executive VP Jack Howard for nuclear weapons work, starting Labs' California site

Story by Heather Clark

W.J. "Jack" Howard's dedication to his life's work becomes obvious even after a short visit with him, in the way he talks about his 36 years at Sandia and by glancing at the book sitting on the end table near the recliner where he sits. It's *Brotherhood of the Bomb* by Gregg Herken, about the lives of Robert Oppenheimer, Ernest Lawrence, and Edward Teller.

The former Sandia executive VP — who was a valued national adviser on US nuclear policy and an advocate for nuclear weapons safety and control — has become the third Sandian to be inducted into the Labs' Hall of Fame. The honor recognizes former employees who made pivotal contributions that have significantly enhanced Sandia.

During his career, Howard, 87, of Albuquerque, was responsible for the early recognition that US nuclear weapons needed built-in controls to prevent unauthorized or inadvertent arming. He also participated in early nuclear weapons tests, established the first independent nuclear safety assessment group at Sandia and was the first director of Sandia's site in Livermore, Calif.

At a ceremony June 30 attended by dozens of Howard's friends and former colleagues, Executive VP Al Romig said the honor was "reserved for people with a tremendous enduring impact" on the Labs.

'Immeasurable contributions'

"Jack's contributions to shaping the Laboratory as we know it today are immeasurable," new Labs Director Paul Hommert said. "He is well qualified to join the ranks of those already in our Hall of Fame and stands as an exceptional example for all Sandians who will follow."

Outgoing Labs Director Tom Hunter agrees, adding that, "I would describe Jack as one who laid the foundations not just for our nuclear weapons program but also for our values of national service and excellence."

Jack, who was nominated for the Hall of Fame by Div. 1000 VP Steve Rottler, is the third inductee after former VP Glenn Fowler and former Executive VP Robert Henderson.

As a bronze bas-relief plaque of Jack's likeness was unveiled at the ceremony, he smiled and clasped his hands together in a seeming gesture of thanks. The plaque will hang alongside the two others in the entrance lobby of Bldg. 800.

Colleagues say Jack, who retired in 1982 after serving nine years as executive VP, was a key executive in the Labs' 60-year history and an excellent steward of Sandia. They describe him as a man of few carefully selected words who could motivate and mentor employees to make sure jobs got done right.

"He was a forward-looking person in a very pragmatic sense," says Orval Jones, a former executive VP at Sandia who first worked with Jack in 1973. "Jack saw the need to really aggressively pursue nuclear weapons safety."

Jack was born in Kimball, Neb., in 1922 and came to New Mexico with his family when he was a junior in high school.

Prior to joining Sandia, Jack graduated with a degree in mechanical engineering from what is now New Mexico State University and served in World War II.

While he served at Clark Air Force Base in the Philippines, Jack described how he survived a mountain airplane crash that killed the pilot by hiking for six days along a stream with a shattered kneecap until he found help.

In 1946, Jack joined the Z Division of Los Alamos National Laboratory, which is now Sandia Labs, when he was in his mid-20s. Jack recalled in a recent interview shooting rattle snakes and eating lunch outdoors next to a bubbling spring in Coyote Canyon in those early days.

"The mission I had at the time was firing 10,000 pounds of usual explosives. I fired one one day and it blew out some big store windows in Albuquerque. There had been a [temperature] inversion," he says. After the incident, "we got our own instrument for measuring the inversion of the air. If there was an inversion, we didn't shoot that day," he says.

Over the years, Jack racked up a notable list of achievements in weapons work at Sandia. He directed the ordnance engineering design and development of the first Polaris missile warhead, which led to Sandia receiving a Certificate of Merit from the US Navy. And he was the motivating force behind the concept of the nuclear warhead and delivery system, which led to what is known as the "Davy Crockett" infantry weapon system. The system was designed for use by the US infantry in Europe against Soviet troops during the Cold War.

Safety and control of nuclear weapons also mattered to Jack. To prevent unauthorized detonation of nuclear weapons, Jack recognized early the need for built-in control of the arming sequence of US nuclear weapons. He participated in preliminary design of the Permissive Action Link (PAL) system that resulted. The PAL system is a coded switch inside a nuclear weapon that blocks the arming signal and requires an order from the president to pass through the proper channels to the officer-in-charge, who then would enter the code.

National, international roles

"All I did was ask the question," Jack says, when asked about his role in PAL.

Jack was instrumental in establishing an independent nuclear safety assessment group at Sandia in 1969. The group oversaw an ongoing safety review of existing nuclear weapons, developed new safety technologies, and developed techniques for evaluating evolving safety concepts.

Perhaps Jack's most visible achievement to the public is Sandia/California's site in Livermore. Jack was assigned in 1956 to inaugurate the new laboratory to provide ordnance engineering support to what is now known as Lawrence Livermore National Laboratory. Jack recalled initially being located in dilapidated barracks, but a year later his employees moved to a new building.

Since Sandia/California was new, it had to be bold and innovative. But Jack says he was directed by a superior to "sing from the same sheet of music" with colleagues at Lawrence Livermore. "I said, 'Yes, sir, but you've got to recognize there's a heavy metal group just across the street,'" he says. Sandia/California has grown from that small initial group to about 1,100 employees today.

Jack also was appointed to national positions, including serving as a delegate to the Strategic Arms Limitation Talks in Geneva, Switzerland, in 1976. He became a valued adviser in formulating and guiding the implementation of national nuclear policy.

From 1963-1966, he served as assistant to the secretary of defense for atomic energy at DoD and was the chairman of the Atomic Energy Commission's Military Liaison Committee. During this time, he assisted with ballistics support to locate a missing nuclear weapon near Palomares, Spain, after the collision of a B-52 and tanker aircraft during a refueling operation.

Defense Secretary Robert McNamara awarded Jack the DoD Medal for Distinguished Public Service for his work.

Take Charge Corner

Sandia Total Health and prescription drug coverage

Sandia Total Health includes comprehensive prescription drug coverage administered by Catalyst Rx.

Note: Members enrolled in Sandia Total Health administered through Kaiser Permanente will continue to have their prescription drugs filled through the Kaiser Pharmacies and mail-order service.

Note: *This information is provided by Sandia's Benefits organization. Previous Take Charge Corner articles have addressed "floors" and features of the Total Health house.*

How your coverage works

Here's a look at how your Sandia Total Health prescription drug coverage works:

- There is no deductible to meet for prescription drug coverage. This means that your coverage at the coinsurance rate begins with the first purchase of eligible prescription drugs.
- You pay a percentage of your covered medication's cost — called "coinsurance." This amount generally depends on the type of medication used to fill your prescription, as follows:

Type of Drug Prescribed	At an In-Network Pharmacy
Generic	You pay 20%
Brand-Name Preferred	You pay 30%
Brand-Name Non-Preferred	You pay 40%

- The maximum amount you will pay out of your own pocket each calendar year for in-network prescription drugs — called the "out-of-pocket maximum" — is $1,500. This is separate from the medical plan's out-of-pocket maximum. Out-of-network prescription drugs are covered at 50 percent and have no out-of-pocket maximum.

The benefits of generic drugs

Using generics is a great way to lower prescription drug costs for you. Generic drugs are required by the Food and Drug Administration (FDA) to be the same as their brand-name counterparts in terms of chemical composition, strength, and dosage; and on average they cost 30 percent to 70 percent less.

Choosing the right pharmacy

You may save time and money by filling your prescriptions through the right pharmacy service.

Note: Members enrolled in Sandia Total Health administered through Kaiser Permanente will continue to have their prescription drugs filled through the Kaiser pharmacies and mail-order service.

Retail pharmacy for short-term prescriptions

You can fill short-term prescriptions — for up to a 30-day supply of medication — at a retail pharmacy. Remember, you save when you use in-network pharmacies (those belonging to Catalyst Rx's network). To locate an in-network retail pharmacy near you, go to the Catalyst Rx website at www.catalystrx.com, sign in using the members sign-in information (see box at right), and select "Locate Pharmacies" from the lefthand column.

To sign in to the Catalyst website:

- Go to www.catalystrx.com.
- Under "Members" enter either your SSN or your member number located on your ID card.
- Enter your Date of Birth.
- Enter "Sandia" under Rx Group #.

Mail service program for long-term ("maintenance") prescriptions

If you use medication on an ongoing basis (such as those used to treat high blood pressure and high cholesterol), you can order up to a 90-day supply and have it delivered to your home with the Catalyst Rx Mail Service Program. Using the Mail Service Program will generally save you money on long-term prescriptions. For more information on the Mail Service Program, how to use the pharmacy, and how to fill prescriptions, go to the Catalyst Rx website at www.catalystrx.com, sign in using the member sign-in information (see box above), and select "Mail Service" from the lefthand column.

The Mail Service Program may not be the lowest cost option to purchase long-term, or maintenance medications. To assist you in determining the best option for long-term prescriptions, visit www.sandiatakecharge.com/employees/prescription-drug and open the Catalyst Rx letter.

Catalyst Rx Specialty Drug Management Program

Specialty medications must be filled through Walgreens Specialty Pharmacy to be eligible for coverage. Please note that you will be able to fill one 30-day supply of your medication at any network retail pharmacy; thereafter, you will be required to participate in the Catalyst Rx Specialty Drug Management Program and receive your medications by express delivery through Walgreens Specialty Pharmacy's central fulfillment pharmacy.

For more information on the Catalyst Rx Specialty Drug Management Program, visit www.sandiatakecharge.com/employees/prescription-drug.

Online tools and resources

Note: Members enrolled in Sandia Total Health administered through Kaiser Permanente will continue to have their prescription drugs filled through the Kaiser Pharmacies and mail-order service. For Kaiser tools and resources, please visit members.kaiserpermanente.org.

The Catalyst Rx website (www.catalystrx.com) provides tools and information to help you make informed decisions including:

- Calculate prescription drug prices and compare options
- Access the 2010 Preferred Drug List
- View your prescription drug history with Catalyst
- Locate in-network pharmacies
- Learn more about the Mail Service Program
- Learn how to save money on your prescriptions

For more information on the benefits of Sandia Total Health, visit www.sandiatakecharge.com.

MY BOSS IS A PATRIOT — Bob Miltenberger, manager of Radiation Protection Dept. 4128, receives the Patriot award during a recent luncheon meeting of the New Mexico field committee of the national Employer Support of Guard and Reserve (ESGR) program. Bob, in the center, is flanked by Albuquerque Mayor Richard Berry, left, and ESGR state chairman Budgie Green. To receive the award, a boss must be nominated by someone on his or her staff who serves in the National Guard or Reserve (or a family member of a Guard or Reserve employee). ESGR is the lead Defense Department agency promoting cooperation and understanding between civilian employers and their National Guard and Reserve employees. Established in 1972, ESGR operates within the Office of the Assistant Secretary of Defense for Reserve Affairs. Its responsibilities fall into three categories: Increasing awareness of the Uniformed Services Employment and Reemployment Rights Act, recognizing outstanding support of employers for their Guard and Reserve employees, and resolving workplace conflict through mediation.

ESGR
EMPLOYER SUPPORT OF THE GUARD AND RESERVE

Take Charge Corner

Kaiser HMO and CIGNA In-Network members: Transitioning to Sandia Total Health . . . What it means for you

Note: *This information is provided by Sandia's Benefits organization. Previous Take Charge Corner articles have addressed "floors" and features of the Total Health house.*

As we previously announced, Sandia Total Health will be the only medical plan Sandia offers in 2011 to nonrepresented employees, pre-Medicare retirees, and pre-Medicare surviving spouses. All other medical plan designs, including the Kaiser HMO and CIGNA In-Network plans, will be discontinued.

Although vendor negotiations continue, more than 90 percent of the providers currently being used by our employees are part of the networks being considered for 2011. While contracts have not yet been finalized and signed, it is our intention to offer the Kaiser, Lovelace, and Presbyterian networks to administer Sandia Total Health next year.

We understand that you, as a current member of Kaiser or CIGNA, may have questions about what this means for you and how Sandia Total Health, your new plan, differs from your current plan. The information in the charts below provides an overview of some of the biggest differences between the Sandia Total Health plan design and your current Kaiser HMO or CIGNA In-Network plans.

You may find all this information and much more on www.sandiatakecharge.com.

Note: The CIGNA EPO Plan works much like an HMO. Since the Kaiser HMO and the CIGNA EPO are almost identical plans, both are described in the "Your Current Plan" column, unless otherwise noted.

What Are Networks?
Networks are groups of doctors and hospitals contracted to provide services. With your current plan, you have coverage only when you see a provider in the network; there are no "out of network" benefits. Next year, with Sandia Total Health, you may visit doctors and healthcare providers who belong to the network — and receive better benefits — or you can get care outside the network and get lower benefits. In-network doctors have negotiated special rates, so your benefits are better and you'll pay less for care when you use an in-network provider next year.

Your Current Plan	Sandia Total Health
In-network benefits only; no out-of-network care covered	Covers in- and out-of-network care. In-network care has better benefits than out-of-network care.

For a listing of services covered under Sandia Total Health, including in- and out-of-network costs, go to www.sandiatakecharge.com/employees/Sandia-Benefits-Glance.pdf.

Sandia's goal for 2011 is to offer Sandia Total Health through many of our current physician/facility networks, such as Presbyterian and Lovelace in New Mexico, Kaiser in California, as well as other national networks. More information about networks will be available during Open Enrollment.

What Is Preventive Care?
Preventive care includes programs or services used in advance of symptoms to help prevent illnesses or injuries before they occur.

Your Current Plan	Sandia Total Health
100% covered with no copay for in-network preventive care	100% covered with no copay or deductible for **in-network** preventive care
$20 copay for physicals under Kaiser HMO	No copay or deductible for annual preventive physical
No coverage for out-of-network preventive care	Out-of-network preventive care is covered at 60% (no deductible)

Preventive care matters. Many problems that start as small health issues — the kind we all tend to ignore — can turn serious if they go undetected or untreated. Sandia Total Health offers preventive care benefits at 100 percent (in-network) and 60 percent (out-of-network) with no up-front deductible.

For more information on the preventive care services covered by Sandia Total Health, go to www.sandiatakecharge.com/SandiaPrevHealthGuide.pdf.

What Is an Annual Deductible?
The deductible is the amount you pay each year out of your pocket before your plan benefits begin. It's different from a copay, where you pay a small amount each time you access care. A deductible acts like a car insurance deductible, where you pay the deductible first and then benefits begin (except for preventive care, which is typically covered at 100%). The amount of your deductible is based on the level of coverage you choose (employee only, employee + spouse or employee + child(ren), employee + family).

Your Current Plan	Sandia Total Health
No deductible	**For in-network, *eligible* care, you first pay the following deductible and then benefits begin:** – $750 per employee, $750 for each additional person (spouse/dependents) – Maximum annual deductible of $2,250 per family **If you use out-of-network providers, you have a separate, higher deductible:** – $2,000 per employee, $2,000 for each additional person (spouse/dependents) – Maximum annual deductible of $6,000 per family

For example, if you elect employee-only coverage next year in Sandia Total Health, your annual deductible would be $750 when you see in-network providers. Similar to a deductible for your car insurance, the Sandia Total Health deductible means ***you are responsible*** **for the first $750 in covered medical expenses that you have during the plan year, and then the plan benefits begin.** The only exception is preventive care; those services are covered by Sandia Total Health with no deductible required. If you enroll your spouse and/or child(ren) in Sandia Total Health, they each have a $750 deductible, as well. However, your maximum annual deductible as a family is $2,250, no matter how many dependents you enroll in the plan.

Note: Usual and Customary rates represent the maximum amount of reimbursement an insurer will generally consider for out-of-network services. The member is responsible for paying 100 percent of out-of-network charges above the usual and customary rates.

For more information about deductibles, go to www.sandiatakecharge.com/employees/deductible-coins.

You can pay a portion of your deductible next year with money Sandia gives you in your Health Reimbursement Account (HRA) if you complete the Biometric Screening and Health Assessment before Nov. 30 this year. For more information, go to www.sandiatakecharge.com/employees/HRA

What Is Coinsurance?
After you have met your annual deductible, Sandia Total Health benefits begin. Sandia will pay a fixed percentage of the cost of covered medical services, and you pay the remaining percentage – the **coinsurance** amount.

Your Current Plan	Sandia Total Health
No percentage,or *coinsurance*). Instead, you pay a pre-determined copay amount at the time of service	No copay required Your coinsurance amount is based on using in- or out-of-network providers. After you pay the deductible: – For in-network providers, Sandia pays 80% of the cost and you pay 20% (this is your "coinsurance") – For out-of-network providers, Sandia pays 60% of the cost and you pay 40%

Note: Usual and customary rates represent the maximum amount of reimbursement an insurer will generally consider for out-of-network services. The member is responsible for paying 100 percent of out-of-network charges above the usual and customary rates.

For an example of how coinsurance works, go to www.sandiatakecharge.com/employees/deductible-coins.

What Is an Out-of-Pocket Maximum?
The "out-of-pocket maximum" protects you financially; this amount is the maximum amount you will pay out of your own pocket for in-network, eligible healthcare services during the year, including your annual deductible amount. Your ***out-of-pocket maximum*** is an important plan feature because it limits the total amount you pay each calendar year for in-network, eligible healthcare services, including deductibles and coinsurance.

Note: Healthcare services received by in-network providers have a different out-of-pocket maximums than care from out-of-network providers

Your Current Plan	Sandia Total Health
• $1,500 out-of-pocket maximum per person per year • $3,000 out of pocket maximum per family per year	**Healthcare services (In-Network):** • **Employee Only:** $2,750 out-of-pocket maximum per year (includes deductible) • **Employee + Spouse or Child(ren):** $5,500 (includes deductible; max. of $2,750 per person per year) • **Employee + Spouse and Child(ren):** $8,250 (includes deductible; max. of $2,750 per person per year) **Healthcare services (Out-of-Network):** • **Employee Only:** $6,000 out-of-pocket maximum per person per year (includes deductible) • **Employee + Spouse or Child(ren):** $12,000 (includes deductible; maximum $6,000 per person) • **Employee + Spouse and Child(ren):** $18,000 (includes deductible; maximum $6,000 per person) If you reach the out-of-pocket maximum for healthcare expenses, Sandia will pay your remaining eligible expenses for that year at 100%. **Prescription drugs:** Additional $1,500 out-of-pocket maximum per person per year for ***in-network prescription drug*** costs. There is no out-of-pocket maximum for ***out-of-network*** prescription drug costs, which means there is no limit to the amount you will pay for prescription drugs that you purchase out-of-network. If you reach the out-of-pocket maximum for prescription drugs, Sandia will pay your remaining eligible expenses for that year at 100%.

If you have employee + spouse and/or child(ren) coverage, **each person covered under Sandia Total Health has an individual out-of-pocket** maximum. This means that when one person meets his/her annual maximum, the remaining eligible expenses in that year, **for that individual**, are covered at 100 percent.

Note: Usual and customary rates represent the maximum amount of reimbursement an insurer will generally consider for out-of-network services. The member is responsible for paying 100 percent of out-of-network charges above the usual and customary rates.

For more information on how the out-of-pocket maximum works, including an example, go to www.sandiatakecharge.com/employees/maximum.

What Is the (2011) Explanation of Benefits?
The Explanation of Benefits is a statement (commonly referred to as an EOB form) sent to you after a healthcare claim has been processed. It explains the amount covered for each medical treatment and/or service, and the amount you are responsible for paying.

Your Current Plan	Sandia Total Health
No explanation of benefits	▪ Next year you will receive an Explanation of Benefits statement after each healthcare service you or your covered dependent receives ▪ Statements will be sent to the home mailing address you have on file with Sandia ▪ Be sure to **save** your statements so you can keep track of where you are with respect to meeting the annual deductible and coinsurance limits

More Information

As we get closer to Open Enrollment, more information will be provided to help you make a smooth transition to Sandia Total Health and use your benefits wisely in 2011.

Luis Amezcua named president of the New Mexico chapter of the American Society of Safety Engineers

By Iris Aboytes

LUIS AMEZCUA has travelled a long road to his new role as president of the New Mexico chapter of the American Society of Safety Engineers. (Photo by Randy Montoya)

Luis Amezcua (6402) recently began his term as president of the New Mexico chapter of the American Society of Safety Engineers (ASSE). To understand why this is such a great accomplishment for Luis is to understand how he got here.

Luis grew up in Juarez, Mexico, just on the other side of the United States border. His neighbors spoke English and encouraged him to learn. He doesn't remember why, but he was not interested. "I went to a little school, where at the age of five, I was reading and writing, adding, subtracting, multiplying, and dividing by single digits," says Luis. When he entered elementary school, he went into second grade. "I could not go into third grade because of my age," he says. So throughout school, he was always the youngest and smallest, so he felt he always had to try harder.

He attended the University of Juarez City, where he became president of the Civil Engineering Society, representing both the College of Engineering and College of Architecture. He received a degree in civil engineering.

He worked during the day and took classes from 4-10 p.m. He attended study groups between 11 p.m and 2 or 3 a.m.

An older cousin helped him get a job, but not before a professor at the university encouraged him to pursue a master's degree in environmental engineering. A year after receiving his undergraduate degree, he began course work for his master's degree.

Before receiving his environmental engineering degree, he married his wife, Michelle, a US citizen. His daughter Ursula was born after he completed the master's program. At this time, Luis had three jobs. He worked for a construction company, a government agency, and a little construction company that he did on the side. He and his wife were not rich, but they were able to provide for their family.

All this came to a halt about a year later. While at work at his job for the construction company, he fell 21 feet from a scaffold and broke both ankles. He had three surgeries within two years. The last one in 1997 fixed his right ankle and recovered one and a half inches he had lost in leg length.

During this period of time he could not work. Now, not only did he have a daughter, but a newborn son, Emiliano. Michelle took care of all three of them while working full time.

"I quit my job and got laid off from the government agency," says Luis. "The company I worked for did not cover my surgeries; it was my parents who stepped in to help. We lived in a little place and had no money.

"Lying in bed before my last surgery, I remember thinking, what should I do? I have a wife and two kids. Even drug dealers have nice trucks, and live in mansions. I live in a tiny apartment and drive an old car. Why is it that decent hardworking people can't live a good life?

"I recognized I was one of those renegades who had not wanted to learn English," he adds. "I wanted a bigger house for my family. I wanted a better job. I wanted it all. I wanted to be the American living the American dream. I knew I needed to learn English so I dedicated myself to studying English, nothing but English. I found strength to rise from the ashes like the phoenix."

Moving from Mexico to the United States and finding a job was not easy. He knocked on many doors before he got a job. He worked at Holloman Air Force Base, Intel, and Los Alamos, before he arrived at Sandia.

Luis completed a master's program in occupational safety management during this period. He has also completed the required coursework in the organizational learning and instructional technologies doctoral program at the University of New Mexico.

Today, Luis is living the American dream. "I have a good job and a beautiful family," says Luis. "Being named president of the New Mexico chapter of the American Society of Safety Engineers (ASSE) gives me a sense of acceptance."

Luis had read that Sandia was one of the most prestigious places to work. "It is," he says. "I can attest to that. I love working at Sandia."

50 years ago . . . Special density concrete was poured to fill six giant doors surrounding the reactor core at Sandia's Engineering Reactor Facility (SERF), which is now about 70 percent complete. The doors, weighing as much as 660,000 lbs., are constructed of half-inch steel plate and filled with a specially mixed 4.7 density concrete. With this kind of cement as shielding, chambers adjacent to the reactor cell will be safe from radiation. **An underground detonation of 500 tons of chemical high explosive (nonnuclear)** is scheduled to be fired at the [Atomic Energy Commission] Nevada Test Site as part of a series of cratering effect tests for the Plowshare Program. The spherical charge will be placed at a depth of 125 feet in the desert alluvium. The detonation is planned to obtain additional information on the relationship between energy yield, depth of burial, and the crater size resulting from the explosion.

DENSITY CONCRETE being poured into the skinned doors of the Sandia Engineering Reactor Facility.

40 years ago . . . A new high-velocity gun facility has been operating in Sandia's Area Y adjacent to Area III. The gun (which uses conventional artillery powder) can fire a two-pound projectile up to 8,000 feet per second (fps). The velocity range of the new facility fills a gap between compressed gas guns and explosives and, in fact, extends well into the range formerly accessible only to explosives. **A deep sea simulation chamber is being used for small explosive testing.** The chamber, which can duplicate pressures at 15,000 feet below the surface, has been used to test a number of small explosive sounding devices under development. The chamber was designed as a quick, economical solution to the need for deep-sea testing. In use, the chamber is filled with simulated sea water and pressurized gas up to 7,300 psi. The gas acts as a cushion to blast pressure. The size of the explosive charge that can be fired depends on the pressure and charge configuration. The chamber has contained up to three grams of explosive.

BILL LEISHER (7343) designed this deep sea simulation chamber to contain small explosions.

30 years ago . . . The Ground Launched Cruise Missile (GLCM), passed a major milestone with the first flight test of a Tomahawk GLCM carrying a W84 warhead supplied by Sandia and LLNL. The test, completed at Dugway Proving Grounds southwest of Salt Lake City, was not only the first of a GLCM with a W84 structural test unit aboard, but also the first launched from an operational Transporter Erector Launcher. In a flight that lasted an hour and 42 minutes, the GLCM demonstrated its terrain-following and navigational capabilities, flying nearly 800 nautical miles at a nominal speed of 550 mph. A new technique recently developed at Sandia, **the pulsed-laser atom-probe**, extends the capabilities of existing surface analytical techniques and may make it possible to study, in atomic detail, the individual steps in a surface catalytic reaction and the effects of ion bombardment of semiconductor materials.

FIRST FLIGHT TEST of Sandia Livermore's W84 structural test unit aboard a Tomahawk ground launched cruise missile at Dugway Proving Grounds. This test also marked the first use of the operational Transporter Erector Launcher.

20 years ago . . . Researchers at the Combustion Research Facility have **developed a new technique, called photofragment imaging**, to study photodissociation. The technique should prove highly useful to scientists working to understand complex photochemical reactions. Photofragment imaging employs lasers, imaging technology, and a host of associated electronics to quickly obtain information about how molecules split into smaller fragments. Among the initial experiments using the photofragment imaging technique was the investigation of the photodissociation of methyl iodide into methyl and iodine fragments. The direct output of photofragment imaging is a set of "pictures" — two-dimensional images of the spatial distribution of the fragments. By analyzing the images, researchers deduce the details of the fragmentation process.

10 years ago . . . A front-end sampling device developed at Sandia that is smaller than the tip of a fingernail promises big results for detecting and analyzing trace chemicals. The four-by-six millimeter, half millimeter-thick microfabricated planar preconcentrator is a miniaturized version of a traditional preconcentrator used to collect sample gases for analysis. Already part of chem-lab-on-a-chip (formally called µChemlab™) — Sandia's initiative to build a handheld "chemistry laboratory" — it has potential to be integrated with a variety of microsized chemical detectors, including a mass spectrometer or an ion mobility spectrometer.

Sandia's 10th Habitat for Humanity house comes to life

By Iris Aboytes

The walls are up. It has a roof and the inside is beginning to take shape. The 10th Sandia Habitat for Humanity house is being built by Sandia employees and retirees at 6102 Townsend Place SW for Cynthia Jones and her daughters, Esperanza, 10, and Angelica, 16.

The groundbreaking was June 5 and the dedication is set for Aug. 28. Dwayne Hughes, a Sandia retiree and member of Habitat's SWAT (Special Work Assignment Team), is the job captain.

"I am very excited that my dream to give my daughters their own home is finally going to come true," says Jones. "The process began about three years ago when my friend told me about Habitat. I completed an application and was approved."

"I am very grateful to Sandia employees and retirees for helping me realize my dream."

— Cynthia Jones

The three-bedroom, two-bathroom, 1,400-square-foot house is being built for wheelchair accessibility. Jones has cerebral palsy and will need a wheelchair in the future. Currently, she only needs a wheelchair for longer walks. Angelica does the driving in her family. "She is a good driver," Jones says. "She is very careful."

The Jones family is pleased the house is being built in an area they like. "When my application was approved, I felt my dream was going to come true," says Jones. "Because of internal Habitat changes, we waited about three years. It was a little unsettling, but we were so close. We finally got here.

"I am so pleased that my house is being made to accommodate my future needs," she adds.

Jones is there every Saturday signing in volunteers. "I enjoy doing it," she says. "It is a good way to meet the people who are giving of their time to help me." She also helps at the Habitat offices to reach the 500 hours required by Habitat of every homeowner.

"I am very grateful to Sandia employees and retirees for helping me realize my dream," Jones says.

For more information, or if you would like to volunteer, contact Sam Bono (3652) at 284-3226, or Patty Zamora (3652), at 844-2146, or visit the Sandia SharePoint site at https://sharepoint.sandia.gov/sites/communityinvolvement/habitat2010. Construction experience is not required. Retirees are especially needed during the week. See the volunteer opportunities calendar at right. Cash donations may be made by calling SLFCU at 293-0500 to transfer funds, Habitat for Humanity Account No. 508200, or by mail to P.O. Box 23040, Albuquerque, N.M. 87182-1040.

SANDIA VOLUNTEERS make Sandia's 10th Habitat house a reality. Prospective homeowner Cynthia Jones is on hand every weekend to sign in volunteers. (Photo by Rachel Baros)

Build Schedule for the Sandia Labs/SLFCU/YUGA House

Work Period*	Division	Dates	Task
6th	3000	7/16-17	Finish Drywall
7th	12000	7/23-24	Install Doors, Paint Prep
8th	10000	7/30-31	Paint
9th	1000	8/6-7	Punch List Items
10th	5000	8/13-14	Complete Punch List
11th	4000	8/20-21	Landscape
12th		8/28	Set Appliances/Dedication

*These work periods are those days when Sandia volunteers and other volunteers are scheduled to work. This schedule is only tentative because of such factors as weather, subcontractor, and inspections delays.

SANDIA VOLUNTEERS work to make Cynthia Jones' dream come true.

CYNTHIA JONES and her daughters, Esperanza (left) and Angelica, will be the owners of the new Habitat house. (Photo by Rachel Baros)