Since August, Sandia and the Sandia Site Office have been taking a close look at their relationship. Ultimately, every DOE and NNSA directive serving as the contractual requirements of the NNSA-contractor relationship will be scrutinized, potentially modified — or even eliminated.

The effort is part of a larger initiative that has been under way for the past few years to streamline the way the Department of Energy oversees contractors. The goal of the “Governance & Oversight Reform” effort is to free up federal and contractor resources to focus more on mission outcomes and results, and to foster a relationship based more on partnership and trust than compliance between contractors and their respective NNSA offices.

Changes coming to Sandia’s M&O contract to improve efficiency, reduce complexity

By Julie Hall

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That's that

Got a note from Irene Dubicka (5925) not long ago, a heads up for us reporter/photojournalist types at the Lab News to watch our Ps and Qs in Michigan. The thing that prompted her note was an item in the Detroit News about the Michigan Intelligence Operations Center for Homeland Security. The article explains that “the little-known center fights terrorism by investigating suspicious behavior, such as people taking photos and writing notes in public. That's pretty much describes to a ‘T’ what we do at the Lab News. Irene jokingly ended her note with a little friendly advice: ‘Tell Randy (Montoya) not to take any pictures in Michigan!’ That’s not likely to happen anytime soon, but the fact is, more than one of us from the Lab News – Randy included – have been stopped in the course of doing our work and questioned by Air Force security. Randy was even “taken in” one time. It’s frustrating, of course, but look at it from their perspective: They don’t know us from Adam and – especially since 9/11 – what we do does look suspicious.

Speaking of base security, have you heard about those new credentialing requirements Kirtland Air Force Base is about to deploy? The new requirement, to be introduced sometime after April, is called the Defense Biometric Identification System, or DBIDS. The system has already been implemented at military installations around the world and is now coming to KAFB. In a nutshell, DBIDS is a DoD identity authentication and force protection tool. Over the years, we at Sandia/New Mexico have enjoyed a fairly painless base entry process. A heads-up brochure being handed out at KAFB gates says the DBIDS process won’t change that: the process, it says, “is quick and efficient and should not slow down base entry.” Well, I’m skeptical about that; we’ll see. But again, consider the issue from the military’s point of view. If you were a base commander, wouldn’t you feel the way flight director Gene Kratz felt during the Apollo 13 mission: “Not on my watch.” I get it. I may not like it, but I get it.

Do you do much hand writing anymore? I mean, writing things down in longhand? Except when I’m taking notes during an interview, I hardly use longhand at all. And I must admit, my cursive writing has deteriorated so much over the years that when I come back to my office, I have to transcribe my notes right away while I can still remember what my signature actually say. If I go back to my notes a week or two later, they’re as indecipherable as the still-mysterious ancient Indus script. What brings this up? Well, the other day I had to download and complete a form that required a lot of handwritten input. I’d hardly gotten through half a page of the three-page form before my hand and wrist really started to ache. When I think of all the papers, stories, and reports I used to draft in longhand, my hand just cramps and I just drop the pen. On this subject, CBS did a report a couple of years ago about the vanishing art of handwriting. It’s probably been written about (keyboarding about?) in a lot of other media, too. The bottom line is, kids are learning keyboarding keyboarding skills at an earlier and earlier age and are less and less willing or able to write the old-fashioned way. Some schools are effectively giving up on handwriting; others are fighting a rearguard action. I’m of mixed feelings about the issue, just as I am about the use of calculators in math classes. On the one hand, the traditionalist in me says, doggone it, people should know how to write and do basic calculations without electronic crutches. On the other hand, the early adopter in me says “why? What do you think? Handwriting? Or keyboarding?’

See you next time.

— Bill Murphy

Sandian Shawn Dirk honored as Outstanding Young Investigator by American Chemical Society

Sandia chemist Shawn Dirk (1821) was selected for the Outstanding Young Investigator award at the 2009 annual meeting of the American Chemical Society. In that capacity, he was invited to present at the society’s 2009 Young Investigator Symposium held in Washington, D.C. The award from the ACS recognizes young scientists for their contributions to the society. Shawn's important and diverse contributions to organic materials research in the area of hybrid organic-inorganic semiconductor materials has earned him this recognition. Shawn's work has entailed directing research in the area of novel polymeric dielectrics for next-generation hybrid car under the DOE FreedomCAR program.

Shawn holds two patents and is the lead author or coauthor of 35 publications.

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**Workshop explores the next generation for Sandia’s biodefense R&D**

By Holly Larsen

Unfair Advantage. Other Scary Things. Who Cares. These are the types of topics for breakout sessions at Sandia scientific workshops. But then, the Next-Generation Technologies for Detection and Diagnostics Workshop was not a typical Sandia event.

Motivated by the need to effectively pursue opportunities for biosecurity solutions, organizer Anup Singh (8621), manager of Biosystems R&D, took the unusual step of launching the workshop with a full day of speakers from organizations outside Sandia.

“As we explore the next stage of how we might provide solutions to the nation’s biodefense problems, it’s essential to look beyond Sandia — to get a good view of the larger landscape, see who the other players are and where we fit in,” says Singh.

Adds Glenn Kablan (8600), director of Biological and Materials Sciences, “Our external advisors have stressed the need to bring people in from the outside to get a wider perspective of the problem space. Too often, we only talk to ourselves. This workshop as a good opportunity to hear about issues from people at places like NIAID, NCI.”

**The view from the outside**

Distinguished scholars and researchers from a range of institutions, including UCLA’s David Geffen School of Medicine, the Columbia College of Physicians and Surgeons, and the Center for Point-of-Care Diagnostics for Global Health, widened Sandia’s perspective on discrete topics within two broad areas: understanding the biology of infectious diseases and pathogens, and medical diagnostics and environmental detection platforms.

“With a fuller view of some of the cutting-edge external research relevant to Sandia’s biodefense program, as well as to have a first-hand about the problems faced in the real world,” says Wahid Hermina (7190). For example, notes Anup, workshop attendees learned that rising population in many parts of the world is forcing humans and cattle to live closer together, making it easier for viruses to jump from animals to humans. About new testing facilities in these areas create a perfect scenario for rapid, widespread outbreaks of zoonotic diseases. Hence, to detect and destroy it faster, Sandia researchers need to develop assays and devices that are not only useful at home but are sufficiently cheap and portable to be useful in poorer parts of the world.

**The customer side of the equation**

After examining the lay of the land in current R&D, Anup invited Sandia participants to open up the customer or user perspective and address the unmet needs of such customers such as Department of Homeland Security or the unmet needs of such customers such as Department of Homeland Security and defense systems centers.

The session began with an opening lecture by Peter Phillips, who addressed an important issue: how to provide solutions that customers wouldn’t necessarily think of on their own.

Other key components to success, she says, include communicating about the measurable value of a solution, especially as compared to other alternatives, and ensuring the infrastructure necessary for effective delivery of the proposed solution. Phillips provided some guidelines for Sandians to improve the process of preparing and delivering value propositions to biodefense customers.

**Breaking out to move forward**

Two focus sessions — one centered on Sandia’s value proposition in biodefense R&D and the second on successful solutions and emerging threats — gave participants a chance to break into smaller groups to discuss rationales and strategies moving forward.

“Breaking out to move forward was a chance to break into smaller groups to discuss rationales and strategies moving forward,” adds Jill. “As you might expect from an event like this, participants were looking to break into smaller groups to discuss rationales and strategies moving forward.”

Participants engaged in discussing the unmet needs of such customers such as Department of Homeland Security and defense systems centers.

“Participants engaged in discussing the unmet needs of such customers such as Department of Homeland Security and defense systems centers, and various stakeholders engaged in discussing the unmet needs of such customers such as Department of Homeland Security and defense systems centers.”

The second session focused on strategies to counter emerging and unknown threats, specifically product that could be enabled by recent advances in synthetic biology and nanotechnology. Summaries of the second session underscored the importance of building a larger biotechnology program to address the possible threats, identify which are possible, and target solutions appropriately.

**Graphene California News**

(Continued from page 1)

**Graphene**

touch screens, and other technologies. Atomic and high-temperature, so its formation cannot be imaged using standard microscopy methods.

“The next step is to do a quantitative comparison of graphene for the past three years. This is no small task,” he explains. “We have a high-temperature, so its formation cannot be imaged using standard microscopy methods.”

Recently, the team had a double breakthrough. They developed a method to image graphene in the earliest stages of formation and then saw something very unexpected. It takes clusters of five carbon atoms to add to a growing graphene sheet, an observation that greatly surprised Norm, a theoretical physicist.

“The rate at which carbon atoms attach should be proportional to the number of carbon atoms present,” he explains. “I’ve spent 20 years developing theories to explain how thin films grow, and none has behaved like this. We discovered that carbon atoms go through a complicated contortion before attaching to a graphene sheet.” To convince Norm, Elena repeated her measurements more than once, looking for an error that could explain the unexpected result.

Kevin developed the use of electron reflectivity to measure the number of carbon atoms on the surface. “I tried out the method on simpler systems, metal films growing on metal, and thought that it might work with graphene growth,” he says. “We found that the reflectivity is sensitive to minuscule amounts of carbon on the substrate surface.”

With practice, Kevin was able to image the growth of graphene while measuring the concentration of the carbon atoms floating around the surface — in a sort of pre-graphene configuration.

“Once Kevin had learned how to measure very small concentrations of atoms attached to the surface, we then found this bizarre behavior of graphene growth, which was like nothing any of us had seen before,” says Norm. “We used information from the images that is usually ignored.”

Elena has been perfecting the technique of growing individual graphene crystals to continue studying how they develop. By closely monitoring the concentration of carbon, she can make what Norm describes as “tremendously large, perfect crystals.” This has led to more discoveries about the different phases of graphene on specific surfaces, for example, on the metal iridium the graphene crystals grow in four different orientations.

Peter Feibelmann (1130) is doing first-principles calculations of the atomic structure of carbon and graphene on metal surfaces to help the team get a better sense of what is behind its behavior as it nucleates and grows. “Our method does not have atomic resolution, so we are guessing about where individual carbon atoms are,” says Norm. “With his first-principles calculations, Peter can develop hypotheses to test against our measurements.”

Peter’s contribution both validates and enhances the experimental work. “It gives us a much more complete description,” says Kevin. “We can then make statements about the behavior of individual carbon atoms.”

The project has generated six papers over the past 18 months, published in the New Journal of Physics, Physical Review B, and Carbon. The two articles in the New Journal of Physics were featured on the publisher’s “Select” website while the second paper in Physical Review B, “Graphene Growth by Metal Etching on Ru(0001),” was an editor’s selection.

The technique development began under a Laboratory Directed Research and Development (LDRD) project. The research is currently supported by the Office of Basic Energy Sciences and by an LDRD project. The research is currently supported by the Office of Basic Energy Sciences and by an LDRD project. The research is currently supported by the Office of Basic Energy Sciences and by an LDRD project. The research is currently supported by the Office of Basic Energy Sciences and by an LDRD project. The research is currently supported by the Office of Basic Energy Sciences and by an LDRD project. The research is currently supported by the Office of Basic Energy Sciences and by an LDRD project. The research is currently supported by the Office of Basic Energy Sciences and by an LDRD project.
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Sandia-developed satellite systems have increased their sensing capabilities dramatically in recent years, but the bandwidth available for these payloads to transmit data to Earth has essentially remained constant, creating a kind of data logjam.

The Sandia solution has been to prereduce the large data stream by developing processing architectures that increase satellite onboard computing capabilities. Then, only the most useful information would be transmitted to Earth.

But questions as to how well the latest in computing electronics would fare in the harsh environment of outer space, where high-energy particles might collide with a transistor and change the value of an individual calculation, remained unresolved.

Now, preliminary results of a Sandia experiment in progress on the International Space Station are providing insights into the effects of high-energy radiation on these computing electronics, enabling appropriate mitigation of these potentially crippling effects in future Sandia designs.

“We’re getting true on-orbit data from a space environment,” says Dave Bullington (2664), Sandia’s lead engineer on the experiment taking place in low Earth orbit.

NASA’s “Materials on the International Space Station Experiment” (MISSE) program, under the direction of the Naval Research Laboratory (NRL), provides opportunities for low-risk, quick and inexpensive flight tests of materials and equipment in space aboard the International Space Station (ISS), says NRL lead Robert Walters.

MISSE provides suitcase-like containers called passive experiment containers (PECs) to hold multiple experiments. These are mounted by astronauts on the exterior of the ISS, thus exposing the experiments to the rigors of space.

The seventh in an ongoing series of MISSE flight opportunities, MISSE-7 for the first time offered researchers power and data connections provided by the ISS from which to run actively powered experiments. On Nov. 16, 2009, the space shuttle launched carrying the MISSE-7 equipment and on Nov. 23, astronauts manually deployed these containers on the exterior of the ISS. Sandia has been receiving data from this research payload ever since.

At the heart of these new computing architectures are powerful yet flexible computing chips, configurable to support different missions. These chips are called reconfigurable field-programmable gate arrays (FPGAs).

Since these FPGAs are reconfigurable rather than limited to a predefined architecture, their circuits can be overwritten, somewhat the way a read-write compact disk has more possible uses than a read-only disk. This makes prototyping easier and also permits changing missions on satellites previously designed for other purposes.

Because new generations of FPGAs available from commercial suppliers may not have been fully tested for reliable performance in space, Sandia engineers help validate device performance in a relevant environment before the devices are integrated into high-consequence operational systems.

Sandia, in a partnership with Xilinx, designed the SEU Xilinx-Sandia Experiment (SEUXSE) for this opportunity to fly on MISSE-7.

(SEUs — single event upsets — refer to electronic changes caused by collisions with a single subatomic particle.)

SEUXSE contains a fourth-generation space qualified FPGA (Virtex 4) and a fifth-generation commercial or non-space qualified FPGA (Virtex 5) from Xilinx. Converting the ISS power to levels compatible with the Virtex devices are Sandia-designed power converters.

Space Talk

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known as point-of-load (POL) converters. Sandia engineer Brandon Witcher (5762) provided the POL design for SEUXSE — the first time these efficient, high-quality power converters have been used in space. Special algorithms were developed and programmed into both of these Virtex FPGAs to detect and report upset events while the FPGAs were running typical satellite data-processing tasks.

Dave notes that each Virtex contains two traditional processors in addition to several other circuits designed to capture upset performance data relating to each circuit type. “We’re validating models with four computers inside these chips and sending back data messages every few minutes.”

With the data collected from this platform, researchers in future Sandia programs will know exactly how these FPGAs and POL converters perform in the space environment and how to design mitigation approaches into these processing routines to account for upsets encountered in space.

A second experiment called SEUXSE II, featuring even more recent computing components, has already been prepared to lift off on a future shuttle flight as part of MISSE-8.

SEUXSE II was delivered to NRL on Feb. 1, 2010, and MISSE-8 is expected to launch on the Space Shuttle in July 2010. When it is deployed on the ISS, it will replace the MISSE-7 FPEC, which will be returned to Earth on the shuttle, allowing Sandia researchers to analyze SEUXSE hardware after it has been on orbit.

Sandia is the first to put these versions of the Virtex technology into orbit, Jeff says. These FPGAs and POL converters will become the heart of future processing architectures for Sandia’s DOE/NNSA customers. “The point is for us to get early on-orbit information on how these devices function in space.”

The mechanical design of SEUXSE and SEUXSE II was achieved by Dennis Clingan (2617), experienced in designing packages for NASA programs where astronaut safety is paramount.

**Testing materials in the harsh space environment**

MISSE-7 is also flying the Sandia Passive ISS Research Experiments (SPIRE). These tests passively expose a variety of materials and devices to the harsh space environment. Upon return to ground, they will be tested to determine if degradation has occurred due to synergistic factors such as ionizing radiation, UV exposure, thermal cycling, micrometeorite impacts and vacuum effects. Radiation-shielding structural composites (Dave Calkins, 2664) and GaAs photodiodes (Alan Hsu, 5719) are some of the 15 Sandia passive experiments that together are SPIRE.

Sandia, through the support of the NA-22 Space Nuclear Detonation Detection (SNDD) Program office, developed SEUXSE and SPIRE in an 18-month period for a cost that was one-fifth of other comparable experiments. SEUXSE II was then delivered in one-third the time and cost of the original SEUXSE.

**A space-based polymer mirror that can be reshaped on the fly**

In March 2008, Sandia researchers sent space-grade polymers to the International Space Station to see whether the inexpensive lightweight material, with its easily changeable shape, could replace expensive orbiting telescopes made of polished glass or beryllium. “A conventional telescope mirror takes 18 months to two years and a half years to manufacture,” program manager Jeff Martin (2617) says. “You have to order it and wait and you can’t change it. It’s the long tent pole in a satellite system.”

“But a polymer mirror’s shape can be altered by hundreds of micrometers,” points out Sandia principal investigator Mat Cellina (1821), “and in a continuous fashion.” A polymeric mirror would also be far less expensive.

To monitor degradation of materials sensitive to the strong UV and atomic oxygen found in the harsh environment of low Earth orbit, Mat’s team secured Sandia’s place in the MISSE-6 program, the first time the Labs was so involved.

NASA’s Materials on the International Space Station Experiment (MISSE) program, under the direction of the Naval Research Laboratory, provides opportunities to researchers for low-risk, quick, and inexpensive flight tests of materials and equipment in space aboard the International Space Station (ISS). Sandia researchers equipped their experiment with solid-state data loggers to record declining functions over time.

These experiments, designed by Mat, Tim Dargaville, and Gary Jones (all 1821) were the first of their kind to activate piezoelectric materials and record their responsiveness during cumulative space exposure. They were also the first active MISSE experiments. We also exposed passive samples for comparison,” says Mat.

The process applied voltage to a bimorph strip to make its tip up and down. The extent of motion was recorded.

“Over time, that thin strip should get smaller and smaller,” says Jeff. “Of course, if these materials were phenomenal, there would be no degradation.”

How phenomenal is still an open question. The experiment, expected to be in space for six months, was there for a year and a half because the Columbia shuttle disaster delayed subsequent launches. The materials returned to Earth in September 2009, and were returned to Sandia researchers for analysis in November. Piecing together the results could take as long as a year.

The plastic material is a polyvinylidene fluoride (PVDF) copolymer, a material that can be produced in large plastic sheets. Big rolls are available at Lowe’s, Jeff says. “An extra processing step makes it shrink or grow when you apply a voltage. We invented a new flavor to get the best advantages in a space environment.”

The work is funded by Sandia’s laboratory Directed Research and Development office.

Additional help was given by Gayle Thayer (5711), who is the principle investigator and primary interface with NRL; Tracee Dubin (1513), who provided thermal analyses; Ethan Ilanen (5735) who provided space radiation environment modeling and upset rate predictions; Mythil To (5337), who provided SEUXSE hardware design support; Dave Heine (2664) Jonathan Donaldson (2664), Chris Wojahn (5317), Dave Lee (2664), and Jim Daniels (5337), who developed the algorithms and provided test support for SEUXSE; and Org. 5761, which provided fabrication support.

(Continued from preceding page)
Ten years after entering orbit, satellite continues to serve

Story by Darrick Hurst

For engineers and scientists at Sandia, the evening of Friday, March 12, marked a proud moment in exceptional service to the nation. Rounding of miles above the Earth, the Multispectral Thermal Imager satellite reached its 10th anniversary of service to the nation, completing its 53,000th orbit — far exceeding both its intended maximum life and its remote sensing applications in the process.

“The MTI satellite project is a terrific example of how NASA and the Sandia National Laboratory, along with many of our partners, can develop technology and make it available to the community,” Brian says. “I truly believe we are lucky as a nation to have the MTI and to have kept it going as a resource. The value of this asset and technology is shown not just in the agency and its current role, but also in the multitude of other projects and programs that the MTI either initiated or contributed to directly.”

MTI IMAGERY OF POPOCATEPETL volcano in Mexico reveals subsurface hot spots and maps magma channels, while other thermal data provide information on the effects of escaping gases. The goal is to improve computer simulations needed to model volcanic activity and environmental impact. The study of volcanism is important because they represent one of the most active features of landscape generation and can have a great technical and environmental impact.

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PREPPING FOR FLIGHT — Sandia engineers prepare the Multispectral Thermal Imager for flight. The MTI satellite was launched on March 12, 2000, by the US Air Force from Vandenberg Air Force Base through the DoD Space Test Program.

MTI BANDS OF POPOCATEPETL, volcanes in Mexico reveal subsurface hot spots and magma channels, while other thermal data provide information on the effects of escaping gases. The goal is to improve computer simulations needed to model volcanic activity and environmental impact. (Photo by Randy Montoya)
Employee death
Fred Salas’ friendship was one of life’s precious gifts

By Iris Aboites

Fred Salas (6772) died March 12. He was 58 years old and had been at Sandia almost a quarter of a century, serving as a technical consultant to the emerging algae bioresearch program in the Office of Biomass Program at DOE’s Office of Energy Efficiency and Renewable Energy (EERE) of Alaska.

Fred was recently married to Dan Rader. He was conscientious, hard-working, and thorough. Work tended to come before family and friends. He was an excellent worker and an expert in high-quality products. He had an excellent work ethic and seemed to devour work.

Fred came to work around 5 a.m., says Kathleen Holl-Larese (6772). “He would have all the experiments for the day set up and ready to go. By 7 a.m., he had the lab set up and ready. He was an expert on everything in the lab and mentored us on all the technical details of algae as a fuel source, including rural economic development, high rates of productivity, and the capture of carbon dioxide, which spurs algae growth. Unlike other biocrudes, such as corn ethanol, algae production does not compete with traditional agriculture for land or fresh water. Instead, it can thrive in non-arable land and requires significantly less land while producing higher energy yields than other crops. Fred cautioned the audience that making the leap from the current proof-of-concept analytical stage to full-scale production is challenged by a number of technical hurdles and unknowns, including locating prime regions of the world, algae growth, resource availability, instrument requirements, and the sheer technical issues of harvesting, dewatering, and post-processing of algae into renewable fuels and other coproducts.

Nearly $800 million in stimulus funds has been directed to bioresearch and development projects nationwide, with about $150 million invested in algae-related bioresearch, development, and demonstration projects. An additional $35 million in DOE/EERE program funds is expected to be allocated for algae in FY2010.

Solar state lighting
Julia Phillips (1200), director of the Physical, Chemical, and Nano Sciences Center at Sandia, presented “Realizing the Promise of Solid-State Lighting: The Role of Nanotechnology” at this year’s AAS annual meeting. Her talk covered solid-state lighting and its potential as a near-term generator of energy efficiencies.

Efficiency is an important interim piece of the energy puzzle as we wait for energy research to bring us new renewable fuels and other coproducts. Sandia leads the $46 million Energy Frontier Research Center (EFCR) for solid-state lighting science, one of 46 funded by DOE’s Office of Science. These centers enlist the talents and skills of the very best American scientists and engineers to address current fundamental scientific roadblocks to US energy security.

Julia noted that lighting represents one of the great opportunities for efficiency. Currently, between 75 percent and 95 percent of the energy used in conventional lighting is wasted. ‘Green’ light projects and most forms of light production produce great amounts of heat that is wasted energy and sometimes must be dissipated through cooling.

Lighting currently consumes about 22 percent of US electricity at a cost to consumers of about $50 billion annually. A DOE report released in June details what new solid-state lighting technology it has the potential to reduce energy consumption for lighting by a factor of three to six times, Julia said.

Promoting Climate Literacy conference
Sandia researcher Ellen Stechel (6339), manager of the Energy, Climate, and Atmospheric Management team, presented the latest in climate change research during the conference on Promoting Climate Literacy. The conference took place at Scripps Institute of Oceanography on Jan. 28.

Ellen was part of a panel to update the audience about the state of science. She noted that much of her work today is about mitigating environmental impacts, including managing Sandia’s Sunshine Slope Renewables Project for which she has a strong background in education and policy making. Between 1998 and 2005, she had responsibility for a company’s climate science program and advised the company’s senior management. Now, she oversees Sandia’s climate research, which is based on the North Slope of Alaska.

“I am not a climate expert, but my role has always been trying to communicate to the science community to people who have to make decisions about what they should and should not do,” Ellen says. “I see my role more as an educator.”

More than 150 scientists and educators attended the day-long invitational workshop, which was timed to coincide with the AAS conference Feb. 18-22.

Employee death
Fred Salas’ friendship was one of life’s precious gifts
Employee Perspectives Survey 2010

Analysis of responses enables tracking of trends over time

By Bill Murphy

More than half the Sandia population participated in the 2009 Lockheed Martin Employee Perspectives survey, with results suggesting that, in all, all employees strongly value the Labs as a good place to work. The biennial survey was conducted in October and November 2009 across Lockheed Martin Corp. Sandia’s approximately 8,200 employees (invited to participate) marked a significant increase over the 2007 participation rate of 51 percent. Charlesline Wells, senior manager in Corporate Learning and Professional Development Org. 3520, notes that the survey questions touched on three fundamental areas of work life: human resources (HR), ethics, and diversity. “The questions in the survey encouraged people to think about things that aren’t necessarily part of the day-to-day conversation,” Char says.

Encouraging communications

“The whole idea of the survey,” she adds, “is to get an employee perspective on our work environment and to encourage communications between managers and employees.”

The confidential survey provided participants an opportunity to comment on many aspects of Sandia’s culture, including overall job satisfaction, career development, ethics issues, diversity and inclusion, and more. The results of the survey were directed to managers across the Labs on March 15, with each manager receiving just the data from her or his own organization plus instructions on how to interpret the data and share it with their direct reports. (Directors and above were afforded access not just to direct reports but to all reports within their organizations.)

The power of the Employee Perspectives Survey, says Char, is that it gives managers at all levels across the Labs specific data that can be used to develop action items to improve the Sandia work environment.

Proud to work at Sandia

“It’s important for the credibility and long-term usefulness of the survey process,” Char adds, “that Sandians see that their managers have paid attention to the data, have followed up, and are initiating some action.”

While the survey data can be parsed down to the departmental level, the Labs-wide results offer a snapshot of current employee attitudes about Sandia as a whole. On the positive side of the HR component of the survey, for example, respondents reported that: They are proud to work at Sandia (4.17 on a scale of 1-5); they believe in the ability of their workgroups to develop innovative solutions to tough challenges (4.14); they are not looking for work outside Sandia (4.11); they feel they have their manager’s support in following Sandia’s values of ethical workplace conduct (4.19); and they are constantly looking for ways to do their jobs better (4.29).

On the side that might be categorized as “needs improvement,” respondents reported concerns over management’s effectiveness in communicating about current issues and long-term direction. That’s been a recurring issue, Char says, but CAS did not fully address the issue of redundant requirements, which come to Sandia in the form of detailed transaction monitoring, evidence provided through Assurance. The idea behind ILMS was to allow SSO to adopt more “systems-level oversight” using assurance concepts as appropriate from the CAS approach, in place for the remainder of FY10. The new PEP will focus more on outcomes, mission, and using Sandia’s Integrated Laboratory Management System (ILMS) to provide assurance, Joe says.

Changes likely to ILM

Many of these contractual changes will not be immediately obvious to most Sandians, says Matt and Joe. However, Sandia’s corporate processes and procedures will be reexamined and adjusted to find and more efficient ways to align with the changes to directives. Accordingly, ILM likely will experience some changes, too.

ILMS is Sandia’s management system and is the way the Labs meets the requirements for implementing the Contractor Assurance System, or CAS. When Sandia’s current M&O contract went into effect in FY04, it was the first in the DOE complex to incorporate the CAS concept. The idea behind ILMS was to allow SSO to adopt new “systems-level oversight” using assurance concepts in lieu of detailed transaction monitoring, Joe says.

Today, all of the sites in the DOE complex have similar CAS provisions in their contracts. But CAS did not fully address the issue of redundant DOE requirements, which come to Sandia in the form of DOE orders and manuals, and are accompanied by a Contractor Requirements Documents, or CRDs. The ultimate intent of contractor assurance is that DOE specifies requirements — the “whys” — and Sandia and other contractors determine how to meet them. Over time, however, “hows” have crept into the directives and CRDs, which are then reflected in internal processes and procedures.

KCP piloted new governance model

In 2005 former NSNA Administrator Linton Brooks directed, R KCP and the Kansas City Site Office to pilot a governance structure in which the “hows” would be removed from the M&O contract. KCP established structures to develop and meet the requirements, allowing the site office to perform systems-level oversight. While the survey results have already been scheduling and conducting meetings with their staffs to discuss the survey results and develop action items.

The collective result of those discussions, Char says, will be “to help us be proactive with our number-one priority: Making sure we keep Sandia a great place to work.”

“The whole idea of the survey is to get an employee perspective on our work environment and to encourage communications between employees and management.” — Charline Wells (3520)

Contract

(Continued from page 1)

of the relationship between the government and the management and operations (M&O) contractors. At the behest of NSNA Administrator Tom D’Agostino, a team led by Div. 9000 VP Matt O’Brien and Div. 9000 VP Joe Polito, and championed by Deputy Director Al Romej and SSO Manager Patty Wagner, has been reviewing directives — Sandia’s marching orders from DOE — looking for opportunities to eliminate require-

ments that are redundant with existing state or federal requirements, or to replace them with industry or site-specific standards that achieve the same goals.

“The whole purpose is to refocus our joint efforts and resources to better accomplish our missions,” says Joe. “We improved efficiencies and cost savings are other desired outcomes.”

“This is good for the government. It’s good for Sandia,” he adds. “It gives us the freedom and responsibility to design our own systems to meet NSNA’s requirements.”

First phase to culminate in new PEP

In the just-completed first phase of the effort, 34 of 40 directives reviewed were recommended for removal from the current contract. The remaining 68 directives will be reviewed later this year, Joe says. Sandia and SSO also plan to adopt a new Perfor-

mance Evaluation Plan (PEP) — objectives and milestones upon which Sandia’s performance is evaluated — at the end of March, which will represent the official adoption of the new business model. The PEP, which will incorporate concepts as appropriate from the KCP approach, will be in place for the remainder of FY10. The new PEP will focus more on outcomes, mission, and using Sandia’s Integrated Laboratory Management System (ILMS) to provide assurance, Joe says.

“We all need to recognize that this is a journey. It won’t be perfect right away but will evolve over time.” — Joe Polito (9000)

A great opportunity

Joe emphasizes that Sandia will still have to meet the requirements of NSNA, DOE, and the law. “SSO and Sandia will be freed to do the work and simplify the many layers of process requirements that have built up over the years,” he says. “This gives us the freedom and responsibility to design our own systems to meet these requirements. We will operate more like a commercial organization.

“We all need to recognize that this is a journey,” says Joe. “It won’t be perfect right away but will evolve over time. It’s a big shift in thinking in the part of government and the Labs and a great opportunity for both.”

“The Kansas City Plant simplified their operations, was able to devote more attention and resources to their mission, and ultimately saved money.” — Gary Zura (10010)

Statistical analysis

This year, Char notes, a Sandia statistician worked with HR to analyze the survey data, correlating the 2009 responses with responses from previous Employee Perspectives surveys and Sandia-conducted Pulse surveys. The statistician’s insights, Char notes, “have been invaluable in helping us track trends and to identify points in time” when specific issues become widespread concerns.

Using trend analysis, Char says, “helps us discern where we are or aren’t making an impact” with specific action items designed to improve a challenge area. “This kind of analysis keeps us from going down blind alleys thinking we’re addressing an issue when, in fact, we might not be getting to the heart of it. It tells us where we’re scratching at the top, but not getting at the sides,” she says.

While the survey highlights Labs-wide issues, it is perhaps at the individual organizational level that the results may be most meaningful. Many managers across the Labs have already been scheduling and conducting meetings with their staffs to discuss the survey results and develop action items.

A great opportunity

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Larry Lane House groundbreaking scheduled

The groundbreaking for the Habitat for Humanity House built in memory of retired Sandian and long-time Habitat SWAT Team member Larry Lane will be at 8:30 a.m. Saturday, March 27. The house site is 6104 Townsend Place SW. Also, the groundbreaking for the 10th Sandia Habitat for Humanity House is tentatively scheduled for Saturday, May 15. For more information, contact Sam Bono (3652) at 284-3226 or sbono@sandia.gov or Patty Zamora (3652) at 844-2146 or pgzamor@sandia.gov.
In the wake of the devastating earthquake that ravaged Haiti this year, people around the world responded with an unprecedented outpouring of support. Sandians, characteristically, did their part, offering material and moral support in many ways, motivated by the desire to help the Haitian people reclaim their lives and rebuild their homes.

Among other things, Sandians responded to a call from the Christians in the Workplace Networking Group (CWNG) to donate crutches for the Haitian relief effort. In answer to an item published in the Sandia Daily News, Sandians over the course of 10 days in February brought in more than 60 pairs of crutches. Carol Eiffert, (3600) a member of the CWNG steering committee, watched in growing delight and gratitude as the crutches piled up in the office of her boss, Public Relations and Communications Center 3600 Director George Rhynedance.

Through previous charitable activities, Carol had been in contact with Albuquerque-based St. Anthony’s Alliance, which runs several mostly medical-related projects in developing countries, including Haiti. It turns out that the group was seeking crutches to deliver to an orphanage it is associated with in Haiti.

“They asked me if I could help,” Carol recalls. “I told them, ‘We might get a lot of crutches.’ And they told me ‘We can use all you can get.’”

Albuquerque orthopedic surgeon Teresa Balcomb, one of the founders of St. Anthony’s Alliance, delivered the crutches to Haiti in late February, where they were immediately distributed to people in need. The earthquake had left many thousands of Haitians with severe and life-threatening injuries, including leg injuries requiring treatments up to and including amputations.

Carol says she was gratified by the outpouring of support from Sandians, who, she says, proved once again that they are “incredibly generous people.”

And Elyce Tryon, executive director of St. Anthony’s Alliance, offered high praise for Sandians. “In less than a week,” she wrote to the Lab News, “we received 60 pairs of crutches and $100 from the generous people at Sandia. It is impossible to express with words the effect that just one pair of crutches can have on a person who just lost his leg. We are infinitely grateful to the people at Sandia for this wonderful outpouring of support.”

Now, CWNG is asking Sandians to step to the plate again. With the Haitian rainy season coming, tens of thousands of people are without homes or shelter. The networking group is seeking donations to acquire tents to send to the still-suffering Haitian people. For information, contact Carol at 844-6002 or caeiffe@sandia.gov.

CRUTCHES DONATED BY SANDIANS in February were delivered to Haitians in need, including many who suffered injuries requiring amputations.

CRUTCHES delivered to Haitians injured in the earthquake made an immediate difference in people’s lives.