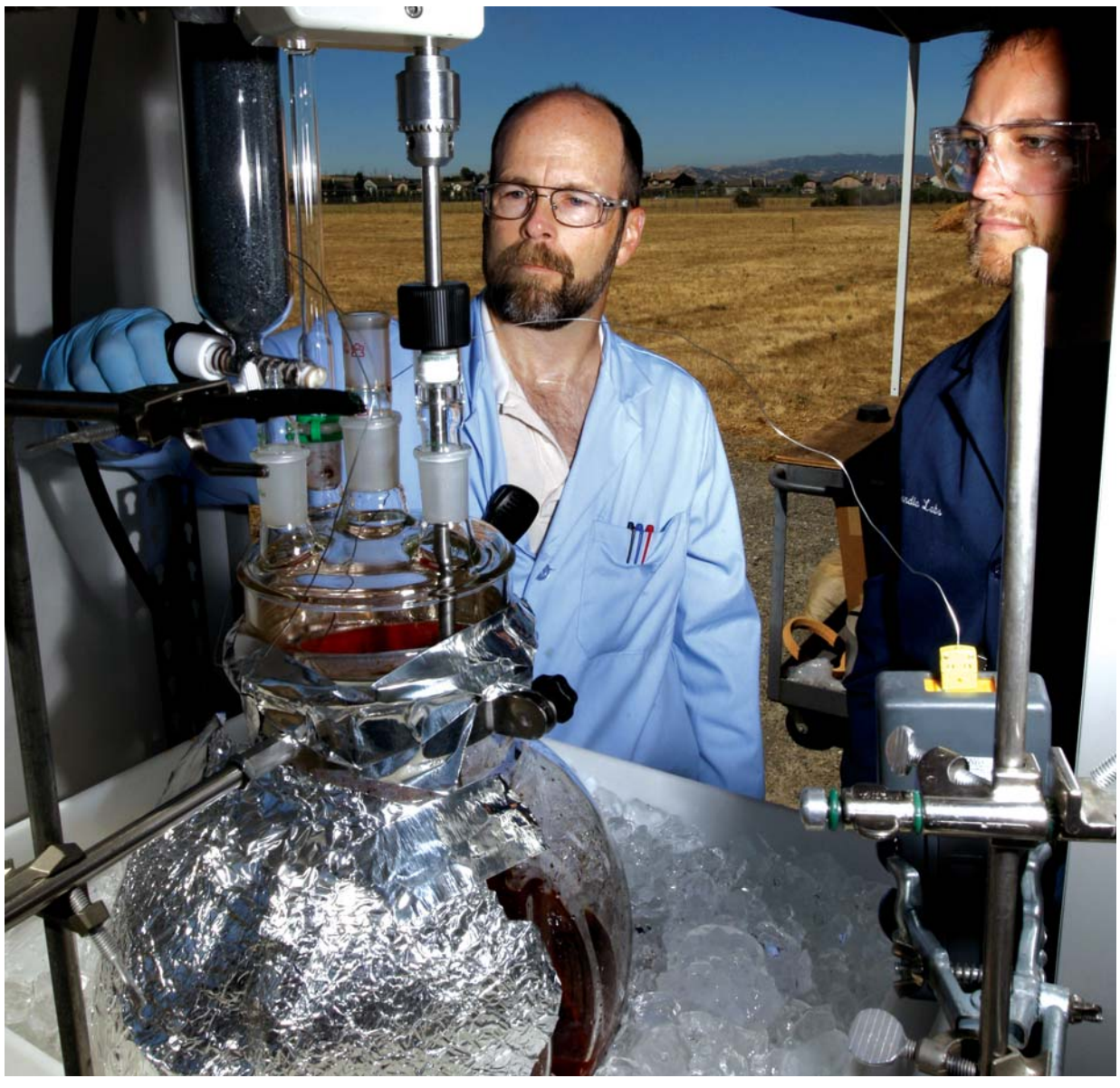
Sandia/USNORTHCOM project designed to help international law enforcement spot illicit drug labs

Tim Shepodd (8223) liked the moniker and agreed to call it the “chili cookoff.” But there was no chili involved,



By Mike Janes

Tim Shepodd (8223) liked the moniker and agreed to call it the “chili cookoff.” But there was no chili involved, and the only “cooking” had to do with the kind of chemicals not usually found on Sandia grounds.

The “chili cookoff” — a controlled airborne release of chemicals in support of a project funded by the United States Northern Command (USNORTHCOM) — took place June 29-July 2 on Sandia/California grounds (outside MANTL, the Micro and Nano Technologies Laboratory). USNORTHCOM was established in 2002 to provide command and control of DoD homeland defense efforts and to coordinate defense support of civil authorities. The agency routinely works with non-US law enforcement authorities.

Demanding experiment shows that Work Planning & Control process really works. See story on **page 5.**

For the experiment, Tim, a team of Sandia chemists, and other staff members essentially created a crystal methamphetamine laboratory to test a number of sensors that could be used by international law enforce-

(Continued on page 5)

STRANGE BREW — LeRoy Whinnery, left, and Greg O’Bryan mix up a batch of chemicals used to make crystal methamphetamine during field tests to determine the ability of various sensors — including airborne sensors — to detect an effluent signature or mix of chemicals that might suggest illegal drug manufacturing. The project was funded by US Northern Command (USNORTHCOM). (Photo by Randy Wong)

When tragedy strikes close to home

On the morning of July 12, a lone gunman walked into the Emcore Corp. facility at Sandia Science & Technology Park. Before the horrific morning was over, he had shot and killed two Emcore employees and wounded several others. Sandians who work in facilities near Emcore spent several hours that day sheltered in place. In a series of stories on **pages 6-7**, they share their thoughts and emotions and the acts of courage, kindness, and nurturing they observed.

Sandia LabNews

Vol. 62, No. 14 **July 30, 2010**

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Sandia National Laboratories

Inside

FaST program provides hands-on research opportunities for teachers and their students. See **page 12.**

President Harry S. Truman Fellowship in National Security Science and Engineering

Meet Sandia’s new Truman Fellows. Story on **page 8.**

Sandia co-submitter on fifth R&D 100 Award; is winner for improved superconducting wire

By Neal Singer

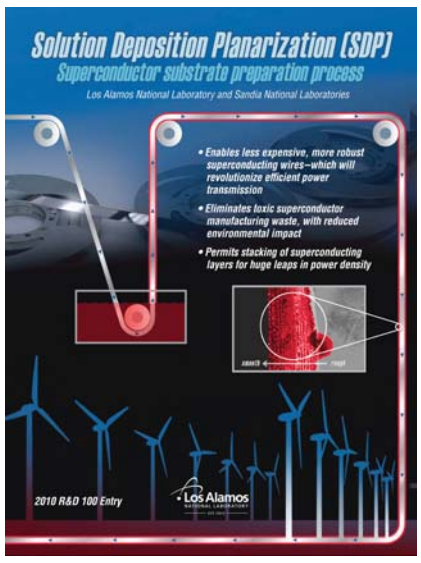
Short notice to press time led to an abbreviated mention in the July 16 *Lab News* of Sandia’s fifth R&D100 Award, a joint achievement of Sandia and Los Alamos National Laboratory (LANL) of an improved superconducting wire manufacturing process.

The advance seeks to reduce production costs of superconducting wire while supporting significantly higher power densities. To do this, the crystalline structure of the superconductor must be aligned over long distances.

Four other awards won by Sandia were described at some length .

For the fifth award, the Sandia team of Cynthia Edney (1816), Jon Ihlefeld (1816), and Paul Clem (1815) developed the chemistry, process conditions, and optimization of a reel-to-reel method of Ångstrom-scale planarization coating, while LANL developed a scale-up method and subsequent processes for the ion-beam-deposited template and superconductor layers.

The winning submission, submitted by LANL and titled “Solution Deposition Planarization,” was “a team effort that relied on both labs’ strengths: Sandia’s Materials and Process Sciences Center 1800 and LANL’s Superconducting Technologies Center Research Park,” Paul says.



The SDP process prepares atomically smooth superconducting substrates by dip-coating rough metal tapes in a liquid precursor mixture and then annealing the coating to reduce roughness. The planarized coating then enables kilometer-length deposition of ion-beam textured templates and biaxially oriented superconductor films at high speeds and low production cost. The SDP process eliminates toxic waste and three expensive processing steps to achieve high-performance superconducting wires.

Two industrial partners are said to be implementing production of the low-cost superconducting wire, expected to make more efficient and compact large industrial electric motors, lighter and smaller megawatt-scale wind turbines, and long-length DC energy transmission lines with nearly zero energy loss.

That's that

In the wake of the tragic Emcore shootings last week, one wants to say something. For those of us who weren't anywhere near the horrific scene, the events are an abstraction; we don't have that visceral sense of menace and fear and confusion that was experienced by those closer at hand. As such, our words, heartfelt though they may be, will always lack the full emotional weight that is called for. We can't really know what it was like unless we were there, can't know how we would react, how we would feel. Would we be brave? Would we be calm and focused? We would like to think so, hope so, but we can't *know*.

But many of our fellow Sandians, way more than I thought - some 1,000 in four buildings (the Innovation Parkway Office Center, the International Programs Building, the Center for Integrated Nanotechnologies, and the Computer Science Research Institute) — were close, too close, to the scene. Granted — and thankfully — the shooter never found his way to a Sandia facility. But our colleagues in the Sandia Science & Technology Park didn't know that. They knew only that people were being shot; there was even a rumor that the shooter had entered one of our buildings. As you can imagine, people's responses were all over the map: fear, anger, and frustration were common ones. What really stands out for me, though, are the stories of leadership and courage and comforting demonstrated by many men and women — our fellow workers, just everyday people — who looked straight into the eye of this horrible thing and steeled themselves to bear up, to do the right thing, to be there for their colleagues.

These people were close to the dark events of that day; *their* words mean something, more than anything I can offer here. My colleague Iris Aboytes — whose stories have a knack for getting to the human heart of things — talked to a number of Sandians about their experiences that awful Monday morning in July. She put together the results of those interviews, conducted by phone and email, into a series of stories that start on page 6.

* * *

Now, for some much happier news, mind if I talk sports for a minute? Did you see where Steve Alford, the Lobo men's basketball coach, has just signed a contract with the University of New Mexico that could keep him here through 2020? That's terrific news for Lobos basketball and for the community. Do you remember last winter and spring how the Lobos' successes on the court seemed to pull Albuquerque together. People who don't usually follow sports at all were talking about the team, picking up the paper and turning on their radios to get the latest news. Did they win last night? Did you see that shot by Darington? Will they get to the Sweet 16? That's something that sports can do — galvanize a community like nothing else — and you just can't put a price on it.

There will probably be some — including people I admire very much — who feel that college basketball coaches are paid too much. And there's no question that Coach Alford will be generously compensated; the more success he brings to the team, the more generous his compensation will be.

The inevitable discussions about coaches' and athletes' salaries always remind me of the story about Babe Ruth. In 1930, when The Babe was paid the then-princely sum of $80,000 a year, a reporter asked him if he felt he deserved to be paid more than President Hoover, whose annual salary was $75,000. "Why not?" The Babe replied. "I had a better year than he did."

* * *

Almost everybody at Sandia/New Mexico eventually finds their way to California for a vacation. And while there's always plenty to do there, may I suggest that you check out the Griffith Observatory in Los Angeles? Go up after dark — it's open until 10 p.m. — and enjoy a vista of LA like you've never seen. And oh, it's a great science museum in its own right, with a focus on astronomy and cosmology.

See you next time.

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

Sandia LabNews

Sandia National Laboratories

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Recent Patents

Note: Patents listed here include the names of active and retired Sandians only; former Sandians and non-Sandia inventors are not included. Following the listing for each patent is a patent number, which is searchable at the US Patent and Trademark Office website (www.uspto.gov).

* * *

Armin Doerry (5349), Freddie Heard (5345), J. Thomas Cordaro (Ret.): Decreasing Range Resolution of a SAR Image to Permit Correction of Motion Measurement Errors beyond the SAR Range Resolution. Patent No. 7,760,128

Conrad James (1714): Microfluidic Device for the Assembly and Transport of Microparticles. Patent No. 7,744,737

Jin Kim (1742), Malcolm Carroll (1725), Aaron Gin (1725), Michael Cich (1742): Strained-Layer Superlattice Focal Plane Array Having a Planar Structure. Patent No. 7,755,079

Ronald Manginell (1717), Murat Okandan (1749-2): Methods for Improved Preconcentrators. Patent No. 7,727,314

Ronald Wild (2614): Method for Forming Precision Clockplate with Pivot Pins. Patent No. 7,728,248

John Michalski (5621), Thomas Tarman (5634), Mark Torgerson (5635): Computer Network Control Plane Tampering Monitor. Patent No. 7,733,788

Timothy Boyle (1815): Water-Soluble Titanium Alkoxide Material. Patent No. 7,741,486

Jeffrey Carlson (6351), Michael Giles (5531), Denise Padilla (6384), David Novick (6473), Christopher Wilson (6473): Reduction of Background Clutter in Structured Lighting Systems. Patent No. 7,742,640

George Wang (1126), Qiming Li (1126), J. Randall Creighton (1126): Highly Aligned Vertical GaN Nanowires using Submonolayer Metal Catalysts. Patent No. 7,745,315

Mark Tucker (6375): Kit Systems for Granulated decontamination Formulations. Patent No. 7,750,199

Retiree Social 2010: New time, new location

Sandia's 2010 Retiree Social will be held this year at the Embassy Suites Hotel conference center Aug. 20, 12:30-3:30 p.m.

Retirees and their guests are invited to come and reminisce with old friends, have a good lunch, and catch up with each other.

Sandia Thunderbirds annual picnic

THUNDERBIRDS

Sandia Thunderbirds, Sandia's retiree club, will hold its annual picnic on Aug. 10 at noon at the Mountain View Club on Kirtland Air Force Base (the old Officer's Club). The cost is $5.50 per member or $10.50 non-member. Advance payment can be made by calling Adron Pritchard at 299-3543 by Aug. 6.

Note: This is not the annual Sandia-sponsored Retiree Social; for information about that event, see above.

Retiree Deaths

Hubert L. Cole (age 94) . . . . . May 4
Robert N. Schowers (82) . . . . . May 4
Walter John Dalby (83) . . . . . May 8
Robert Allen Milby (88) . . . . . May 9
Onofre G. Perea (91) . . . . . May 11
William A. Little (89) . . . . . May 13
Robert J. Lebow (81) . . . . . May 19
Ernest D. Apodaca (69) . . . . . May 21
James Carmody (75) . . . . . May 22
Jack E. Edwards (79) . . . . . May 22
John E. Lowery (84) . . . . . May 24
Leslie E. Maxey (78) . . . . . May 25
Gene M. Nielsen (87) . . . . . May 27
Erlinda D. Dow (84) . . . . . May 30
J. Loraine Aragon (73) . . . . . June 5
Ferne L. Graves (96) . . . . . June 5
Julian T. Chavez (91) . . . . . June 5
Antonio Garcia (85) . . . . . June 11
Doris A. Mason (76) . . . . . June 24
Richard G. Lopez (89) . . . . . June 25
Jennings Gail Hamilton (65) . . . . . June 26
Edna L. Pederson (74) . . . . . June 27
Raymond Troy West (85) . . . . . June 30
Francis S. MacDonald (82) . . . . . July 3
Sam N. Gaeto (86) . . . . . July 3
John P. Corley (64) . . . . . July 5
John T. Schamaun (75) . . . . . July 8

Explosive Destruction System completes major milestone at Pine Bluff Arsenal

Inventory of more than 1,200 recovered munitions included 450 German Traktor rockets

Patti Koning

In April, Sandia's Explosive Destruction System (EDS) was used in the completion of a major milestone at the US Army's Pine Bluff Arsenal in Arkansas — destroying the largest inventory of recovered chemical warfare materiel to date, more than 1,200 munitions that included 450 German Traktor rockets. With this milestone, the Army completed its mission to destroy all nonstockpile materiel declared when the United States entered into the 1993 Chemical Weapons Convention, an international treaty mandating the destruction of chemical warfare agents and munitions.

Sandia CaliforniaNews

"This goes far beyond the original purpose of EDS," says Brent Haroldsen (8123). "EDS was created to destroy small numbers of chemical munitions at the recovery site. But because it is robust and flexible, it was the right tool for this job."

Sandia designed EDS for the Army after construction workers in 1993 unearthed an explosively configured chemical munition in Spring Valley, an upscale neighborhood of Washington, D.C., that during World War I was a chemical weapons research site. The public location prevented the Army from destroying the munition by open detonation. An Army survey identified more than 100 possible sites for buried munitions across the country, indicating an even greater need for a safe and environmentally sound method to destroy munitions.

TESTING on this containment vessel showed that a stockpile of aged German Traktor rockets could be safely destroyed in the EDS.

(Continued on next page)

Congratulations, Tom, from your friends at Sandia/California

Tom Hunter, who retired as Sandia president and Labs director July 9, traveled to the California site July 7 to say goodbye to old friends and colleagues. Tom served as Div. 8000 VP and California lab director from 1995-1999 before returning to the New Mexico site as head of the Labs' nuclear weapons programs.

In the photo at top left, student interns check out a special commemorative poster for Tom that features the latest California site group photo. At upper right, Tom shares some parting thoughts and at lower right accepts best wishes from Ray Ng (3655). At lower left, Dave Nagel (8944) adds his signature to the poster presented to Tom.

(Photos by Randy Wong)

Pine Bluff

(Continued from preceding page)

'Basic high school chemistry'

The core of EDS is a leak-tight vessel in which munitions are placed. An explosive shaped charge opens the munition's metal shell, exposing the chemical agent and burster, a small explosive that disperses the agent. The burster explodes or deflagrates safely inside the EDS vessel. A reagent is then pumped into the chamber to neutralize the chemical agent. The chamber is heated and turned to mix the chemicals and facilitate the reaction.

"It's basic high school chemistry," says John Didlake (8136). "Heat and mix."

The entire process takes two days, as heating thousands of pounds of steel takes time. "EDS was never designed to be fast," says Brent. "Pine Bluff was a shift in perspective."

Army had planned to build a facility

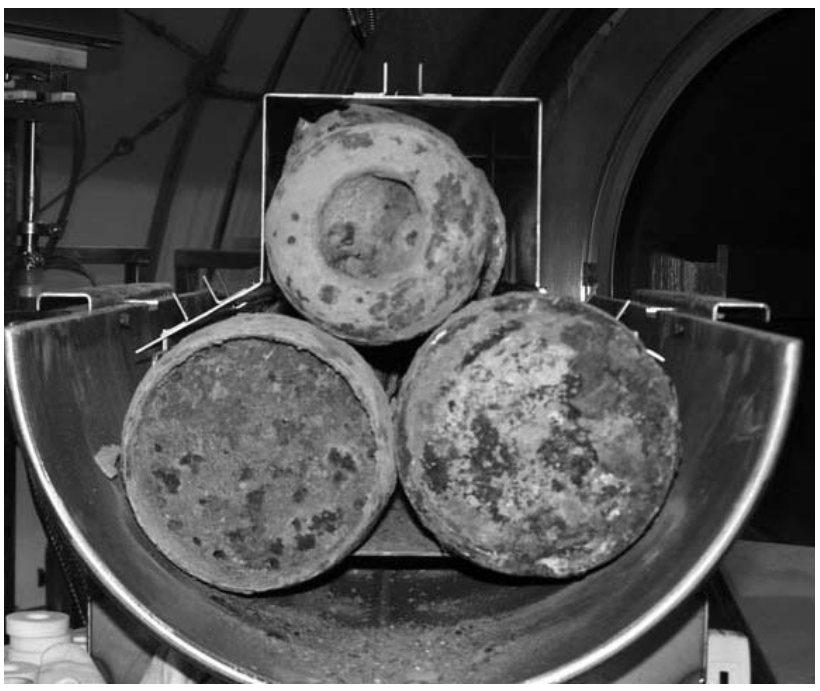
The Army originally planned to build a fixed facility to dispose of the Pine Bluff nonstockpile arsenal, but the plan ran into technical problems because of the varied condition of nonstockpile munitions. "With stockpile weapons, you are dealing with an arsenal that is mostly uniform. They've been stored in reasonable condition, and you know what is inside," says John. "Recovered munitions have been lying underground for 70 or 80 years, so they are in varying degrees of decay. Some munitions are encircled by tree roots, while others have been in the ocean and are covered with sea scum. Many of these munitions were experimental; however, each one is a special case and is not suited for a production-type facility."

After considering different options, the Army proposed using two large EDS systems running simultaneously with a smaller system in reserve. First, however, Sandia had to increase the throughput of EDS to meet the Army's requirement of destroying six rounds every two days. Originally, EDS was intended to treat one munition at a time, but with changes in the configuration of the shaped charges and fragment suppression system, the capacity was increased. Testing at the Defense Science and Technology Laboratory in Porton Down, England, in 2003 showed that the larger EDS could destroy three smaller munitions at once. Further explosive testing by the Explosive and Firing Systems group (5434) demonstrated that the larger EDS had the capacity for six munitions and the smaller EDS could handle three.

"Recovered munitions have been lying underground for 70 or 80 years, so they are in varying degrees of decay."

— Sandia researcher John Didlake

The biggest challenge at Pine Bluff was destroying approximately 450 German Traktor rockets containing a variety of different chemical agents that had been stored at the site for 60 or more years. Because they were foreign rounds, some of the chemical agents were different from what is found in US rounds. A particular challenge for the Army was developing a reagent for lewisite, an arsenic-based chemical agent.



GERMAN TRAKTOR ROCKETS awaiting destruction at the Pine Bluff Arsenal in Arkansas.

SANDIA'S EXPLOSIVE DESTRUCTION SYSTEM is designed to be transportable to remote locations to destroy aging munitions.

The German Traktor rockets at Pine Bluff were in poor condition and the contents were not well-characterized. In the 1950s, after the Army had finished research on the German Traktor Rockets, an unsuccessful attempt was made to destroy them using the traditional method — placing the munitions in a pit with jet fuel and lighting them on fire.

"German Traktor rockets have the propellant at the front and the warhead at the back, hence the name Traktor, because the propellant pulls rather than pushes," John explains. "Consequently they did not behave as expected. Rockets were ejected from the pit and scattered around the site."

Many were damaged and had to be placed in secondary containers. While the bursters on some of the munitions were destroyed, others still had complete or partial bursters, and in some cases the burster wells were filled with mud and debris, making it difficult to determine if there was a burster. "The amount of explosives determines the quantity of munitions that can be treated in each batch, so we were dealing with many different scenarios," Brent says.

A special challenge

About 50 German Traktor rockets still had propellant in the motors. These rockets, which were the last to be processed, presented a special challenge.

"The Army's original plan was to cut off the motors from the rockets and treat just the warheads in EDS," explains Brent. "But as the time to begin processing them drew near, the base commander became concerned that the propellant could be contaminated with the chemical agent. He insisted that the motors be processed with the warheads."

With both the propellant and the burster, those German Traktor rockets contained nearly 17 pounds of energetic material — more than three times the 4.8 pound approved rating of the EDS explosive containment vessel.

In September 2008, Sandia began an intense six-month program to demonstrate that EDS could safely destroy a German Traktor rocket with propellant. The first step was to demonstrate that a properly chosen shaped charge could open the rocket motor without causing the propellant to detonate. This was difficult because the propellant used in the German Traktor rockets is no longer available and the condition of the explosive after 60 years was not known. Sandia's explosives engineers used their understanding of the physics and chemistry of propellants to select a suitable surrogate for testing that would be more sensitive than the actual propellant.

The next step was to demonstrate that even if the propellant detonated, the vessel would still contain the detonation. In Albuquerque, researchers performed destructive tests on the original EDS vessel using 15 pounds of TNT, the equivalent of more than 45 pounds in the larger EDS. The vessel deformed substantially, as was expected, but the test allowed the researchers to quantify the failure mechanisms. The test results were supported with extensive computer modeling.

Containing the explosion

Next, they took one of the larger EDS vessels out of service at Pine Bluff and tested it with the equivalent of a German Traktor rocket with full propellant, 17 pounds, and an overtest with 21 pounds of explosive. "The Army was willing to accept that the vessel could be damaged and no longer usable as long as it contained the worst-case explosion," Brent says. "We demonstrated that the explosion would be contained and the EDS would be able to complete the operation. We also showed that the failure mechanism for the vessel is not catastrophic but a leak that would stay within the vapor containment structure. So there were three levels of defense."

At Pine Bluff, the second and third levels of defense were never employed, as the EDS destroyed the last 57 German Traktor rockets without a single one detonating.

"With large detonations, we were also concerned with protecting the vessel from high-velocity fragments," says Brent. The traditional EDS fragment suppression system of two large steel half cylinders placed around the munition would not be sufficient.

Fortunately, Sandia researchers already were developing an improved fragment suppression system. "For each type of weapon, you needed a different fragment suppression system, so it became logistically difficult," says Brent. "We were looking for something more universal."

Double layer of steel rods

They came up with a new design consisting of a staggered double layer of steel rods lining the vessel walls that block any line of sight to the vessel walls. The rods are easier to fabricate and handle, and reusable, unlike the half cylinders that can only be used once, resulting in a solid waste reduction of up to 80 percent. The new design also protected the vessel from much larger detonations.

The timing of the advanced fragment suppression system was fortuitous for Pine Bluff. Without it, Brent says EDS never could have handled the challenge of the German Traktor rockets with propellant in the motor.

Since completion of operations at Pine Bluff, the EDS has returned to its original mission of destroying small amounts of munitions at sites such as Camp Sibert in Alabama and Spring Valley in Washington, D.C. Sandia is now developing ways to speed up the EDS. One idea is to inject steam into the vessel to accelerate the heating process. Another tactic would use a MicroChemLab-based device to continuously monitor the liquid inside the vessel, rather than taking a sample at the end of the operation and sending it to a lab for analysis.

"We're not really sure what the future holds, as Pine Bluff was the last large repository of nonstockpile munitions," says Brent. "There are plenty of potential applications, like stockpile weapons with leakage issues or munitions sitting on the ocean floor in coastal waters. We don't know how EDS would tie into these problems, but its flexibility makes it an obvious choice."

New Performance Evaluation Plan marks maturation of Sandia/NNSA relationship

New PEP model reflects more trusting, transparent government/contractor relationship

By Renee Escamilla (10011)

When Sandia and the NNSA Sandia Site Office (SSO) signed a midyear Performance Evaluation Plan on June 25, it marked the culmination of extensive collaborative efforts among Sandia, SSO, and NNSA headquarters in Washington, D.C.

The new PEP will be effective through the fourth quarter of FY10 and is the basis upon which the FY11 PEP is being developed. The PEP represents the negotiated criteria against which NNSA appraises Sandia's performance of contract and programmatic requirements in the mission, operational, and business areas.

The transition to a new PEP is a goal that has been sought by Sandia and NNSA for several years. Executive VP and Deputy Labs Director for Mission Support Al Romig and Business Operations Div. 10000 VP and Chief Financial Officer Matt O'Brien have been corporate champions for the transition to a new PEP.

According to Matt, the new PEP model is inspired by the principles of governance and oversight reform, which are founded on the concepts of risk-based management and government oversight, contractor accountability, and a more trusting, transparent government/contractor relationship.

The structure, content, and scoring scheme of the new PEP reinforce a mission focus, Matt says, explaining that its organization is aligned with Sandia's program and policy areas to better enable transparency to the government of the overall management of the Labs.

The FY11 PEP will be constructed to reflect the new organizational structure that went into effect July 9 under Labs Director Paul Hommert.

"As we move forward with the new PEP, we must continue our diligence in self-assessing and measuring our own performance."

— Sandia CFO Matt O'Brien

The new PEP incorporates mission-focused performance objectives, which document the evaluation criteria of Sandia's programmatic work and account for three-fourths of the Labs' overall performance score. Also included are mission support performance objectives, which document the evaluation criteria of the critical operations and infrastructure that support the mission and account for one-fourth of Sandia's overall performance score. The new PEP continues to include performance-based incentives that encourage Sandia to achieve stretch goals, embark on new initiatives, and develop viable solutions in those areas where we need to improve.

Fundamental to the new PEP are the ideas of trust, transparency, and accountability, Matt says. Whereas previously the PEP model included detailed performance measures and targets prescribed by the government to assess the Labs' performance, the performance objectives in the new PEP are unconstrained by measures. The idea, says Matt, is to promote an "eyes-on/hands-off" approach to oversight and performance evaluation.

Under this philosophy, the government will now rely on Sandia to take the lead and apply its expertise to identify and apply the appropriate standards, measures, metrics, and evidence to ensure that the mission of the Labs is accomplished safely, securely, efficiently, and effectively.

NNSA will monitor Sandia's performance on a continuous basis, primarily through its use of Sandia's Integrated Laboratory Management System, Performance Assurance System, and other operational awareness activities.

"As we move forward with the new PEP," Matt says, "we must continue our diligence in self-assessing and measuring our own performance." That self-assessment will be accomplished by applying risk-based levels of rigor in identifying, acting on, and documenting successes, decisions, issues, and problem areas.

To provide the government with the necessary assurance of the Labs' effectiveness, Matt says, "It is important that we are inclusive with our NNSA counterparts and ensure the necessary transparency in demonstrating our effectiveness. They have committed to this new approach to oversight and we must ensure the visibility required to fulfill that approach.

"The new PEP embodies the hard work, diverse perspectives, and lessons learned by many throughout Sandia and NNSA. While it required considerable effort to come this far, it is the beginning, not the end, of the diligence needed to forge a continually improving relationship with our NNSA partners."

Helping international law enforcement

(Continued from page 1)

TIM SHEPODD, right, briefs Div. 8000 VP Rick Stulen, left, and Jim Costa (8950) on details of the "chili cookoff."

(Photo by Randy Wong)

ment agencies. USNORTHCOM officials stress that, due to domestic privacy laws, such surveillance activities are only conducted internationally.

The common industrial chemicals used in the experiment, Tim says, are those most often used for illicit drug manufacturing and are those that law enforcement typically finds in illegal drug labs. Sandia chemists LeRoy Whinnery and Greg O'Bryan (both 8223) prepared three "cooks" of chemicals made up of common chemical "recipes."

The objective, Tim says, was to successfully detect an effluent signature or mix of chemicals that might suggest illegal drug manufacturing. Eight sensors, including one used aboard an airborne platform, were used, with various wavelengths and sensitivities in play. The sensors were those typically used in government and industrial applications, including common pollution detectors, natural gas leak detectors, and sensors used by the Army during wartime.

Each piece of detection equipment used in the experiment was successful at detecting the chemicals, says Tim. Some of the sensors detected at a near-real time six-second refresh rate, while others — such as the airborne sensor — required post-processing.

The next step in the project, says Tim, will be to develop "ground truth" calibrations that will allow USNORTHCOM to better understand whether detection systems can be a long-term solution for shutting down illicit drug manufacturing outside the US. "Ground truth" data is collected on location, which is important since it relates image data to genuine features and materials on the ground.

"It's one thing to detect a cloud," as Tim puts it, "but quite another to detect 26 parts-per-million of species x." The collection of ground truth data enables calibration of remote-sensing data and aids in the interpretation and analysis of what is being sensed.

Once USNORTHCOM determines the ability of the detection system to be successfully deployed in a realistic situation, more Sandia experiments will likely occur. "We would then look at different chemical concentrations, different ingredients, and different recipes," says Tim.

"This was an important first step," he says. "It was definitely a success."

For risky experiments, the Work Planning & Control process really works

Pulling off an experiment that involves the creation of a crystal methamphetamine laboratory was no walk in the park, nor was it lacking in risks.

"We had to worry about air quality, for instance, since we would be releasing various chemicals into the air," says Tim Shepodd (8223). The Sandia team prepared by modeling a worst-case scenario under realistic meteorological conditions.

"Then there was the issue of water quality and having stuff seep into the ground, not to mention the safety issues surrounding the exposure of our scientists to [harmful] chemicals. There was also fire protection, explosives, security — just a lot of elements to concern ourselves with."

The USNORTHCOM project is an excellent example of what Sandia can do when it adheres to the highest standards of safety and environmental stewardship, Tim says.

"A project like this has the potential to spin out of control," he says. "But it didn't, because we paid close attention to detail and planned ahead."

Tim first approached Sandia/California's Interdisciplinary Team (IDT) in August 2008 and asked whether it was even possible to execute the project for USNORTHCOM. Tim followed Sandia's Work Planning & Control (WP&C) process to a "T." He says Ed Cull's ES&H group, facilities team, and security division (all 8510) were all vital partners in making the project a success.

"They were the ones who provided the sandbags, the fire hoses, the safety showers," says Tim. He says inviting that team of people to an early-morning safety briefing was a key decision that paid off, since it allowed everyone to think about safety from the get-go and ward off any trouble spots that loomed.

In addition to safety and equipment, the project's environmental elements were strongly considered.

The experiment site, Tim says, was essentially a brown field prior to the project's start. "We had a zero discharge policy for asphalt, and we reused the road for the 'cook pad,'" he says. The recent closure of the Bldg. 910 plating shop led to the reuse of a shed (used during the experiment to store the chemicals), while other materials and equipment were leveraged and saved from reclamation. Waste profiles were developed prior to the chemical "cook," with hazardous waste immediately disposed of and burned off site.

The key lesson learned? "Thorough preparation," Tim says. "The WP&C process really works."

— Mike Janes

Sandians share thoughts and emotions

When tragedy strikes close to home

On the morning of July 12, a lone gunman walked into the Emcore Corp. facility at Sandia Science & Technology Park. Before the horrific morning was over, he had shot and killed two Emcore employees and wounded four others. Sandians who work in facilities near Emcore spent several hours that day sheltered in place. In the stories on these pages, several Sandians share their thoughts and emotions and the acts of courage, kindness, and nurturing they observed.

Renee Wood (4218), who just happens to be a registered nurse, was acting team lead for the Badge Office and was standing at the front counter in the Badge Office at IPOC on Monday, July 12. At about 9:30 a.m., an employee informed her that there was someone shooting a gun outside near the Emcore building and that there were people running everywhere.

Renee immediately called 911. Seventeen employees from Emcore came running in after Jim Cook, also from the Badge Office, found them hiding outside behind IPOC.

"Jim was instrumental in safely securing our building," says Renee. "His presence was both commanding and reassuring. Some Emcore employees were crying. They told me there was a shooter in their building. They were terrified and very emotional.

"I am proud of how every employee responded."
— RENEE WOOD

"Three more employees who had been hiding in a dumpster followed them in. We had a total of 20 people coming in. We found out later two of those people were not Emcore employees, but deliverymen making deliveries to Emcore."

Renee and two other IPOC employees escorted the Emcore employees into a conference room. There, Renee administered first aid to a woman who was bleeding and also had a broken hand. She had been hit by broken glass when her officemate had been shot. Renee also stabilized a toe fracture on one of the employees who had been hiding in the dumpster.

As minutes turned into hours, several diabetic Emcore employees needed food. "Connie Vanderburg (4800) and I used our personal cell phones," says Renee. "Connie sent out a building email asking for food and drinks. The response was overwhelming. We got enough food to feed all the Emcore employees, plus police.

"It was kind of surreal," she says. "It is hard to remember the series of events. I know it was within minutes that police officers were in our lobby. Jake Trujillo (4218) and Jim Cook (4218) helped them secure the doors to our building.

"It wasn't until the following day that I learned that Jake had been at the credit union and heard the gunfire. His call to Jim helped us tremendously.

"There were initially only three of us in the Badge Office," Renee recalls, "but soon through word of mouth, we had more team members. Emcore employees were being calmed and talked to by several Sandians."

Police swarmed and surrounded the building. Police snipers were visible on the roof. The canine unit and SWAT team could be seen through doors. Helicopters were flying directly above the building.

"At one point, we were told that someone matching the description of the shooter was seen in our building," says Renee. "APD [the Albuquerque Police Department] acted quickly to ensure that this was not the case. It wasn't until some time later that we learned the shooter had killed himself."

The two injured Emcore employees were eventually escorted by police and taken by armored vehicle to an ambulance for further medical attention.

Most building residents knew what was going on during this period through their computers and radios. Before the Emcore employees were taken to the hospital, the woman who had seen her coworker shot heard that she had died.

"I guess it was at this point that reality hit me," says Renee. "I realized how horrible this was and knew it would be etched forever in my memory. I felt like crying, but knew that I needed to stay calm and in control of my emotions."

Emcore employees were evacuated to a waiting city bus at about 1:30 p.m. and left the building under police escort. IPOC was evacuated after 2 p.m.

"I am proud of how every employee responded," says Renee. "I am very grateful to the APD for their quick response. I think everyone's adrenalin was in high gear. I hope and pray that something like this never happens again.

It was unforgettable

Connie Vanderburg received a call from Sharon Martinez (4218) in the Badge Office on Monday, July 12, at about 9:30 a.m. Gunfire had been heard outside IPOC and guidance was needed from Lavone Jones, Center 4800's security representative.


CONNIE VANDERBURG

Connie found Lavone and proceed downstairs to meet with Renee Wood, acting team supervisor of the day. Together they crafted and sent a message to all IPOC occupants to shelter in place. Employees were stationed at exits to ensure occupant safety.

"By the time the team met, Emcore employees had already arrived and Renee had treated an Emcore employee who was injured with flying glass," says Connie.

While Lavone and Connie were doing a run-through of the first floor, several police officers arrived and were escorted to the front of the building. "I stayed with them most of the day to escort them wherever they needed to go in the building," says Connie.

"I sent out a message to all occupants with phone numbers to call if they were experiencing medical problems or needed assistance.

"We took our directions from APD officers throughout the day. With the police radios, we were able to hear in real-time, through their police radios, what was happening. We heard when they discovered that people had been killed, and even heard about the shooter killing himself."

At about 2:30 p.m., the lead SWAT team officer directed the occupants to evacuate the building. All occupants were advised to exit through the front door. "I believe the building was emptied out in a very orderly fashion by 2:50 p.m.," says Connie. "After checking all floors, we were able to leave.

"It was a very sobering experience that I hope I never have to witness again. I have the utmost respect for APD and what they did for us that day. Unforgettable!"

It was surreal

While Jake Trujillo (4218), who works at the Badge Office in the IPOC Building, was walking to the Sandia Laboratory Federal Credit Union on Eubank Boulevard Monday, July 12, he heard what he thought were four quick shots, then a pause, and then a bunch more. He looked down the street but saw and heard nothing, so he continued to the credit union.


JAKE TRUJILLO

On his way in, he saw two women from the day care center as they were getting ready to take some little children out for a walk. "I told one of the women that I had heard some shots and encouraged her to go inside," says Jake. "I did not want to alarm her, but I wanted them to be safe. At this point, I could hear sirens in the background.

"I entered the credit union and, while conducting my business, through the window I could see people running into other buildings."

As Jake was walking back he called his officemate Jim Cook and told him what was happening. "He told me to be careful and to take the long way back to be safe," says Jake. "By this time, I saw and heard lots of police and sirens. One officer was removing his shotgun from the trunk of his car. As I continued to IPOC, I stopped one of the Emcore people and asked him what had happened and he told me he just saw a man shoot a woman in the chest and saw another woman lying on the ground bleeding from the legs."

When Jake arrived back at IPOC, he learned that after receiving Jake's call, Jim went to the back of IPOC to see what was happening. There, he saw Emcore people running; he gathered them into the building. Renee Woods saw the people running to the front of IPOC and got them inside, too.

"Police arrived within minutes and we were immediately sheltered in place," says Jake. "I never felt nervous or scared. It was very surreal."

Stories by Iris Aboytes

FLAGS FLY AT HALF STAFF in remembrance of the victims of the tragic shootings that occurred at the Emcore facility on July 12. (Photo by Randy Montoya)

Emotionally not prepared

Manager Marcie Jordan (4031) was in a meeting in an inner office conference room. When notified of the emergency, her concern was for her employees, two of whom were on their way to a meeting and another who was out on her regular morning walk.


MARCIE JORDAN

"My employees who had gone to a meeting called me," says Marcie. "They were safe. My last employee had sought refuge at Applied Technologies when she heard shots. She was safe.

"Our building was surrounded by police officers. From our vantage point we could see snipers on the roof, police on horseback patrolling the parking lot, and other police officers looking inside and under cars. The police were carrying big guns. There were lots and lots of police officers."

In an effort to get her employees' minds away from the situation, Marcie conducted her ethics training. She and her team were evacuated with the other residents after 2 p.m.

"You never know what is going to happen," says Marcie. "We have emergency procedures in place, but we are not emotionally prepared. Emcore was a life-changing event."

Held hostage

"It was as though we were being held hostage," says Cheryl Garcia from Community Involvement Dept. 3652, which is located in IPOC. Her office is in the northwest corner of the building looking out toward Emcore.


CHERYL GARCIA

"It was like a scene out of a war movie," Cheryl says. "There were law enforcement officers with M4 rifles everywhere. We could see the snipers on the roof tops.

"Through the Tone Alert Radio, we were instructed to shelter in place and to stay away from the windows until further notice. Well, further notice lasted for seven hours. Some of us could not even take shelter at our desk, because we were too close to a window.

"We went online to see if we could find out what was happening, and were absolutely shocked to hear that six people were dead. That was later revised to two. This could not be happening. What is going on?"

It was their intern's first day and she thought it was some sort of drill.

"We tried to reassure her," says Cheryl. "She was understandably upset. Heck, we were all shaken. Our group decided to take matters into our own hands and we began to pray."

When the call for extra food and water came, Community Involvement donated a case of water and granola bars. They were told the food was needed for the Emcore employees who had sought refuge in their building.

"When we were evacuated, we did not run to our cars. We were kind of numb. When we walked out the door, law enforcement officials were everywhere. Military hummers were visible. It took a while to leave, as traffic was slow.

"It was very surreal. Had all this really happened? Thank God we were going home safe."

"You never know what is going to happen. We have emergency procedures in place, but we are not emotionally prepared. Emcore was a life-changing event."
— MARCIE JORDAN

Need to get to a phone

Two Sandia employees who work in the International Programs Building (IPB) had gone out for a morning walk down Eubank Boulevard. When they passed in front of Emcore, one of them heard what she thought were gunshots and asked her friend if she had heard them. She continued walking, but much faster and she looked back to see if her friend had also accelerated. Her friend responded she didn't think so, but while she was speaking, her friend heard a woman scream. They heard more shots and ran. When they got to the corner of Research Road and Eubank Boulevard, they saw Emcore employees running out of the building.

They went inside the Analytical Solutions building and told the receptionist to call 911, that they had heard shots and a woman screaming. The 911 responder told them to shelter in place.

From there, the women called the IPB front desk and building coordinator. They tried to reach their bosses, who, it happened, were not in their offices. They were able to contact them later.

The two were in shock. They were shaking as they stared at each other and occasionally teared up. "This was not happening," they thought. "We were out for a morning walk. We prayed for all the people who were directly involved.

"The employees at Analytical Solutions were wonderful to us, keeping us updated on the situation," say the women. "They allowed us unlimited access to the phone and Internet and offered drinks and snacks.

"An employee in Analytical Solutions had a police scanner on his cell phone and kept everyone abreast of what was happening; besides, they could see outside through the windows."

Police officers eventually came and took the women in an unmarked car to the nearby senior citizen center, where they were interviewed and taped separately.

"It was very surreal," the two wrote in an email. "We went to the scene the next day to just discuss what happened and to try to register just how close we were to the situation. We wanted to get back on the horse, so to speak. We have taken a walk since then. We didn't want to feel like this was going to control our lives, even though we still think about it and tear up."

"It was a very sobering experience that I hope I never have to witness again. I have the utmost respect for APD and what they did for us that day. Unforgettable!"
— CONNIE VANDERBURG


IN MEMORY — A roadside memorial placed in front of the Emcore sign on Eubank Blvd. (Photo by Randy Montoya)

Meet Carlee Ashley and William Chueh, Sandia's 2011 Truman Fellows

By Bill Murphy

President Harry S. Truman Fellowship
in National Security Science and Engineering

Researchers Carlee Ashley and William Chueh have been selected as Sandia's latest Truman Fellows. They join the ranks of 12 other fellows who have been appointed since the President Harry S. Truman Fellowship in National Security Science and Engineering was established in 2004. Because the fellowships are three-year assignments, six Truman fellows are currently doing research at Sandia.

"This year's Truman Fellow candidates were outstanding in all respects," says Div. 1000 VP and Sandia Chief Technology Officer Steve Rottler. "It was a very difficult decision to pare them down to the top two individuals. We look to Truman Fellows to become outstanding leaders in the research they pursue and, as such, they must display extraordinary abilities in scientific research and personal achievement. We are fortunate to have two strong Truman Fellows in Carlee Ashley and William Chueh.

CARLEE ASHLEY

"Carlee's work will provide Sandia with unique and cutting-edge expertise in biosciences and materials science. William's work will lead to an understanding and optimization of both thermochemical and electrochemical devices and could open new avenues in electrochemistry research. Both will be located at our California site, but will interact and collaborate broadly across Sandia. We look forward to seeing great results from their work during their three-year fellowship."

Both Fellows will work in Livermore

Carlee Ashley received her Bachelor of Science from the University of New Mexico in 2005 in biochemistry and molecular biology and received her doctorate in 2010, also from UNM, in the Department of Chemical and Nuclear Engineering. Carlee has already begun working in Biotechnology and Bioengineering Dept. 8621 and will officially begin her fellowship project in October 2010. Anup Singh is her manager, and Steve Branda is her Sandia mentor. Carlee has won many awards for her research and is principal researcher or contributor on three patents. She has coauthored a number of peer reviewed papers and is lead author on several manuscripts in progress. She has been lead presenter at many conferences and is a member of several professional associations.

William Chueh has spent his entire academic career at the California Institute of Technology, receiving a bachelor's in applied physics in 2005, a master's in materials science in 2007, and a doctorate, also in materials science, this year. In October, he will join Materials Physics Dept. 8656. Sarah Allendorf will be William's manager; Kevin McCarty will be his Sandia mentor and Anthony McDaniel (8367) will be co-mentor. William is the recipient of many awards for his research, he has been lead author on a number of refereed papers, and he has been a lead presenter at numerous conferences. William has applied for a patent under the title "Thermochemical Synthesis of Fuels for Storing Thermal Energy." He is a member of several professional associations.

WILLIAM CHUEH at the Solar Technology Laboratory, Paul Scherrer Institute, Switzerland.

Carlee titled her Truman Fellowship research proposal "In Vitro Construction of Highly Complex Random Peptide Libraries Displayed on Virus-Like Particles (VLPs) of MS2 Bacteriophage for Development of Vaccines Against Emerging Pathogens/Biowarfare Agents, Targeted Drug Delivery to Cancer, and Synthesis of Ultra-Bright Plasmonic Nanoparticles." In her research, she proposes to construct the peptide library entirely in vitro by compartmentalizing template DNA molecules and the reagents necessary for cell-free protein synthesis within the droplets of a water-in-oil emulsion.

Carlee's proposed work represents an extension of her research at UNM as a graduate student working in the laboratory of Sandia Fellow Jeff Brinker (1002), who also is a distinguished professor at UNM and head of the Brinker Nanostructures Research Group.

In her Truman Fellowship application, Carlee wrote that her work offers potential benefits to "positively impact the burgeoning collaboration among Sandia, the M.D. Anderson Cancer Center, and the National Cancer Institute-designated cancer research and treatment center at UNM." She noted that her proposed research also offers potential benefits to DOE's Basic Energy Sciences program and to work being conducted at the Center for Integrated Nanotechnologies (CINT).

William titled his Truman research proposal "Probing Surface Phenomena in Elevated-Temperature Energy Materials Under Realistic Conditions." In his application for the fellowship, he noted that "Chemical bonds are one of the most effective mediums for storing energy because of their high energy densities. However, despite the great potential of solar fuels, solar-to-chemical and chemical-to-electricity conversion efficiencies remain low and uncompetitive with those of conventional routes."

William also wrote that in his Sandia research he intends to study novel, elevated-temperature materials that can be employed for the efficient production of solar fuel from H_2O and CO_2 (via photo/electrochemical and thermochemical dissociation) and its subsequent conversion to electricity (via fuel cells). "As most chemical reactions are thermally activated, even a modest increase in the operating temperature can produce drastic effects on the rates and reduce or eliminate the use of precious elements," he wrote. "To realize the benefits of higher-temperature processes, I aim to advance the understanding of charge and mass transport at gas-solid interfaces using in-situ and operando techniques to probe the inner workings of state-of-the-art materials, and to use this knowledge to identify new materials that will boost energy conversion efficiencies."

* * *

Here are brief descriptions provided by Carlee and William of the work they hope to accomplish during their three-year fellowships at Sandia:

Carlee Ashley

Vaccines that induce a neutralizing, protective immune response are among the most successful public health interventions ever devised. However, the development of new vaccines is often a slow process, and the safety of vaccines composed of attenuated or inactivated forms of infectious viruses remains a major concern. Many viral structural proteins possess the intrinsic ability to spontaneously self-assemble into a virus-like particle (VLP) in the absence of the viral genome. Since VLPs are noninfectious, yet structurally similar to the virus from which they are derived, they are attractive candidates to replace current viral vaccines. Several VLP-based vaccines have been developed and licensed commercially, including Gardasil®, a human papillomavirus (HPV) vaccine that is expected to reap $3 billion in profits for Merck & Co. by 2012. VLPs, additionally, show great promise as platforms for the presentation of peptide epitopes derived from bacterial and viral antigens, as well as poorly immunogenic substances (for example, nicotine, as illustrated by Cytos Biotechnology's anti-smoking vaccine); peptide "mimotopes" become potently immunogenic when displayed as a dense, repetitive array on a VLP surface.

To this end, I will utilize Truman Fellowship funding to develop VLPs of MS2 bacteriophage as a display platform for complex, random peptide libraries, from which novel vaccine candidates can be selected by simply panning the library against antibodies that react with viral or bacterial pathogens. I will work with expert virologists at Sandia's California division to develop vaccines against Nipah virus, Rift Valley Fever virus, influenza A, Hepatitis A, and other viral pathogens of interest.

I will, additionally, construct VLP-based libraries entirely in vitro by compartmentalizing template DNA molecules and the reagents necessary for cell-free protein synthesis within the droplets of a water-in-oil emulsion. In vitro VLP display, when coupled with the microfluidics expertise at Sandia, will make library construction and biopanning amenable to automation. VLP display promises to be a remarkably powerful, universal technology that will enable rapid, cost-effective identification of vaccine candidates to effectively combat many current and emerging diseases.

William Chueh

In one hour, more energy from sunlight strikes the Earth than the amount consumed by the entire planet in one year. However, tapping into this vast resource does not come without challenges. The intermittent and geographically varying nature of solar radiation means that storage and delivery of solar-derived energy are critical steps required for mass utilization. Chemical bonds are one of the most effective mediums for storing energy because of their high energy densities. However, despite the great potential of solar fuels, solar-to-chemical, and chemical-to-electricity conversion efficiencies remain low and uncompetitive with those of conventional routes.

At Sandia, I hope to contribute to making solar fuel a reality by understanding the fundamental chemistry and physics at the interface where reactants and the catalysts meet. Specifically, recent innovations in characterizations techniques at both Sandia and Lawrence Berkeley national labs will allow me to investigate physiochemical processes at catalyst surfaces while the reactions are progressing. The ability to visualize the chemical and physical state of the catalyst while reactions are occurring will provided an unprecedented level of understanding into how they work and, potentially, guide designs of better and lower-cost materials.

The unique combination of generous funding, research independence, access to world-class facilities, and expert mentorship under the support of Truman Fellowship makes Sandia the place to launch my scientific career.

The Truman Fellowship in National Security Science and Engineering

The Truman Fellowships are three-year appointments. Candidates are expected to have solved a major scientific or engineering problem in their thesis work or have provided a new approach or insight to a major problem, as evidenced by a recognized impact in their field. The program fosters creativity and stimulates exploration of forefront science and technology and high-risk, potentially high-value R&D. A panel of eight senior scientists and engineers reviews and ranks each application and interviews finalists.

This year's panelists were Pat V. Brady, chairman (6730), Mel Baer (1500), Bob Benner (1422), David Chandler (8350), Ed Cole (1726), Dick Damerow (2730), Barbara Funkhouser (5530) and Tan Thai (5630). Sandia's University Research Office (1912) and Human Resources (3555) teamed more than six years ago to create the Truman Fellowship Program and develop the processes necessary to implement the prestigious position.

Previous Truman Fellowship recipients: Youssef Marzouk, Gregory Nielson, Ilke Arslan, David Scrymgeour, Jacques Loui, Whitney Colella, Anatole von Lilienfeld, Darin Desilets, Bryan Kaehr, Patrick Hopkins, Anne Ruffing and Chris Weinberger.

TAKECHARGE→ Take Charge Corner

Completing your biometric screening now even easier

Note: *This information is provided by Sandia's Benefits organization. Previous Take Charge Corner articles have addressed other aspects of Sandia Total Health.*

Sandia's HBE Preventive Health Services Dept. 3330 in New Mexico has incorporated two new ways to complete biometric screenings. As of July 6, New Mexico employees may simply walk in to the Albuquerque onsite clinic without an appointment to get a biometric screening. Additionally, employees now have the choice between getting a fasting or nonfasting screening.

What is a biometric screening?

A biometric screening is a brief health exam that measures a person's risk level for certain diseases and medical conditions. The biometric screening works in conjunction with the health assessment; together, they provide each employee with a fairly accurate snapshot of current health and risk factors.

The biometric screening measures:

- abdominal circumference
- blood pressure
- weight
- height

and typically includes a fasting blood draw to measure:

- fasting glucose
- triglyceride
- total cholesterol
- high-density lipoprotein (HDL)
- low-density lipoprotein (LDL)

All employees and preMedicare retirees enrolled in Sandia Total Health must complete a biometric screening and health assessment before Nov. 30 to ensure their Health Reimbursement Account (HRA) is fully funded Jan. 1. More information about the HRA can be found at sandiatakecharge.com.

Appointment or no appointment

HBE Preventive Health Services gives employees three different ways to get a biometric screening. You can:

- Schedule a personal biometric screening with one of our clinicians
- Attend one of our walk-in screenings when our travelling team comes to your building
- Walk in to our clinic in the Health Services building (831) and request a screening
- Walk-in service available Monday through Friday, 7 a.m.-1 p.m.

For more information, including the complete screening schedule, search "biometric screening" at hbe.sandia.gov.

Fasting or nonfasting

We understand that it can sometimes be difficult to fast for 12 hours prior to your biometric screening. That is why the Albuquerque clinic now offers fasting and nonfasting screenings.

IMPORTANT: If you routinely take prescribed medicine, you should still take it before your test.

Fasting — cholesterol and glucose screening

Choose the fasting biometrics screening if you have a history of taking cholesterol-lowering medication, have had an elevated cholesterol screening in the past, have heart disease, diabetes, or are at risk for diabetes. This screening will check LDL, HDL, total cholesterol, triglycerides, and fasting glucose.

Nonfasting — cholesterol screening

Choose the nonfasting biometrics screening if you do not have a history of high cholesterol or low HDL (good) cholesterol. This screening will check your HDL and total cholesterol, and is a good baseline indicator of your current cardiovascular risk. If this screening indicates increased risk, we recommend that you repeat testing via a fasting lipid profile.

More information

For more information about biometric screenings, health assessments, or Health Reimbursement Accounts, please visit www.SandiaTakeCharge.com.

Livermore employees

Livermore employees may schedule a biometric screening at a convenient time at the Life Design Center/MO32, Tuesdays and Thursdays, 7:30-9:30 a.m. Call (925) 294-3500 to schedule an appointment. Livermore's travelling team of Preventive Services specialists also performs biometric screenings at different on-site buildings. Go to hbe.sandia.gov and search for "biometric screening" to review their complete screening schedule.

PreMedicare retirees

Refer to the letter sent on July 1 for a schedule of biometric screenings available at no charge to all pre-Medicare retirees. Screenings are being held around Albuquerque and at Medical Bldg. 925 in Livermore. Copies of the letter may be found on SandiaTakeCharge.com >> PreMedicare Retiree Benefits.

If you are unable to attend one of those sessions, schedule an appointment with your primary care physician to get your biometric screening. Don't forget to take the biometric screening form with you for your doctor to complete. Biometric screening forms may be printed from sandiatakecharge.com >> PreMedicare Retiree Benefits.

Once complete, your physician should fax the biometric screening form to HBE at (505) 845-8190, or mail it to:

Sandia HBE
Mail Stop 1015
Biometric Test Result
PO Box 5800
Albuquerque, NM 87185-1015

Once Sandia has received your completed biometric screening information from your PCP, Sandia will flag your account to indicate you have completed the biometric screening. You must also complete your health assessment through your medical plan's website to receive your $250 contribution from Sandia.

Sandian Gabriela Galaviz selected NNSA Defense Program's Employee of the Quarter

By Iris Aboytes

Sandian Gabriela Galaviz (2951) was recently selected as the NNSA Defense Program's Employee of the Quarter for Sandia National Laboratories. Gabriela is the Sandia B61 flight test engineer.

Her selection highlights her work in successfully planning and conducting three flight tests as part of NNSA's stockpile evaluation program. She negotiated detailed test requirements with multiple organizations to ensure aircraft delivery conditions met test objectives.

"I am delighted and honored to have been selected for this award," says Gabriela. "This recognition was only possible because of the support from my colleagues in organizations. 2950, 2111, 1515, 2915, 1534, 8133, 421, Kansas City Plant, Pantex, Los Alamos [National Laboratory], and NNSA. I thank the managers for nominating me in acknowledgement of all our hard work and for giving me the opportunity to succeed. This award is a significant highlight in my career and encourages me to keep challenging myself to excel."

When a late-breaking decision by the US Air Force required changes to previously approved test conditions, Gabriela coordinated a new Range Safety Footprint analysis and provided timely up-to-date information to the test range.

"I'm excited that Gaby has been recognized for her efforts in leading a cross-organizational team that culminated in the successful completion of three flight tests and the collection of associated data to be used as part of the weapon performance assessment," says her manager, Bernard Gomez (2951).

Gabriela coordinated numerous flight-line activities that included receipt of the Joint Test Assemblies, preflight temperature conditioning, flawless aircraft load, and PAL unlock. The data from these flight tests directly support the annual stockpile assessment process for Sandia and Los Alamos National Laboratory.

GABRIELA receives an informal tour of the F-16 from a Nellis Air Force Base pilot the day before the test series.

Mileposts

New Mexico photos by Michelle Fleming


Mary Akins
30 2114


Lorraine Baca
30 5533


David Clauss
30 223


Clarence Filip
30 853


Paul Veers
30 6362


Donald Waye
30 547

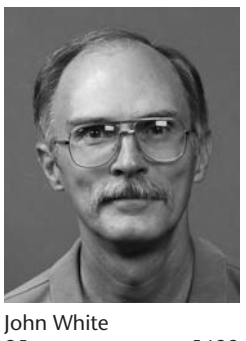

Thomas Zipperian
30 1740


Karen Current
25 2737


Bradley Nation
25 5633


Richard Pike
25 2958


Art Salazar
25 10641


John White
25 5422


Bruce Berry
20 6754


Kenneth Eras
20 2626


John Hoffman
20 2917


Jeffrey Kalb
20 2664

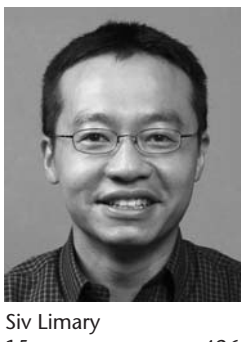

Ajoy Moonka
20 2910


Douglas Nordquist
20 10620


Beverly Ortiz
20 9342


Loren Riblett
20 5932


Kimberly Haulenbeek
15 5434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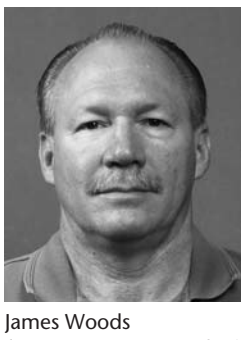
James Woods
15 5356

About Sandia's Feedback program

Sandia's Feedback Program, established in 1973, is designed to facilitate both upward and downward communication at the Labs. The program enables employees to question policies or procedures and point out areas of discontent and frustration. Feedback allows management to answer difficult and sensitive questions, learn what employees want or need, obtain suggestions for making improvements, and determine if policies and procedures need changing. The submitter's identity remains confidential, known only by the Feedback program administrator unless the submitter specifically asks to be identified with the question

To submit a Feedback question: On the Techweb homepage, click on the Feedback link in the Around Sandia section and then Submit a Question. Complete and submit the electronic form. Questions can also be submitted via fax, by email directly to the administrator, or through internal mail. Unless otherwise requested, submitters' names will be kept confidential, known only by the Feedback administrator. Remember, if you do not include your name with your submission, there will be no response, which is otherwise guaranteed. Anonymous submissions will be forwarded to the appropriate director for their information only.

Feedback

Readers have questions about details of new PeopleSoft implementation

Q: *I've tried to submit an application to a job posting twice and when I click on submit, it will say that the application has been submitted and I receive an auto-generated email. However, if I go into My Career Tools, no applications appear and the hiring manager has not received the application. Also, if I try to save a draft job application, nothing shows up in My Career Tools. Please advise.*

A: We are sorry for this inconvenience. There is a data issue that is creating this problem. The action is not persistent to all employees; in other words it does not affect all employees the same way. The Human Resources Information Systems programming team is quickly working to resolve this issue. Please continue to submit your application and if you have similar issues contact the CCHD hotline. This action creates a ticket for the HRIS team to resolve and look at your case specifically. If it is a unique issue associated with your data or your system, the direct one-on-one contact will aid in its resolution. *— Jessica Pascual, 3510*

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Q: *I used to get postings for OAA and ASA job openings, but am no longer receiving them. Can you let me know how I can receive the postings under the new system?*

A: Employees who used the job agent function in PeopleSoft 8.9 must reinitialize the job agent function in PeopleSoft 9.0. Use the HR Self Service function and go to Careers and then Job Search to complete this action. Once you set up the job search function, you will again be notified of the OAA and ASA job postings. If you have trouble, contact CCHD for assistance. *— Jessica Pascual, 3510*

* * *

Q: *Is there any way to know how long job postings will stay open with the new PeopleSoft system? Postings used to list a closing date, but I don't see that now.*

. . . and

Q: *Why do the jobs postings on the external website not include the job closing date? Am I missing it somehow?*

A: The posting close date has been eliminated from job postings. This was done after benchmarking to external companies who follow the same practice. The Lab policy states a minimum posting period that will be enforced and managed by Staffing. Due to the change, interested job candidates should take action quickly to express interest in posted jobs. — Jessica Pascual, 3510

* * *

Q: *Is there a way to tell that my timecard has been approved? When approving timecards, it appears that checking "select all" causes all future timecards that were submitted to be approved. Is that correct? If so, I assume that will require a corrected time card should future cards be partially completed.*

A: You can tell your timesheet has been approved if you go into your timesheet through HR Self Service, Time Reporting, Timesheet, and click on the week you want to review. At the bottom of the timesheet it has a reported time status as to whether the manager approved the time or not. In response to the other part of the question, if the manager goes into the individual timesheet and approves the time, it will only approve for that one week that the manager approves. If the manager approves without going into the timesheet, which is another option, it will approve all time, including future dated timesheets. If this occurred with you, then you will need to submit a corrected timesheet with the hours correctly identified. Only current week timesheet information flows to project accounting. If you have additional questions or concerns, contact the payroll helpline at 844-2848. *— Donna Kao, 10502*

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Q: *Prior to PeopleSoft 9.0, I could go to my HR page and see where I was in relation to other Sandians in longevity, for example, No. 1,330 out of 8,500. Now I cannot find that listing. Where was this information moved to?*

A: This information still exists. From the Techweb homepage, click on the "My Page" tab at the top of the page, then click "My HR Information" under About Me Quick Links. Once on the "My HR Information" page, the Sandia service ranking is part way down the page on the right side. *— Jessica Pascual, 3510*

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Q: *Will my accrued flextime be carried over to the new system?*

A: Accrued flextime will be carried over to the new system. Additionally, flextime will still be subject to the 80-hour carryover limit. Per Corporate Procedure HR100.5.10 "Compensate Employees for Time Outside Regular Work Schedule," a maximum of 80 hours is allowed to be carried over to the subsequent fiscal year.

— Jessica Pascual, 3510

Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads Sandia Classified Ads

MISCELLANEOUS

TABLE, 4 chairs, steel, glass, great condition, $300; micro fiber tan couch, $400. Chavez, 328-6425.

TIMESHARE, week in Santa Fe, Sept. 11-18, 1-bdr., sleeps 4, heart of downtown Plaza, $550 OBO. Hodges, 238-9684.

VACUUM, Kirby Tradition, used, w/attachments & bags, needs tune up, $175; Sherwood stereo receiver, <1 yr. old, w/remote, $60. Hennessey, 915-241-8634.

CAMERAS: Nikon N80 & D100, 28-80, 70-300 & 80-400VR lenses, extra battery, charger, 5GB memory, covers, $2,500. Bonaparte, 505-980-7300.

TRUCK BED TOPPER, silver, 7-ft., good condition, $200; bed liner, 7-ft., drop-in, black plastic, excellent condition, $100; both from Ford F-150. Maestas, 304-6635.

SEWING MACHINE, Singer, good working order, not latest model, you pick up, free. Joseph, 822-0536.

ROUTER, table, accessories, $110; 20-lb. propane tank, $20; 6 & 12-V battery charger, $60; jig saw, $10. Landa, 505-400-9480.

WiFi INTERNET MONITOR, news, sports, weather, music, videos, games, Facebook, go to www.chumby.com for details, $65. Hale, 298-1545.

LOFT BED, twin, w/desk, black metal frame, like new, $400; white-washed coffee table, $25; kid's 5-drawer white dresser, $30. Miner, 480-4470.

DOUBLE RECLINING COUCH & matching reclining chair, maroon, leather, $50. Campbell, 856-9195.

ELLIPTICAL MACHINE, NordicTrack Audio strider 800, $450; Kenmore upright freezer, 13.7-cu. ft., $225. Millard, 205-6090.

STUDENT VIOLIN, size 4/4 full, complete w/case & bow, copy of Antonio Stradivari, excellent condition, $400. Buteau, 553-5226.

MULTI-FAMILY YARD SALE, 615 Ridgecrest SE, Albuquerque, July 30 & 31. Prior, 977-9008.

QUALITY HARDWOOD PELLET CO-OP, 2nd year, will be ordering August/September, ~$220/ton. Mickelsen, 717-1449.

DIAMOND RING, Tiffany, certified, 1.05 carat, round, brilliant, $7,000 OBO. Carter, 463-5077.

HOME GYM, ParaBody, excellent condition, retails $1,100, asking $500. Graham, 505-275-2083.

LOGITECH QUICKCAM, $20; Linksys cable modem CM100, used 1 mo., $45; P90X original workout DVDs, $50. Garza, 505-503-6040.

REFRIGERATOR, side-by-side, KitchenAid Supra, water/ice dispenser, white, 12 yrs. old, works great, replaced due to kitchen upgrade, $450 OBO. Trujillo, 293-8568.

CRIB, w/matching changing table, dark hardwood, w/mattress (good condition), $80/set. Jarek, 821-9589.

CHILD'S ACTIVITY TABLE, 3' x 6', $50; 2 high-back stools, $25. Huppertz, 286-3287.

COLLAPSIBLE BED FRAME, w/air mattress, Ozark Trail, queen, $30. Nelson, 856-5505.

SHOE STORAGE UNIT, IKEA BISSA model, 2 drawers, new-in-box, assembly required, $50 firm. Turner, 823-9506.

COUNTRY KITCHEN DINING SET, rooster theme, table, w/6 chairs, hutch, side board, photos available, $1,100 OBO. Vigil, 400-0639.

IRRIGATION CONTROLLER, Rain Bird RC-4Bi, $30. Monson, 298-1924.

FOOTBALL TICKETS, Houston Texans @ Arizona Cardinals, Sat. Aug. 14, 5 p.m., 2 pair + parking, $30/pair. Lifke, 822-8741.

MORGAN BUILDING, 12' x 17', insulated, outlets, pegboard walls, $3,495 OBO. Ross, 505-506-1711.

WATER LILIES, pink, hardy, $10. Emms, 892-9258, ask for Pat.

DINING TABLE, 42" x 60", solid maple, ends drop for storage, 4 chairs, 2 Captain's chairs, $150, Woodard, 263-6141, ask for Joyce.

iPOD TOUCH, 8GB, brand new, in sealed box, $175. Doser, 314-6811.

US OPEN TENNIS TICKETS, 2, women's quarter finals, Sept. 7, 11 a.m. (session 17), Billie Jean King National Tennis Center, Ashe Stadium, $72 ea. Baldonado, 850-9850.

PATIO SET, glass table, 4 chairs, used 1 mo. then moved, photos available, $200. Wickham, 898-7601.

FOOTBALL TICKETS, 2, AZ vs. Redskins, Sept. 2, 50 yard line, $100 ea. Chavez, 250-4477.

SIDI MEGA CYCLING SHOES, size 43M (wide), worn <4 hrs., $100; electric guitar copy, Samick Fender Stratocaster, natural wood-grain finish, $100. Gallagher, 265-0299.

CHILDREN'S EASY-TO-READ CLASSICS, paperback, set of 24, $2; 1982 22-volume World Book w/11-year books, free. Newcom, 293-5180.

CHILD'S DESK, chair, chest-of-drawers, Ranch oak, $250. Hartwigsen, 459-1540.

YARD UMBRELLA, free-standing, adjustable, $60 OBO; smaller wood dining table, 3 chairs & bench, $399. Steiner, 401-8114.

AMP, Line6 SpiderIII 150HD, $250; Pod XTLive, $225; Ibanez hollow-body guitar, $300; all like new, OBO. Quinby, 480-5294.

MULTI-FAMILY GARAGE SALE, 8/6 & 8/7, Wyoming/Montgomery, entertainment center, sewing cabinet, jogging stroller, rubber stamps. Portlock, 299-3240.

MEDIA STORAGE CABINETS, $40 ea.; coffee table, glass, oak, $40; misc. speakers, computer desk, oak, $30; call for size, photos. Ghanbari, 883-3819.

CAMERA, Pentax ZX-10 SLR, autofocus, w/35-80mm zoom & Sigma 100-300mm zoom, $250 OBO. Dinger, 823-9612.

FLUTE, Armstrong 104, silver plated, $250; clarinet, Vito Reso Tone 3, $150. Ashby, 281-1573.

POOL TABLE, Brunswick, 8' x 4', slate top, $500; General-Vacubase electric meat slicer, $50; racing bike, $950. Gomez, 291-1062.

CRIB MATTRESS, Simmons Kid's, like new, $40; 10-gal. reptile tank, w/heat pad, light, $10. Hobart, 255-7749.

COMPUTER HARDWARE, mostly new, network, hard drives, power supplies, graphics card, case, more, will email list. Cocain, 281-2282.

BOW FLEX, $200; Kettler elliptical, used several times, paid $1,350, asking $450. Stockham, 449-7248.

AQUARIUM, 55-gal., storage stand, w/T5 lighting, $199, $249 w/many extras. Demosthenous, 331-6783, ask for Byron.

ADJUSTABLE QUEEN BED, pillow-top mattress, box spring, great condition, $300; twin frame, box spring, $50. Lauben, 980-2915.

TRANSPORTATION

'95 CORVETTE CONVERTIBLE, red, has the works, looks beautiful, drives like new, AT, nonsmoker, tuned up, low mileage, $13,000 OBO. Arana, 228-4134, ask for Chris.

'87 TOYOTA CAMRY, 5-spd. manual, 130K miles, very good condition, $1,500. Othling, 238-9510.

How to submit classified ads

DEADLINE: Friday noon before week of publication unless changed by holiday. Submit by one of these methods:

- **EMAIL: Michelle Fleming (classads@sandia.gov)**
- **FAX: 844-0645**
- **MAIL: MS 0165 (Dept. 3651)**
- **DELIVER: Bldg. 811 Lobby**
- **INTERNAL WEB: On internal web homepage, click on News Center, then on *Lab News* link, and then on the very top of *Lab News* homepage "Submit a Classified Ad." If you have questions, call Michelle at 844-4902. Because of space constraints, ads will be printed on a first-come basis.**

Ad rules

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

'05 INFINITY G35, 4-dr., V6, AT, GPS, 6-CD, fully loaded, slate blue, 52K miles, excellent condition, $12,000. Hernandez, 980-4028.

'07 TOYOTA FJ CRUISER, 4x4, 6-spd., ARB bumper, Warn winch, many other extras, 88K miles, $23,000 OBO. Dow, 217-4395.

'07 HONDA PILOT LX, 5-dr., 2WD, fully loaded, 1 owner, excellent condition, $20,000 OBO. Martin, 980-0456 or 248-1212.

'65 MUSTANG, 2-dr., hard top, 289 V8, AT, excellent inside & out, great driver, $7,500 OBO. Sturgeon, 505-975-6565.

'02 HONDA ACCORD EX, 4-dr., 4-cyl., 1 owner, 96.5K miles, excellent condition, NADA retail $8,100, asking $7,000 OBO. Aronson, 898-8893.

'01 DODGE STRATUS STS, 4-dr. sedan, 6-cyl., good school car, $4,500. Wright, 299-6443 or 350-7802.

'99 CADILLAC DEVILLE, champagne, looks great, runs great, 131K miles, $5,500. Brown, 291-3368.

'94 CHEVY SUBURBAN, 2WD, PW, PL, PS, 5.7L engine, 121K miles, very good condition, $2,950 negotiable. Baney, 294-8970.

'03 JEEP LIBERTY SPORT, 4WD, AT, 3.7L, V6, PW, PL, keyless entry, roof rack, tinted windows, new tires, 68K miles, excellent condition, $9,800 OBO. Yates, 505-550-0371.

'06 TOYOTA TACOMA, double cab, 4x4, AM/FM/multi-CD, new tires, tow pkg., bed liner, 72K miles, excellent condition, $21,500. Babb, 898-4379.

'04 FORD RANGER XLT, super cab, 4-dr., loaded, 1 owner, Tonneau, 44K miles, immaculate condition, $10,900 OBO. Moulton, 217-6106.

'06 DODGE RAM, Megacab, Hemi, 4x4, SLT+, tow, sun/rear PW, 46K miles, excellent condition, KBB $27,000, asking $23,000. King, 792-9619.

'04 CHEVY SILVERADO Z71, 4-dr., 4WD, leather, Bose XM radio/CD, OnStar, alloy wheels, loaded, 33K miles, excellent condition, $19,500. Dwyer, 271-0741.

'05 CHRYSLER 300, V8, ~90,847 miles; '05 Nissan Xterra, 2WD, AT, ~42,921 miles, bids accepted until 3:30 p.m., 8/4, right to refuse, sold as is. SLFCU, 293-0500.

'04 LEXUS RX330, all available options, silver pearl, 81K miles, immaculate condition, $17,500. Goodson, 407-1688, rdgoods12@hotmail.com.

'01 BMW X5, dealer serviced, original owner, 147K miles, excellent condition, $9,200 OBO. Barton, 286-3821.

'95 GT MUSTANG, 5.0, 5-spd., air bags deployed, good body, not wrecked, 1 owner, 248K miles, runs well, photos available, $2,200 OBO. Obrien, 400-1564, ask for Albert.

'98 BUICK CENTURY, AT, AC, records, dealer maintenance, 90K miles, good tires, great condition, runs well, $4,100 negotiable. Whalen, 350-0480.

'82 PORSCHE 911 SC TARGA, completely restored '03, garaged, performs flawlessly, excellent condition, $11,000 OBO. Marsh, 294-2857.

'02 SUBARU OUTBACK, AWD, AT, 28-mpg, new tires, 140K miles, very clean, <book, $6,750. Wright, 281-1016.

MAXIMA 3.5 SE, 6-spd. manual, sunroof, 6-CD Bose radio, 28K miles, excellent condition, $15,500. Pardo, 884-8638.

'07 HYUNDAI SANTA FE, fully loaded, black w/gray interior, 24K miles, excellent condition, $19,500. Chamberlin, 271-0131.

'99 TOYOTA CAMRY LE, 4-dr., white, super clean inside/out, no leaks, new Michelins, perfect for student, $3,500<book. Strauch, 265-5320.

RECREATIONAL

'08 PIAGGIO MP3 SCOOTER, 500cc, fuel injected, $5,500; '04 Pontiac Montana minivan, 65K miles, $7,990. Foster, 270-6696.

'07 HONDA VTX 1300S, Vance & Hines high-performance exhaust, 11K highway miles, garage-kept, runs perfectly, $6,350 OBO. Sanchez, 238-8037.

'79 HARLEY-DAVIDSON IRON HEAD, 1000cc, rebuilt motor w/2K miles, must sell, $4,500 OBO. Delgado, 294-2037.

'04 36XTRM5 CARRI-LITE 5TH WHEEL, 36-ft., 5 slide outs, excellent condition, see at KAFB auto lot, $39,900. Schoof, 828-2510.

'07 YAMAHA FZ6, clean title, 5,962 miles, excellent condition, $4,600 OBO. Lucero, 505-850-3032.

LEMOND POPRAD Cyclocross 52cm steel/Winwood Cyclofork Shimano105/Ultegra, $750; girl's Schwinn, 16-in., $50; Adams Folder trail-a-bike, $125. Eckstein, 505-681-6453.

'09 SUZUKI S40 (LS650) BOULEVARD, only 140 miles, showroom condition, saddlebags & gel seat, $4,000. Langwell, 270-1578.

TEARDROP TRAILER, 4' x 8', insulated, 2 drs./windows, 45" x 73" inside, lighted, galley, battery, $3,900 OBO. Mooney, 294-5161.

'01 HONDA ELITE 80 SCOOTER, yellow, 1,700 miles, excellent condition, Tramway/Academy, $850. Caicedo, 217-4334.

BMX BIKE, Junior "Intense" frame, great condition, $115, can negotiate. Brewster, 238-4704, ask for Julie.

REAL ESTATE

3-BDR. HOME, 1-3/4 baths, 2,102-sq. ft., open floor plan, big backyard, xeriscaped, foothills, near KAFB, MLS#685060, $249,900. Lindsay, 264-7887.

2+-BDR. HOME, renovated, North Valley, great access to trails & river, $276,900. Murphy, 350-5004.

3-BDR. HOME, 2 baths, ~.5 acre, quick access to highway, East Mountains, Open House August 1, MLS#684466, $175,000. Graf, 264-0190, ask for Josephine.

3-BDR. HOME, 2 baths, 2-car garage, 1,730-sq. ft., updated kitchen & baths, ranch-style, 14108 La Cueva Avenue NE, $229,900. Pando, 249-0188, ask for Mark.

4-BDR. HOME, 3 baths, 3,125-sq. ft., built in alarm, 1/3 acre lot, close to KAFB, $399,000. Watrin, 206-1825, ask for Liz.

3-BDR. HOME, 2-1/2 baths, 2,800-sq. ft., 10 acres, solar, detached workshop, pool, horse pen, Tijeras, $475,000. Burns, 281-3922.

3-BDR. HOME, 2 baths, 1,432-sq. ft., custom tile/lighting, Coors/Paseo, fantastic views, MLS#678156, $199,000. Ordonez, 220-7508.

4-BDR. HOME, 3 baths, 2,320-sq. ft., 3-car garage, cul-de-sac, http://www.realtor.com/realestateandhomes-detail/505-Wine-ma-Ct-Se_Albuquerque_NM_87123_1118547985, $280,000. Ice, 332-0823.

3-BDR. HOME, 2-1/2 baths, 1,794-sq. ft., refrigerated air, covered patio, landscaped, Vista Del Norte neighborhood, FSBO, $259,000. Newman, 505-238-9787.

3-BDR. BRICK HOME, 2-1/2 baths, 3-car garage, .24 acre, 2,190-sq. ft., Paradise Hills, Richland Hills, MLS#687071, $272,500. Boyd, 280-1515, ask for Michele.

WANTED

GOOD HOME, female Korgi, purebred w/papers, born 10/2007, good w/kids. Yelton, 259-2720.

CARING HOME, plecostomus fish (female?), 10-in. long, grown too large for 55-gal. tank. Phelan, 869-6094.

FURNISHED ROOMS, 3 female international students, fall semester, near UNM or bus line, do not have to live in same location. Jennings, 610-1142.

REFRIGERATOR, small unit, for college student. Nickerson, 298-5634.

OLD LOG SPLITTER or parts to build one; honey extractor for beekeeping. Aragon, 292-8883 or 514-3370.

SENSITIVE TASTE BUDS, to identify ingredients in a recipe, no pay, but free food sample. Kennedy, 234-6257.

HOUSE TO RENT, for 1 yr., desire immediately, NE Heights, 3-bdr., garage, dog. Wagner, 362-6062.

ROOMMATE, share 2,000-sq. ft. 3-bdr. home, college student/child (4 yrs old), near Cottonwood Mall, $650 +utilities. Prestwich, 315-8107, ask for Joseph.

FaST program provides hands-on research opportunities at Sandia

Story by Iris Aboytes

The Faculty and Student Teams (FaST) Program is a new initiative at Sandia coordinated by Community Involvement Dept. 3652. This cooperative effort between DOE and the National Science Foundation provides hands-on research opportunities in DOE national laboratories during the summer for a team comprising a faculty member and two students.

FORT HAYS UNIVERSITY STUDENT C.J. Pearce, left, confers with professor Cathy Clewett during an experiment designed to understand water and chemical warfare agent interactions with surfaces. The two worked with Todd Adams (1816).
(Photo by Todd Alam)

FaST targets faculty from colleges and universities with limited research facilities and those institutions serving populations, women, and minorities underrepresented in the fields of science, engineering, and technology.

Professor Gil Gallegos and student Jeff Thornton from New Mexico Highlands University are working with Wendy Amai (6472) to write software controls for a robot designed for both national security and exploration in unknown environments.

"In addition to getting a chance to apply course work to real work, I have now narrowed my academic and career goals and plan to pursue electrical computer engineering programs for my master's and doctorate degrees," says Jeff, a senior majoring in computer science. "I'd like to work with embedded systems for robotics."

Gallegos says students must have the latest technology and knowledge in their field to be marketable and in that regard the FaST program is a big help.

Professor Cathy Clewett and student C.J. Pearce from Fort Hays State University in western Kansas are working with Todd Alam (1816), using computational and experimental nuclear magnetic resonance (NMR) spectroscopy methods to understand and predict water and chemical warfare agent interactions with surfaces.

"C.J. is getting the chance to use state-of-the-art equipment he can only read about at our university, and we are both learning about computational techniques," says Clewett, who was a graduate student intern at Sandia in the NMR Spectroscopy Facility prior to becoming a faculty member at Fort Hays.

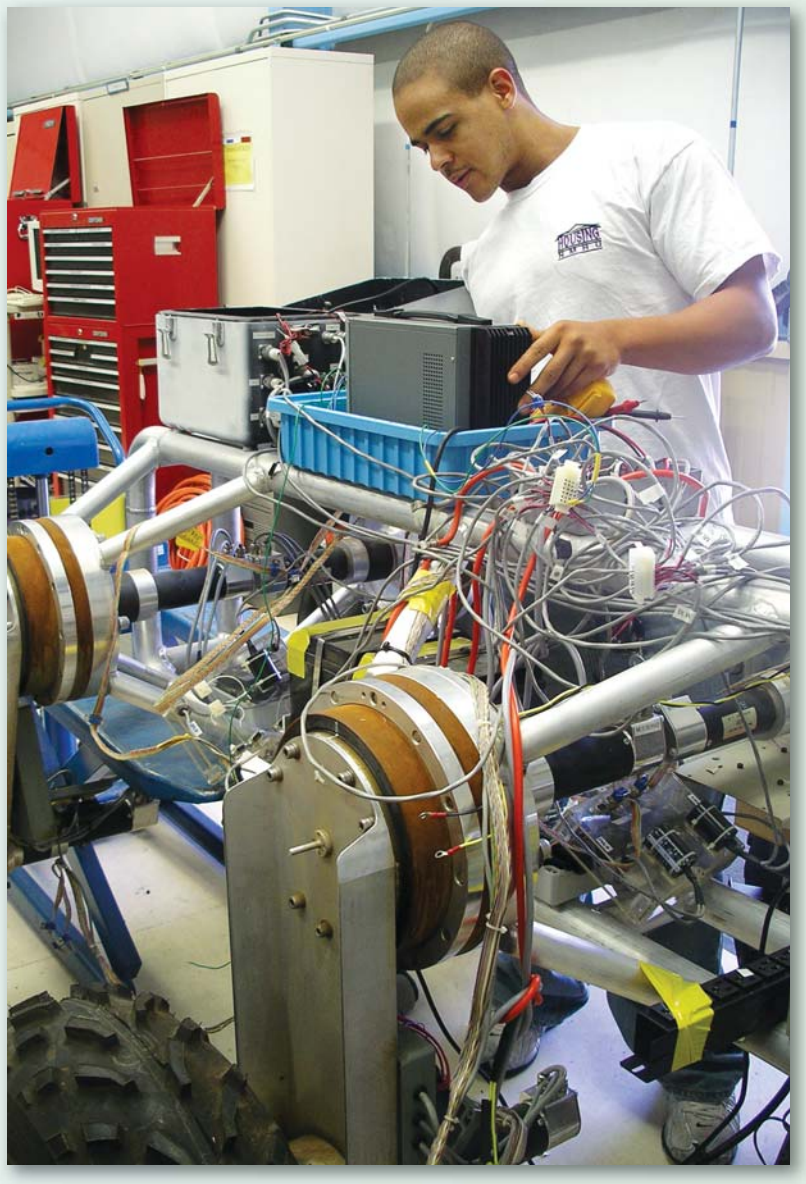
"This opportunity has given me research experience and shown me a variety of options of what to do with my degree," says C.J., a junior physics major. "Before this summer, I had no idea what the word 'research' really meant; now there are so many more options open to me."

Todd says the FaST program provides an excellent opportunity to expose bright students to research opportunities and topics they would never experience at a smaller school.

"I'm also excited about having C.J. returning next summer to my laboratory to continue working on these research projects," he adds.

According to program manager Amy Tapia (3652), FaST provides a unique opportunity that benefits Sandia, the university, the professor and the student.

"Sandia researchers appreciate having both professor and students," Amy says, "because it increases the immediate contribution a student can make with a professor alongside to bridge the gap between academics and real-world applications. Professionally, the professor and researcher share a common interest in completing work of national importance in a certain technical field. And the students gain relevant job skills."



NEW MEXICO HIGHLANDS UNIVERSITY STUDENT Jeff Thornton goes to work on the Mule robot. Jeff and professor Gil Gallegos worked with Wendy Amai (6472).
(Photo by Wendy Amai)

Kirtland summer bash

The annual Kirtland Air Force Base summer bash welcomed hundreds of attendees July 23 to a wide range of attractions, activities, and demonstrations. In addition to Air Force personnel, the event drew scores of Sandians, drawn to the bash by the festive music emanating from Hardin Field. A centerpiece of the day was the unique Osprey aircraft, which can hover and land like a helicopter and fly from point to point like an airplane. Other highlights included a custom car show, a display of midget race cars, live music, vendor displays, and fun and games.
(Photos by Stephanie Holinka)