NNSA chief, lab directors make case for broader national security mission

By Michael Padilla

In testimony before the Strategic Forces Subcommittee of the House Armed Services Committee last week, NNSA presented its new vision and plan for nuclear weapons complex modernization. The testimony, led by NNSA Administrator Tom D’Agostino, focused on NNSA’s plan to reduce the footprint of the complex through consolidation of programs, making it smaller, safer, more secure, and cost-effective, as well as being responsive to the needs for deterrence.

"It struck me that we were going about this completely backwards," Jaideep says. "They had no idea how many people would get sick tomorrow or two days from now."

He proposed an LDRD where he would develop a computer model that can do just that.

"In the past decision makers were only able to observe — watch people get sick, go to the hospital, and maybe die," Jaideep says. "They had no idea how many people would get sick tomorrow or two days from now."

He came to this realization in 2004 when he was working on a project for the Department of Defense where he developed a computer model that had decision makers responding to an epidemic at a naval base.

"It shocked me that we were going about this completely backwards," Jaideep says.

The team consisted of diverse experts in epidemiology, mathematics, computer science, and infectious disease researchers.

In his third year of internal LDRD (Laboratory Directed Research & Development) funding, Jaideep has developed a computer model that can do just that.

Imagine an outbreak of a disease like SARS (severe acute respiratory syndrome) that will likely become an epidemic affecting thousands of people. Wouldn’t it be helpful to know early in the epidemic how fast the disease would spread and how many people may be infected so that the medical community could be prepared to treat them?

Sandia National Laboratories researchers have done just that. They have developed a computer model that can predict the number of people likely to be infected and die from noncommunicable illnesses like anthrax — ailments that could be caused by a potential bioterrorist attack — as well as communicable diseases like smallpox.

Technique estimates how many people will fall sick in an epidemic

Jaideep Ray focuses on anthrax and smallpox outbreaks

By Chris Burroughs

Jaideep Ray has developed a model that can determine in the first few days of an epidemic how fast the disease will spread and how many people may be infected.

TIME-LAPSE IMAGE from a total internal reflection fluorescence microscope of quantum-dot labeled proteins fluorescenting on the surface of a cell membrane. The sections empty of the purple-labeled tracks are thought to have formerly unforeseen coral-like structures that may restrict protein movement. Scale bar represents 2 microns.

If you’re physically attacked, you hope you’ll respond. But to activate a response, a cell must become aware of the presence of the intruder on its membrane, and prepare to cause mischief.

That hoped-for response to threat includes the molecular level: We want our cells to respond defensively when an antigen lands on a cell membrane and prepares to cause mischief.

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"It shocked me that we were going about this completely backwards," Jaideep says.

He proposed an LDRD where he would develop mathematical tools that, using information from the first days of an epidemic, would estimate how many people were going to get sick during the course of the epidemic.

He spent the next three years working on the model that can determine in the first few days of an epidemic how fast the disease will spread and how many people may be infected.

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Inside . . .

Sandia National Laboratories

Job restructure update

Team begins compiling descriptions of work people perform

Job analysis continues through August

Sandia’s job restructure implementation team — a group representing every division at Sandia — is in phase two of its project to develop a new, market-based job classification system for the Labs.

The purpose of the job analysis phase is to produce a set of current occupations, descriptions reflecting the work of Sandia’s exempt, non-represented employees (including MLS, MLS management, MTS, and MTS management). Occupation descriptions are broad, generic summaries of the types of work people perform. The descriptions the team develop will be used later in the project to compare Sandia’s work and their salaries with those of their peers outside Sandia.

"This is an essential step in developing a system that is more consistent, more flexible, more fair, and more closely aligned with the marketplace," says HR and Communications Div. 3000 VP John Slipke.

Job families, not ladders

After 10 years of use, Sandia’s Integrated Job Structure (IJS) is outdated and out of sync with the marketplace, says John. The result is that Sandia may be paying too much for its workers.

Managed by Lockheed Martin for the National Nuclear Security Administration
That's that

Got a note the other day from Bob Locher (10263) in Sandia's mailroom. Paperclipped to the note was a catalog for various kinds of forklifts and such. Bob wrote: "I've sorted thousands of pieces of mail in the Sandia Labs mailroom but I've never found this catalog before!" Bob had slapped a sticky note on the catalog with a bold arrow pointing to the mailing label. It read: "Sandia National Poultry." Says Bob: "Maybe this is the real 'top' of the Sandia hierarchy. We're really a chicken processing facility." "Hmmm?" I guess we are.

Now, I would guess that over the years most of us have processed some paperwork that we’d put into the "poultry-dropping" category (to give it a polite name), but does that make us a chicken plucking facility? I don’t think so. All those turkeys we’ve worked for over the years? (My present management excluded, of course.) Hmmm? Could this forklift company be on to something.

Maybe we ought to embrace this new identity. As NNSA proceeds to reduce its current workforce "house man". Another good way to get us to hunker and down and say, "There’s nobody here but us chickens."

Hope you’ll forgive the scatological reference above, but while I’m on the subject, it reminds me of a story that actually involves our founder and hero, President Harry S. Truman. (He charged us with our mission to "render an exceptional service to the national interest," for the US Department of Energy's Classified ads.)

President Truman and his wife Bess are at a party. The president, known for his salty language, can be heard above the crowd calling some political rival’s recent speech "horse manure." Another guest whispers, "My dear, you really ought to get the president to tone down his language a bit." To which Bess replies, "My dear, you don’t know how long it took me to get him to say manure."

Last time, I wrote about the coyote I saw outside my office window. Well, that column piece generated several email exchanges between me and other Sandians who had their own stories to tell. Betzi Hitz (3334), who works over in MD307 (near Medical), says she saw a coyote trotting through the Kuhband Gate one morning "like he/she was just another stray dog."

If being wary of coyotes is a good idea — and it is — consider what they have to watch out for in Livermore. Duane Lindner (8120) sent along an all-hands message distributed to Sandia/Californians the other day: "There has been a report of a mountain lion sighting near the Arroyo south of building 916. Please be aware of your surroundings and take precautions when outdoors..." Added Duane: "Be happy you’re not troubled by cats." Oh, I am. Duane. I truly am.

I got a note the other day from Bob Locher (10263) in Sandia's mailroom. He sent along the photos of another bit of nature, a little piece, playing itself out right before our eyes. His accompanying note said: "It’s not like a cougar sighting or a coyote eating a rabbit, but in the ditch near Bldg. 899 there are tadpoles. As of this morning, some have real legs." Mike’s note struck a chord with me: Not long ago, my son and I drove out to the sandstone cliffs on the east side of El Malpais National Monument near Grants. In a tiny cup-shaped hollow high up in the sandstone bluffs, there was a little pool of rainwater. I mean, this wasn't five gallons of water. You just know that in our dry climate that pool couldn’t last very long, but it lasted long enough. The pool was teeming with tadpoles.

It recalls to the line by the Jeff Goldblum character (the mathematician Ian Malcolm) in Jurassic Park: "Life finds a way." Indeed. See you next time.

— Bill Murphy (505-845-0845, M50615, wmurphy@sandia.gov)

State accepting requests for computing time on Encanto

The 172-teraflop Encanto supercomputer, supported by the state of New Mexico's Computing Applications Center (NMACC), is still accepting requests from a few good Sandians interested in accessing nonclassified medium computing power. The capacity machine is intended for open collaboration across a broad community and does not support export-controlled codes. The system is expected to be available this fall.

Interested Sandians are encouraged to submit project requests via Sandia's HPC Estimations & Requirements Tool (HRET) available at http://computing.sandia.gov/hret. Select "External (NMCAC)" as the category of your request. Information about the system is also available at Sandia's NMACC website at computing.sandia.gov/platforms/encanto.

Encanto is intended to help economic development across the state by increasing the complexity levels of problems that can be addressed by New Mexico-based companies and institutions and by helping to merge company, national labs, and university technologies. Sandians personnel served on the technical evaluation and selection committees for procurement of Encanto, which was built by Intel Corp. and SGI and is maintained in Rio Rancho. Sandia has fulfilled its portion of the machine's computing time, as have the found ing institutions: New Mexico State University, New Mexico Institute of Mining and Technology, University of New Mexico, and Los Alamos National Laboratory. Another 10 percent is allocated to other institutions of public education, communities, and state agencies in New Mexico. Forty percent is allocated for general competition through a proposal process.

The deadline is an 8/15/08 SGI NPS 1065 deadline on the open network. The system will use the state's high-speed computer network, LambdaRail.

CINT ‘flagship’ areas raise hopes of increased scientific impact

New org structure requires single director rather than codirectors

By Neal Singer

An approach that will group research around several "flagship" areas has received the interest of researchers at the Sandia Los Alamos Center for Integrated Nanotechnologies (CINT), says Julia Phillips, director of Sandia’s Chemical, Materials, and Nanotechnology Center (CMNC). "It will help build community," she says, envisioning researchers congregating to discuss and collaborate on joint projects.

Three CINT researchers interviewed at random by the Lab News—Brian Hwang, Bob Locher, and Mike Lilly—agreed the concept could help bring together diverse capabilities of the center to have greater impact. "We can have an opportunity to work with everyone," Bob says.

CINT researchers interviewed at random by the Lab News—Brian Hwang, Bob Locher, and Mike Lilly—agreed the concept could help bring together diverse capabilities of the center to have greater impact. "We can have an opportunity to work with everyone," Bob says.

Anyhow, it seems that Sandia’s Los Alamos Center for Integrated Nanotechnologies (CINT), a Lockheed Martin company, for the US Department of Energy’s classified ads....

...would bring together everyone. However, the administrative structure continues to evolve.

The center now has a single director instead of two codirectors. The leadership structure had been joint between the two labs until this past February, when the new structure with a single primary point of contact with the BES customer kicked in.

LANL’s Toni Taylor, a former codirector, was selected as CINT Director, effective Feb. 1, 2008. Sandia’s Bob Hwang will continue to serve as codirector until LANL maintains a dedicated gateway facility in Los Alamos.

To promote harmony and efficiencies, director from Sandia Div. 1000 VP Rick Stulen and LANL Associate Director for Experimental Physics, Susan Semenoff, underwrite CINT leaders, and outputs that “provide value to multiple national security customers in addition to DOE’s Office of Basic Energy Sciences (BES) which underwrites CINT.”

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However, the administrative structure continues to evolve.
Rad detection for non-port-of-entry border sites

By Mike Janes

US border and immigration policy remains a central topic of discussion for politicians, the media, and citizens. But even as cable news commentators continue to debate the issue and the presumed Democratic and Republican presidential candidates formulate their own immigration platforms, Sandia researchers have been working with the Domestic Nuclear Detection Office (DNDO) and Customs and Border Protection (CBP), specifically Border Patrol, to study the border for another reason: the nuclear terrorist threat.

For the past three years, Sandia researchers have been studying the problem of how to prevent nuclear smuggling through “non-port-of-entry” border regions, which are loosely defined as the broad swath of land patrolled by Border Patrol where it is illegal to enter the country. Non-POE can include fixed interior checkpoints, which are controlled by agents on horseback or on all-terrain vehicles, and other locations along the US border, which extends nearly 2,500 miles in the southern US and more than 3,000 miles in the north.

The border may itself be a distinct line with clear separation between nations. The Border Patrol, however, is responsible for a region that can extend up to 100 miles wide, and they conduct operations throughout this region. Consequently, the studies Sandia has been conducting have necessarily focused on the diverse operations employed by Border Patrol agents in various parts of the country.

Operational flexibility

“The main tenet for Border Patrol agents, we’ve learned, is operational flexibility,” says Jason Reinhardt (8130), a Sandia electrical engineer who’s responsible for a region that can extend up to 100 miles wide, and they conduct operations throughout this region. Consequently, the studies Sandia has been conducting have necessarily focused on the diverse operations employed by Border Patrol agents in various parts of the country.

Operational flexibility

As in anything that requires planning the collection of data, the equipment needs to be portable and fit within the scope of the agent’s other equipment and tasks.

Such operational realities, Jason says, often go against the fundamental physics of radiation detection, adding to the challenge of deploying a viable detection system that meets the needs of the end users.

The performance of sophisticated detection equipments, which require a certain level of expertise among law enforcement officers, is clearly unsuited to non-POE applications for demonstrable, operational reasons, according to Jason. Such equipment is too expensive and difficult to use in the often-harsh and unpredictable environments that border agents encounter. Heavy winds, dust, deserts, and other environmental realities all contribute to the problem, and the Border Patrol agents themselves are typically driving wide-open spaces on foot or in a small vehicle which makes the packaging and portability of detection equipment next to impossible.

A systematic, step-by-step approach

In addition to trying to understand the operations of the Border Patrol agents, Sandia has at the same time been analyzing specific, off-the-shelf detection equipment that could be made part of the border’s defense posture. This is especially key, Jason says, since the effectiveness of many of the radiation detection products is often “oversold” by manufacturers or may not take into account the operational realities involved.

Taking a phased approach to the work, the researchers typically study the instruments in a controlled laboratory environment first before taking the equipment to the Nevada Test Site or the Albuquerque-based Technical Evaluation Assessment Monitor Site (TEAM) for further evaluation. Then, they familiarize border agents with the instruments in the lab and, finally, move out to the field with the agents and begin to integrate the equipment with CBP’s regular operations.

For Border Patrol, the equipment needs to be portable and fit within the scope of the agent’s other equipment and tasks.

In addition, CBP operations, and making technical and operational recommendations for the future.

Dick Claassen helped shape Labs’ culture, character

On June 16, Richard S. “Dick” Claassen passed away at his home in Santa Rosa, Calif. He was 86 years old. He will be sorely missed, but the impact he had during his 36-year career at Sandia lives on.

Dick gave Sandia nearly four decades of distinguished service, beginning in 1953 and ending as vice president at Sandia California from 1982 until his retirement in 1987. He’s been described as a catalyst in creating the culture we now have at Sandia.

Dick was a very important part of Sandia’s evolution to a full-spectrum M&D laboratory,” says Tom. “He played an enormous role in setting up our research programs. He spent considerable time in engaging the nation’s university community. He led our California site at an important time of transition. In his retirement he stayed in touch and continued to provide support to the executive team. All of us who knew him and all who benefitted from his work will miss him.”

Add1 Div. 1800 VP Rick Sutlen. “Dick was the driving force behind our world-class research and workforce, caring deeply that the lab attract the best staff from our nation’s universities.

Dick championed many aspects of Sandia culture that we now consider a given — the vitality of fundamental research to Sandia’s mission, the importance of education and professional development, and that integrity is fundamental.

As an early PhD recruit, it is appropriate that Dick went on to develop the process for PhD recruiting at Sandia. He was especially proud of the people he recruited early in his career, including John Jones, Albert Deckner, Rick Winheim, and John Crawford, who succeeded him as vice president of Sandia California. In 1958, he recruited the first female black PhD — Kathy Lawson — and later promoted the first woman, Ruth Whan, to department level.

“‘It was indeed an honor and privilege to have worked with Dick. My first promotion came during his tenure as vice president of Sandia California, as did Joan Woodard’s. It was a terrific learning opportunity to serve under his leadership,’ says Mim John, who retired as Div. 8000 VP in 2006.

Dick describes two valuable principles he learned from Dick that influenced her throughout her career, including post-Sandia work. “The first was his commitment to diversity, which came long before it was demanded by external forces. For him, it was just the right thing to do,” she says. “The second was a tough but fair approach to personnel matters. He was willing to make difficult decisions.”

Dick had many accomplishments in his career — advances in weapons design, establishing the concept of fundamental research at Sandia, and starting programs in radiation damage, plasma physics, atomic and molecular physics, solid state, and magnetic resonance. In interviews given at the time of his retirement, he pointed to the maturation of the Combustion Research Facility as a source of pride.

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Dick was always very interested in the details of new science and technology and seemed most engaged and excited when visiting the labs or being briefed by the staff. He became vice president of Sandia California while I was away from Sandia working at Exxon Corporate Research in the 1980s. I was lucky to be able to share my industrial research experiences and lessons learned when I returned, many of which I incorporated here at the Labs. I still cherish the time we spent together, particularly when we went to the California Energy Liaison Office (8302). In addition to his contributions to Sandia, he was a man of many talents and enthusiastic, including skiing, golfing, woodworking, barbershop singing, and travel. He was a devoted husband, father, and grandfather. He used his considerable intelligence, energy, and leadership skills to make significant contributions to each community of which he was a part.

“Dick remained a valued source of counsel for me throughout the remainder of my Sandia career, and I will miss him dearly,” says Mim. — Patti Koning
**Job restructure**

(Continued from page 1)

much for some types of jobs and not enough for others (Lab News, May 23, 2008). Offering pay and career opportunities that more closely match what employees' pay are receiving outside the lab is critical as Sandia strives to attract and retain the best people to support Sandia's mission, he says. The new job structure departs from the IPS job approach (the MTS and MLS structured in favor of 15-20 job families, or groupings of like occupations). (See the Change@Sandia website, http://changeatsandia.sandia.gov, for the preliminary list of 17 job families and other information about the new project.)

Since identifying the initial job families list in June (the first phase of the job restructuring project), team members have been working with the management of their own divisions to develop occupation descriptions that capture the work performed in their organizations. Once each division has reviewed the occupation descriptions, the team will review them again to ensure that the final occupation descriptions will work across all divisions.

**Link to pay**

In September, team members plan to move to the third phase of the project: finalizing the new job structure. The purpose of this phase is to determine how the occupations will be linked to pay.

**Epidemic**

(Continued from page 1)

Jaideep says that characterizing diseases requires observations of real outbreaks and then building computer models around them. He did this for a 1979 anthrax outbreak in Sverdlovsk, a city of 1.2 million people in western Siberia. Initially the Soviets said the victims got the disease by eating anthrax-contaminated meat or having contact with dead animals. At the end of the Cold War, American physicians reviewed medical comments in documents published by pathologists who performed autopsies during the epidemic, confirming the pathogen was anthrax. Records showed that 89 people were infected by inhaling the pathogen. A total of 68 died of the disease. Using the computer program, Jaideep ran the data obtained from hospital records of people who became sick in the early days of the epidemic. The program automatically identified many combinations of the unknown number of infected people, time, and dose of anthrax exposure collected over the first three to five days of the epidemic. He is within a few months of refining a computer model that could infer the characteristics of a noncommunicable epidemic models that predict the evolution of the epidemic in the population and predict the number of people at risk, time, and dose of anthrax exposure until it got as close to the real observation as possible.

Jaideep says that characterizing anthrax is different from characterizing infectious diseases because the anthrax exposure was not obtained from a specific point in time but instead from people's daily activities. For example, residents of one cross-compound social links. Using this second approach, he inferred the transmission rate as well as the cross-compound social links that existed. He inferred the transmission rate of anthrax into one of a few possible network configurations. While he estimates that it will take about four to six months to overcome this “stickiness” of the inference process, although some people who are well below or well above market could see limited or accelerated salary growth.

**Much to be determined**

It may seem at this point that relatively little has been determined, says John. That's because job restructure is a long-term project, and many decisions will be made based on work being performed by the team now.

“Given the potential impact on Sandia’s challenge is that making inference techniques on social networks is hard. There is a tendency for the inference mechanism to quickly lose information about the network structure,” he says. "If they had had this program in 1979, the Soviet officials would have known that this was going to be a small outbreak. Instead they got into a panic and vaccinated 50,000 to 60,000 people — the whole southern end of the city."
Secret life of cells

(Continued from page 1)

bran, just as a human first must become aware of a mosquito on a forearm in order to slap it.

In a triumph of joint experimental work, physicists at Sandia and biologists at the University of New Mexico’s Cancer Research and Treatment Center have combined techniques amazing to the layperson to make real-time movies that show exactly how a 50-nm-thick cell membrane notifies the cell it encloses that a hostile alien presence—an antigen—has made a landing.

Characterization in real time

It was not until 1998 that we were able to characterize the motion of the antigen receptors in the membrane in real time as they respond to the antigen, says Alan D. Keith, the team’s leader. In 1998, we learned the cell membrane is really complicated and highly structured, rather than fluid and unstructured, as the theory held.

This new information explains why membrane proteins may not always notify the cell nucleus of problems. The membrane structures, which resemble building corrals, says Alan, move around in the membrane.

But they restrict the motion of proteins. The response of the cell requires that the antigen receptors cluster with other proteins to commence the cellular signaling network.

“The proteins are like Paul Revere giving a warning,” says Alan. “When proteins bind antigens, they begin to cluster. This causes other proteins to throb around. That may send a message from the membrane to the cell nucleus that something’s wrong.”

“Both if there are places on the membrane that are walled off and an antigen lands there, the cell isn’t notified of the problem, no warning,” added Tom Hunter.

UNM researchers already knew that incoming antigens were detected by proteins present in the lipid matrix of the cell membrane. But how exactly to determine the process?

DOE Assistant Secretary for Energy Efficiency and Renewable Energy Andy Karnser gets overview of Sandia capabilities

(Continued from page 1)

formed into a national security enterprise, one that can respond to evolving global security threats. He said the formation into a national security enterprise, one that can respond to evolving global security threats, is an effort to help shape the complex as it moves forward.

The nuclear weapon stockpile will no doubt be different as we move forward. Its composition and size will likely be altered, and it will be increasingly ‘orderly,’” Tom wrote that even as NNSA transforms to a broader national security mission, one of its primary jobs will be to ensure the mission.

Tom Hunter’s statement focused on three issues: the preferred alternative for complex transformation, the preferred alternative for complex transformation, and the preferred alternative for complex transformation.

Tom wrote that even as NNSA transforms into a national security enterprise, one of its primary jobs will be to ensure that the nation’s defense infrastructure is safe and secure and more proliferation-resistant. “We’re actively making engines work better, to use sun light, to help making engines work better, to use sun light, to help nuclear energy be safe and secure and more proliferation-resistant.”

In the written testimony, Tom expressed his concerns about the implementation of Complex Transformation with respect to Sandia’s interests in high-performance computing and the role of Sandia California. He also wrote that he is concerned that proposed reductions in appropriations affecting the Stockpile Stewardship Program will impact the Labs ability to perform the mission.

“However, if these concerns can be addressed, then I see no reason why the Preferred Alternative for Complex Transformation would not be in the nation’s interest,” Tom wrote.


Externally, the information is available at http://armedservices.house.gov/hearing_information.html.

NNSA testimony

(Continued from page 1)

DOE Assistant Secretary for Energy Efficiency and Renewable Energy Andy Karnser gets overview of Sandia capabilities

NNSA labs, NTS meet with media

During a special media roundtable a day prior to the congressional testimony, Tom D’Agostino discussed with 16 reporters NNSA’s vision for Complex Transformation and its benefits to the nation.

Also present at the roundtable were Labs Director Tom Hunter, LANL Director George Miller, LANL Director Michael Anastasio, and Nevada Test Site Director Steve Younger.

The roundtable included the distribution of the vision statement signed by DOE Secretary Samuel Bodman (Lab News, July 9, 2008).

The vision states DOE’s commitment to invest in its people and the nation’s scientific infrastructure to enhance the nation’s capabilities and to develop the nation’s defense, energy, and other critical security issues.

Many of these labs are currently working on these challenges.

During the roundtable, D’Agostino outlined two possible futures for the NNSA complex: one that maintains the status quo, which requires pouring billions of dollars into an aging infrastructure or, the preferred alternative — transforming the nuclear weapons complex into a national security enterprise that is the best alternative for the nation.
53 individuals, 71 teams

2008 Employee Recognition Awards program honors teams, individuals for exceptional contributions

Individual honorees

[Image 45x549 to 134x660]

More than 300 Sandians — individuals, team representatives, and their guests — gathered last month at the Embassy Suites Hotel in Albuquerque for the 2008 Employee Recognition Night. Sandia’s annual celebration of exceptional service, leadership, technical accomplishment, and teamwork.

This year, the awards honored 53 individuals and 71 teams for their contributions to Sandia’s mission success.

"Your contributions," Tom continued, "are part of Sandia’s collective, dedicated effort to provide exceptional service to the nation. I am proud of you and grateful for your commitment."

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Complex Transformation: Science, Technology, and Engineering (STSE) Strategy Team

For developing and demonstrating the soft-magnetic electron beam diode as an X-ray source for scaled core punch radiography.

Mark Biggs 10221
Mark Bishop 6439
Wesley Bruno 2553
Randolph Castillio 4127

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The Video Streaming Team uses industry-proven technology and professional video production expertise to effectively communicate Sandia’s mission and business objectives to the public.

The Laboratory's Radiation Protection Diagnostic Services (RPDS) developed a rapid analysis technique to determine pollution.

Additionally, exposure to radioactive material during a radiological event for the Center for DisasrControl (CDC). The RPSD developed an interactive command control system to two operational AF Facilities.

The Optics Bench Manufacturing Team plays a crucial role in the successful, safe, on-time completion of all planned System Dedication and effort in identifying factors that led to a budget shortfall in Org. 02431 and developing tactics for improved business.

As of February 2008, Sandia’s STARS program by fabrication of Second Stage Conduit Cable Fabrication Team, implementation of Sandia’s STARS program by operational testing and Red Team, engineering support.

For successful, safe, on-time completion of all planned System Dedication and effort in identifying factors that led to a budget shortfall in Org. 02431 and developing tactics for improved business.

Evaluating the Video Streaming Team's contributions to the corporation’s mission and business objectives to the public. The Laboratory's Radiation Protection Diagnostic Services (RPDS) developed a rapid analysis technique to determine pollution.

Characteristics of the outstanding leadership and extra effort to accomplish the activities that helped personal grow personally and professionally inside and outside Sandia.

New Mexico Hispanic Leadership Outreach Committee

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THE MESA PROJECT TEAM (see citation above) has been named a winner in the prestigious 2008 Lockheed Martin NOVA Awards. The NOVA Awards were created in 1995 to recognize outstanding contributions to the corporation’s mission, business objectives, and technical contributions to, and exceptional support of, Sandia’s STARS program by operational testing and Red Team, engineering support.

Contribution to two operational AF Facilities.

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Sandia's mission work cost effectively.

...polar craters.

...achieved on an MDA STARS FTG-03A flight test.

...significant new assessment technologies and capabilities — resulting in

...Successful delivery of an avionics subsystem with a newly designed

...This team invented and developed a new methodology for processing

...The hardware assessments team has successfully developed several

...BN-350 Spent Fuel Storage Project team

...This cross organization team met all requirements in successfully

...For exemplary teamwork in building and integrating the vehicle-scale

...For pioneering new design concepts for achieving the promise of

...The team wrote the ground-breaking Laboratory Biosecurity Hand-

...TriSAR

...TEVA Water Security Research Team

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...SANDIA LAB NEWS  August 1, 2008  Page 8

**Lynn Yang**

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(Continued from preceding page)

Traci Martinez, Kevin Heid, Jeremy Goldil, Glyn Evans, Randall Corner, Daniel Thomas, Paul Cato, David Coughlin, Ryan Procog, Gregory Haeeman, Arthur Baxas, Randolph Adell, Mark Freeman, Richard Kinnem, William Richardson, Lomale Sanchez-Guerra, Steven Spahr, Craig Matz

**Hardware Assessments Team**

- This team has assessed system has successfully developed several

- significant new assessment technologies and capabilities — resulting in

- the first-ever New Mexico Environmental Division inspection of a

- provided a transition authentication and authorization capability

- The current integrated cold start hydrogen storage technology

- For exemplary teamwork in building and integrating the vehicle-scale

- Collaboration Security Work-For-Other Teams

- For outstanding technical contributions and pragmatic leadership in

- An international cross-disciplinary team achieved a significant

- Significant new assessment technologies and capabilities — resulting in

- New Mexico Environmental Division inspection of a

- This cross organization team met all requirements in successfully

- For exemplary teamwork in building and integrating the vehicle-scale

- Hydrogen Storage Engineering Team
The vision for the campus-like park began in the early 1990s when Dan Hartley, now-retired former vice president of development at Sandia, began discussing the idea to get it where we wanted it.”

So far the pace has moved fast. What started in May 1998 as a big piece of land on the edge of Eubank Boulevard near Kirtland Air Force Base, Bernalillo, Sandoval, Torrance, and Valencia counties. Now, the park has had nearly $800 million in cumulative impact on New Mexico as a result of personal income tax (using a 5 percent rate) by $722.5 million, and $5 million in gross receipts tax revenue to Albuquerque.

The park has also helped increase revenue in New Mexico by $37,824. It has been instrumental in economic impact on taxable consumption (goods and services) and $40 million in cumulative impact on gross receipts tax revenue in New Mexico and $4 million in gross receipts tax revenue to Albuquerque.

J. "I would like to say that this a milestone for us as Kenyans, because this represents the partnership between the US and our country in international security," said a member of the Kenyan entourage. "This workshop has been extremely beneficial for us in a lot of ways. We're studying how America manages border security, because in Kenya we are surrounded by countries that are involved in war. It has been an eye-opener visiting this country and meeting your armed forces. Border security is not the primary role of our military, but ultimately matters of security are of concern to the armed forces. I want to express my sincere appreciation from our government to the US government and military for facilitating this visit. This is an expression of strengthening our states together."

This workshop is the second in a series this year. The first workshop included 20 border and military officials from Egypt, Jordan, and Yemen, and the third will involve officials from Pakistan and Afghanistan.

"One of the lessons we work to communicate is that technology alone doesn’t always solve everything in terms of border security issues," says Rugg Dunnigan (6721). "What is important is that well-trained people with environmentally appropriate technology can make border management more effective. This systems-based workshop also demonstrates the roles of border in national security and WMD nonproliferation.”

The workshop included demonstrations of border management systems models, border security techniques and technologies, and methods for conducting event analysis, approaches for cooperative monitoring and strategic planning. A tour of the Cooperative Monitoring Center and Training Demonstration Area was included. For some of the workshop, the Outdoor Theater facility may also be toured.

The workshop participants attended weapons and armored vehicle information presentations conducted by Sandia security and technology demonstrations at the National Training Center on the Arizona-Mexico border. "This demonstration shows the kinds of armaments and vehicles available for use in effective security patrols today," says Robert Johnson (4211).

When border operations allow, the workshops include technology demonstrations at the National Training Center on the Arizona-Mexico border. "It has been an eye-opener visiting this country and meeting your armed forces. Border security is not the primary role of our military, but ultimately matters of security are of concern to the armed forces. I want to express my sincere appreciation from our government to the US government and military for facilitating this visit. This is an expression of strengthening our states together."

"There is still the success of the park," Jackson says. "We are now in the third phase and we know it would take time to get where we wanted it.”

So far the pace has moved fast. What started in May 1998 as a big piece of land on the edge of Eubank Boulevard near Kirtland Air Force Base; now comprises 18 buildings totaling nearly 900,000 square feet of occupied space. More than 2,000 employees are employed here and 27 organizations located at this park.

The vision for the campus-like park began in the early 1990s when Dan Hartley, now-retired former vice president of development at Sandia, began discussing the idea of a tech park with various officials. Public landowners — including state and federal — were on board. Bill McCorkle, former N.M. State Rep., and Fred Mondragon, Cabinet Secretary for Economic Dev., State of N.M.

The park has had nearly $800 million in cumulative impact on taxable consumption (goods and services) and $40 million in cumulative impact on gross receipts tax revenue in New Mexico and $5 million in gross receipts tax revenue to Albuquerque.

J. Jackson says the average salary for full-time private sector jobs in the park is $67,542. The comparable figure for the Albuquerque metro area is $73,284.

Next 10 years and beyond

One of the next goals for the park is to have food service on the campus. “People want a place where they can get coffee.” Jackson says. Having food readily available on the campus will add to the ambiance of the park, she says. The park is also working to get a hotel built in an area due to the National Museum of Nuclear Science and History. The museum will be completed in 2009.

Entrainments to the fiber optic backbone will include security and surveillance additions, which will be the first comprehensive additions under the Eubank Boulevard, Kirtland Air Force Base, in the early 1990s when Dan Hartley, now-retired former vice president of development at Sandia, began discussing the idea of a tech park with various officials. Public landowners — including state and federal — were on board. Bill McCorkle, former N.M. State Rep., and Fred Mondragon, Cabinet Secretary for Economic Dev., State of N.M.

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## Mileposts

New Mexico photos by Michelle Fleming
California photos by Randy Wong

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## Recent Retirees

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Visit by Massie chairs bolsters Labs’ relationship with Historically Black Colleges and Universities

By Bill Murphy

A delegation of 10 engineering professors, nine from Historically Black Colleges and Universities (HBCUs) and one from a Hispanic Serving Institution (HSI), visited Sandia in mid-July to be briefed on the Labs’ mission, its work, and on research collaboration and student programs.

The 10 professors hold the Massie Chairs of Excellence at their respective schools. The Massie Chairs program was launched in the early years of the Clinton administration by just-appointed DOE Secretary Hazel O’Leary, who wanted to encourage more support to minority-focused education. Her goal was to ensure that students at these schools had the opportunity to participate in engineering and science that could lead to advanced degrees and professional employment. The program, which establishes endowed chairs at participating schools, is named in honor of Samuel P. Massie, a chemist of international reputation who, among his many career highlights, was the first African-American professor at the US Naval Academy.

Originally begun as a DOE Environmental Management initiative and now supported by NNSA, the Massie Chairs of Excellence program has evolved into a comprehensive STEM (science, technology, engineering) and research program across the nine HBCUs and one HSI.

During the visit, the Massie professors got briefings about Sandia’s work in a number of areas, including national security engineering, extreme environment testing, cybersecurity, and enabling predictive simulation. The visitors also heard about the Lockheed Martin/House of the Future Science Academy and the National Institute of Nano-Engineering.

“They liked what they saw,” says Nosa Ejebor, who holds the Massie Chair of Excellence at Tuskegee University, “I was amazed at the level of excellence and world-class capabilities. I also think it represents a one-of-a-kind repository of human scientific research talents and resources in the US, and the willingness of Sandia’s scientists to participate in collabora- tive efforts with other research insti- tutions across the country is com- promise-free. I was truly surprised and at the same time excited at the possibilities.”

“While this meeting is a great start,” Chang says, “well-planned workshops, face-to-face steps and efforts are needed to realize the benefits of collaboration between the scientists and researchers at Sandia and the Massie chairs.”

Sandia Senior Manager Anthony Thornton (1530) says the visit opened some eyes at the Labs to new collaborative possibilities. “We engaged in some very direct discussions with the various department [Massie] chairs,” Anthony says, “and there was agreement that the national laboratories in general typically target the MITs, Stanfords, and Caltechs of the world when seeking university collaborations. The chairs reminded us that if we took the time to peek back the first layer, that we could find pockets of world-class capabilities and research talent just down the hall to support our efforts. . . . I envision this visit will evolve into joint proposals, a collaborative research environment, and a pipeline of new talent into the laboratories.”

Shelдон Tieszen, right, discusses the capabilities of a flame channel at Sandia’s Thermal Test Complex with visiting professors from 10 Historically Black Colleges and Universities. At Tieszen’s right is Senior Manager Anthony Thornton (1530), who hosted the visit.

UHC on-site representative available for appointments

Are you enrolled in the UnitedHealthcare medical plan? If so and if you have a question about a claim or bill or need help locating a doctor, there are avenues to help get you the information you need. First step: Call the 800 number on the back of your UHC identification card. If you need additional help, call the UHC on-site representative. HBE Customer Service at http://hbe.sandia.gov or 505-844-HBES (4237) will put you in touch with Seng. Seng is available for appointments; her on-site hours are Monday-Thursday, 9 a.m.-3 p.m., at the New Mexico IPOC Building, 1611 Innovation Parkway SE, 3rd floor. Walk-ins are welcome, but appointments ensure that your time and travel to IPOC are well-spent. UHC members outside Albuquerque can request a phone appointment.

More UnitedHealthcare news . . .

Would you rather use the Internet than the telephone to ask a question or seek information? On myuhc.com, you can submit an inquiry to UnitedHealthcare. This tool can be accessed once you’ve registered on the myuhc.com website. Log in to the site, click on “Member/Assets/Pets/Consumer FAQs.” Don’t forget: You need to register on myuhc.com to access this feature.