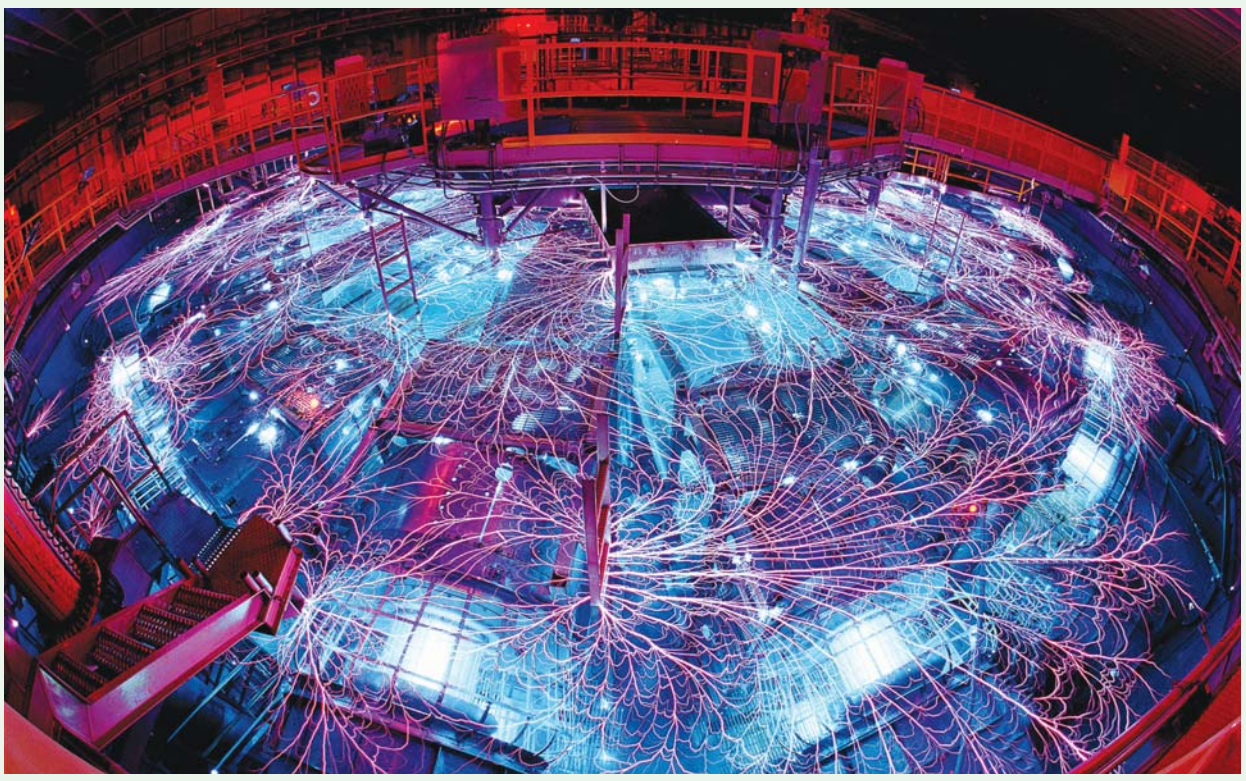
Latest Z machine experiment for NNSA advances stockpile stewardship mission



By Neal Singer

On Nov. 18, Sandia's Z machine performed an experiment to enhance scientific understanding of the properties of plutonium.

The test, a success, was the first plutonium experiment at Z in four years.

Keith Matzen, director of Sandia's pulsed power program (1600), says, "Understanding the detailed response of these materials at high pressure is important for ensuring the safety, reliability, and effectiveness of the nuclear stockpile. I am very proud of the Z team."

The experiment is a continuation of stockpile stewardship studies performed at Sandia prior to the major refurbishment of the Z machine to increase its output of electrical energy. The improved output makes Z more valuable for weapons science studies and more effective in the worldwide effort to harness nuclear fusion for peacetime purposes.

Materials for the just-completed experiment were

(Continued on page 5)

SANDIA'S Z MACHINE, seen here during a test firing in the mid-1990s, has been a key tool in NNSA's stockpile stewardship mission for many years. Z has also been used to advance nuclear fusion research, which aims to harness the power of fusion for a virtually limitless energy supply. (Photo by Randy Montoya)

Kim Sawyer joins Labs as new EVP

Kimberly Sawyer, fresh from her job as VP for Technical Operations for Lockheed Martin's Mission Systems & Sensors business unit, has joined Sandia as executive VP for Mission Support. She replaces Al Romig, who is taking a position with Lockheed Martin. See the story on **page 2.**

Sandia LabNews

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Sandia National Laboratories

Your 401(k)

New service aims to help Sandians manage 401(k) plans more effectively

By Renee Deger

About 9,000 current and former Sandia employees who participate in the Labs' Savings and Income (401(k)) Plan got their first taste of professional investment management services recently. And for some, it was a bitter reminder that diverting a few salary percentage points into a couple of mutual funds and maybe a CD or two may not be a sufficient strategy for generating a comfy retirement income.

Sandia has joined the growing number of large corporations hiring professional investment advisers to lend employees a helping hand with their retirement planning. The company expanded its package of savings plan resources to include access to Financial

(Continued on page 5)

Inside . . .

Div. 8000 VP Rick Stulen at the dedication of the ABL.

New life for a familiar California facility 3
Supercomputers ranked in new speed test 4
New rules for retirees serving as contractors 6
Volunteering after retirement 7

Sandians lead SC10 effort in New Orleans, demonstrate current HPC and cyber capabilities

BIGGER THAN LIFE — Barry Hess (9610) addresses attendees at the SC10 conference in New Orleans. Barry served as general chair of the annual supercomputing conference, whose technical program this year included a broad spectrum of presentations, panels, and workshops focusing on high-performance computing topics such as storage, clouds and grids, systems software, and architecture/networks. (Photo courtesy of SC10)

Annual supercomputer conference keeps focus on state of the art

By Mike Janes

Sandia was well-represented last month at SC10, the annual high performance computing, networking, and storage event held in New Orleans this year.

Spotlighting the most original and fascinating scientific and technical applications from around the world, SC10 brings together scientists, engineers, researchers, educators, programmers, system administrators, developers and program managers from various sectors. Participants representing industry, academia and government research organizations take part in presentations, workshops and exhibits featuring the latest breakthroughs in high-performance computing, networking, storage and analysis.

"The SC conference series is truly a remarkable gathering of the best minds in the computing community on both the provider and user side," says Barry Hess (9610), who served as SC10 General Chair.

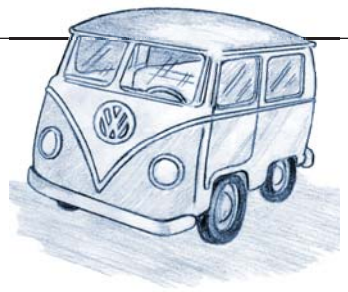
Sandia played an unusually strong leadership role at the SC show this year. In addition to Barry's chairman-

(Continued on page 4)

Shoes for Kids means warm feet this winter

Sandia program has provided news shoes to needy kids for more than 50 years • See page 8

That's that



Did you see where Volkswagen is coming out with a new New Beetle, due to hit a showroom near you in 2012? Oprah gave away an audience full of them — 275, to be exact — the other day in one of those grand gestures for which Oprah has become famous. VW hasn't released any photos yet, but the company has a tantalizing teaser on its website. Presumably, the new New Beetle will be a theme and variation on the existing design, which itself is a post-modern interpretation of the classic VW Beetle, whose look dates from the 1930s.

I've always been a VW bug, er . . . make that fan. My first car — well, I didn't own it, but I drove it daily — was a 1963 Beetle convertible with an engine from a 1959 Porsche 356B. Used it to deliver newspapers on a rural route between Washington, D.C., and Baltimore, Md. Gosh it was fun, tooling along misty lanes at 3 in the morning, that Porsche engine growling, shooting rolled-up *Baltimore Suns* into those newspaper tubes — the kind you still see out in the country next to the mailbox at the end of the driveway. The challenge was to see how fast you could go and still get the paper in the tube. I got pretty good; the trick was all in the way you flicked your wrist.

Later on I owned a 1967 VW camper for a bunch of years; drove it back and forth across the country several times. I loved that car, but I have to admit that chugging against the wind in Nebraska in high summer, topping out over long grades at 35 mph, was enough to reduce me (almost) to tears. Every 50,000 miles, like clockwork, I had to rebuild that overworked, air-cooled, 1,200 cc engine. Learned a lot about mechanics under that car. More than I wanted to know at the time.

Subsequently, my wife and I, just married, put everything we owned into the back of a 1969 Beetle convertible and drove it around the country for several months before settling in Albuquerque. (Full disclosure — that's where we ran out of money.) We bought the car in Maine, where the salt and chemicals they put on the roads up there in the winter do a real number on cars. We were so excited to get the car — Heading south! In a convertible! — and so looking forward to our trip that we really didn't scrutinize it too closely. We just bought it, packed it up, and took off, following the sun. (The follies of youth, right?)

About 10 miles out of Camden, Maine, my wife said, "Are you supposed to be able to see the road through the floor?" Uh, no.

Later in that same trip, our convertible top, held on by this point with duct tape and baling wire (so to speak), blew off. Wasn't much of a surprise to me, though. I'd been predicting it for weeks. Ever since then, my wife has taken my periodic forays into doom-and-gloom scenarios much more seriously. When I say something is bound to go wrong, she may be skeptical, declare I'm too negative, until I say, "Remember that VW top?"

Then there was the time, down in the Florida Keys, where the throttle cable broke and left us along the side of the road. Luckily, we were right next to a fence that was sort of strapped together with baling wire, real baling wire this time. I grabbed about a 10-foot piece of that wire and rigged a new throttle cable. Worked fine. I never got around to replacing it, either. Try doing that with your Lexus LS 11. (But then, you wouldn't have to, would you?)

Finally, a few years back, we bought a 1984 VW Vanagon, which was really an amazing vehicle. I remember the time we were taking it up to Cochiti Lake for a day trip; into the back of the car we loaded five kids (our two and three friends) and two kayaks. Oh, and we tied a two-person kayak to the roof.

The New Beetles and the Jettas and the VW SUVs — the entire modern VW product line of cars designed for various market niches — have just never held the same magic for me as the old Beetles and microbuses. Maybe it's because I can't fix 'em if they break down. More likely it's because I associate those old beauties with youth and adventure (not that I've given up on the latter, mind you). But I'll tell you this: If Oprah offers me a new New Beetle, I'm not gonna say no.

See you next time.

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

Kimberly Sawyer named Labs' new executive VP for Mission Support

Lockheed Martin vice president replaces Al Romig

Effective this week, Kimberly Sawyer has assumed the role of Sandia deputy director and executive VP for Mission Support. She replaces Al Romig, who will be transitioning to an executive position with Lockheed Martin. Immediately prior to coming to Sandia, Kim served as vice president of Technical Operations for Lockheed Martin's Mission Systems & Sensors business unit.

"I am pleased to announce Kim's selection as the next executive VP and deputy Laboratories director for Mission Support," Labs Director Paul Hommert says. "Kim has extensive leadership, technical, and operational experience over a 30-year career, and will bring a proven record of success, as well as a deep knowledge of business and technical best practices that will significantly benefit the Laboratories."

KIMBERLY SAWYER

Kim had been in her most recent role with Lockheed Martin since July 2008. She managed the engineering and technology workforce for a business unit focused on global security and civil and commercial markets. In this capacity, she implemented major business process initiatives, including restructuring the technical organization into virtual centers of excellence.

Prior to her current role, she was vice president for Advanced Concepts in Lockheed Martin's corporate engineering and technology organization, where she was responsible for collaboration with key business area executives to improve the horizontal integration of advanced technology and innovation practices.

She also served as Lockheed Martin's vice president of Computing and Network Services, where she was responsible for delivering enterprise and site computing infrastructure, data center operations, network and telecommunications, information security, and asset management for the corporation.

Prior to joining Lockheed Martin, Kim held key technical roles with Coca-Cola Enterprises and Xerox Corp., as well as technical staff positions with TRW and DuPont.

Kim earned a Bachelor of Science degree in business administration with emphasis on computing curriculum from Robert Morris University, and an Master of Science in applied mathematics and computing from the University of Massachusetts.

Al Romig will assist with Kim's transition through the month of December. It is planned that Al will transfer to Lockheed Martin in January.

"I want to express my most sincere thanks and appreciation to Al for his service to the country and Sandia," Paul says. Al has made significant contributions to the Laboratories and I truly value his experience and expertise. He has played a key role in positioning Sandia for success in the future. I wish him the very best in his new role with Lockheed Martin."

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).

* * *

John Williams (1725) and William Sweatt (1535): Method to Fabricate a Tilted Logpile Photonic Crystal. Patent No. 7,820,325.

Robert Moore (6771) and Mark Tucker (6375): Method of Purifying Isosaccharinate. Patent No. 7,790,134.

Ronald Manginell (1717), Patrick Lewis (1716), David Wheeler (1714), and Robert Simonson (1716): Tortuous Path Preconcentrator. Patent No. 7,799,280.

Michael Hibbs, Cy Fujimoto, and Kirsten Norman (all 6124): Epoxy Cross-Linked Sulfonated Poly (Phenylene) Copolymer Proton Exchange Membranes. Patent No. 7,602,307.

Applied Biosciences Laboratory

A third act for California's Bldg. 968

Sandia CaliforniaNews

Story by Patti Koning • Photos by Randy Wong

Studies show that the average working American will have at least three and as many as seven careers in his or her lifetime. This means that Bldg. 968, now in its third career after 35 years of existence, is right on track.

On Nov. 22, Div. 8000 VP Rick Stulen and Center 8600 Director Glenn Kubiak led an official rededication ceremony for Bldg. 968. Known as the Chemical and Radiation Detection Laboratory (CRDL) for the past 14 years, the building is now called the Applied Biosciences Laboratory.

Rick recalled the groundbreaking for the first iteration of Bldg. 968, the Tritium Research Laboratory, in 1973 and the building's grand opening in 1975.

"It was a pretty spectacular first decade as we utilized the capability of this building to do unique research in hydrogen that considerably advanced Sandia's reputation," he said.

In the mid-90s, Rick said, it was time for a career change for the building.

"Mim John realized there was an opportunity for research into radiation and chemical detection in this building," he added. "Following the rededication to CRDL, we had another decade or so of very vibrant research into chemical detection, most notably with MicroChemLab."

Turning to the present, Glenn posed the question of why rename a 35-year-old building.

"Because it's absolutely appropriate and acknowledges a transition that in many ways has already happened," he said. "That transition is the growth of the importance of biology to Sandia's missions."

He noted that in 2004, activities falling under the realm of biology and biological sciences were about $23 million in scope. In the last fiscal year, that number had grown to $38 million.

"I think the name, Applied Biosciences Laboratory, captures the DNA of how Sandia does its work," he added. "Sandia is committed to deep science, and that science is always connected to a national security problem or application. There are building names all over this campus and in New Mexico, like the Distributed Information Systems Laboratory or the Center for Integrated Nanotechnology, but none are dedicated to the pursuit of biology.

"This name change communicates internally to Sandia and externally to the scientific and national security communities that Sandia has been doing biology, is now doing biology, and will definitely continue to do biology. The train is solidly down the track and we will continue to grow biology."

He acknowledged the contributions of Len Napolitano (8900); former Div. 8000 VP Mim John; Duane Lindner (8120); Malin Young (8620); Grant Heffelfinger (1610); Terry Michalske (former director of Energy and Security Systems, now director of Savannah River National Laboratory); John Vitko (former director of Exploratory Systems and a former director of Biological and Chemical Countermeasures for the Department of Homeland Security); and Div. 6000 VP Jill Hruby.

"It was really the individual insights, vision, and perseverance of those folks and many others that brought us where we are today," Glenn said. "I want everyone to walk away today with the idea that every single individual in this laboratory has the ability, through their vision and dedication, to change what this laboratory does for the nation. Each and every one of you has that power. Please bring that power together as a team so you can help write the next chapters of biology at Sandia."

RAJIV BHARADWAJ (8621) discusses his research with Rick Stulen during the Applied Biosciences Laboratory open house.

AT THE DEDICATION of the Applied Biosciences Laboratory, Div. 8000 VP Rick Stulen talks about the history of Bldg. 968 dating back to 1973.

UNDER CONSTRUCTION — Bldg. 968 undergoes one of the several modifications the building has had over the past 35 years.

VICE PRESIDENT TOM COOK breaks ground for the Tritium Research Laboratory (originally named the Aerostatics Building). Observing are (from left) Byron Murphey, John Pearce, Hilt DeSelm, and George Anderson. The single-story, 15,000-square-foot building was completed in 1975. It housed laboratories for experimentation with tritium and its compounds.

(Historical photos provided by Dave Brekke)

MIM JOHN and colleagues during the ribbon-cutting ceremony at the dedication of the CRDL in 1996.

Supercomputing

(Continued from page 1)

ship, Jamie Van Randwyk (8966) served as Chair of SciNet, the ultra high-performance network built to support the conference (Jamie was essentially responsible for positioning the convention venue as one of the most "connected" places on earth for a week). Jim Costa (8950) served as Deputy Technical Program Chair, and many other Sandians volunteered on a variety of SC10 committees.

For the first time in many years, Sandia maintained its own booth at SC10 and also had its traditional presence at the NNSA / ASC (Advanced Simulation and Computing) exhibit area.

"We recognized that a focused presence at SC10 could help publicize the Labs' diverse portfolio of HPC research and growing application to technical challenges in cyber security, energy and other national security areas," said Ben Cook (5641), manager of Sandia's Cyber Enterprise Capabilities group. "In addition, we thought our own booth at SC10 would help engage the external HPC community in the broad range of research collaboration and career opportunities available at Sandia."

The Sandia booth, says Ben, was intended to complement the lab's long-standing support and participation in the ASC program booth, an activity that remains a significant program focus for Sandia's high-performance computing efforts.

The Sandia booth featured demos by Will Atkins (5628), who provided overviews of the Virtual Control System Environment (VCSE), and Ron Minnich (8961), who described the anti-botnet "Mega-Tux" work going on at Sandia (Lab News, July 1, 2009). A number of other Sandians, including Tim Berg and Jimmie Wolf (9336), Keith Vanderveen (8961), Ron Oldfield (1423), Chrisma Jackson (5625), and Curtis Janssen (8953), volunteered their expertise and answered questions about Sandia's high-performance computing and cyber security research efforts and capabilities.

Across the Exhibits Hall at the NNSA/ASC booth, a large team of Sandians from numerous ASC projects from across the lab showcased their recent technical accomplishments. Ann Gentile, Jim Brandt, and Jackson Mayo (all 8953), for example, ran its OVIS software program to interested onlookers and potential users. OVIS is a tool for intelligent, scalable, real-time monitoring of large computational clusters.

"Supercomputing is a universal scientific instrument – one with the power to make the world a better place for all of us," says Barry. "You can really feel that potential when you're at the conference."

"Supercomputing is a universal scientific instrument — one with the power to make the world a better place for all of us. You can really feel that potential when you're at the conference."

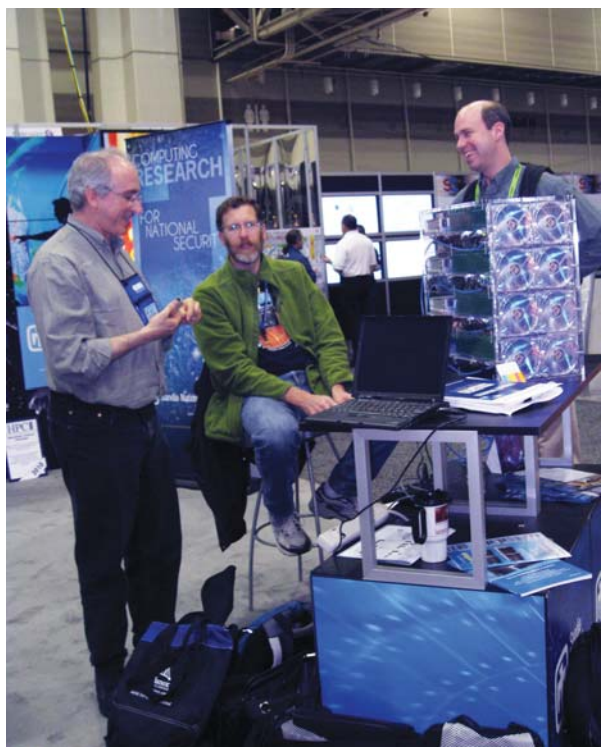
— Barry Hess, SC10 general chair

SC10 success a team effort

Following are those Sandians who helped staff the NNSA / Advanced Simulation & Computing (ASC) exhibit at this year's SC10 show in New Orleans: Andrea Almendarez (9326), Bob Balance (9328), Richard Barrett (1422), Dennis Bateman (9338), Erik Boman (1416), Jim Brandt (8953), Sophia Corwell (9328), Matthew Curry (1423), Denise Eatherly (9326), Ann Gentile (8953), Russ Goebel (9326), John Greenfield (9326), Mike Heroux (1416), Mark Hoemmen (1416), Ed Hoffman (8954), Justine Johannes (1220), Kevin Kelsey (9328), Christopher Lamb (95132), Jim Laros (1422), Rob Leland (1400), Paul Lin (1437), Kerri Nichols (9326), John Noe (9328), Dino Pavlakos (9326), Kevin Pedretti (1423), Kyle Peterson (1644), Julia Phillips (1200), Sandy Portlock (1400), Mahesh Rajan (9326), David Rogers (1424), Kelley Shaw (9326), Joel Stevenson (9326), Narate Taerat (8953), Regina Valenzuela (10694), Ross Volzer (9326), Lee Ward (1423), Michael Wolf (1416), Matthew Wong (8953), and John Zepper (9300).

The following people played a vital role in the vision, design, and administration of the Sandia booth: Ben Cook (5641), David Cunnington (10650), Johanna Hartenberger (1512), Kathryn Hanselmann (1932), Danielle Fortier (3555), and Kathy Robertson (5641). In addition, Ron Minnich (8961), and Mitch Williams (8961) were responsible for the MegaTux demonstration. Will Atkins (5628) was responsible for the VCSE demonstration.

CHRISMA JACKSON (5625) and Ben Cook (5641) (in photo above) were among several Sandians who staffed the Sandia booth at SC10. At right, Ron Minnich (8961), center, provides an overview of Mega Tux. The project aims to boot a million virtual machines on large, high-end supercomputers. Success will help cyber security experts in combating malicious botnets. In photo below, Will Atkins (5628) displays the Virtual Control System Environment (VCSE), which does modeling and simulation of network architectures seen in process control systems. (Photos by Mike Janes)



Graph500 rankings released at SC10 conference

By Neal Singer

Nine supercomputers have been tested, validated, and ranked by the new "Graph500" challenge, introduced by an international team led by Sandia researchers.

The list of submitters and the order of their finish was released Nov. 17 at the supercomputing conference SC10 in New Orleans.

The machines were tested for their ability to solve complex problems involving random-appearing graphs, rather than for their speed in solving a basic numerical problem, today's popular method for ranking top systems.

"Some, whose supercomputers placed very highly on simpler tests like the Linpack, also tested them on the Graph500, but decided not to submit results because their machines would shine much less brightly," says Richard Murphy (1422), a lead researcher in creating and maintaining the test.

Richard developed the Graph500 Challenge with researchers at the Georgia Institute of Technology, University of Illinois at Urbana-Champaign, and Indiana University, among others.

Complex problems involving huge numbers of related data points are found in the medical world, where large numbers of medical entries must be correlated; in the analysis of social networks with their huge numbers of electronically related participants; or in international security, where huge numbers of containers on ships roaming the world and their ports of call must be tracked.

Such problems are solved by creating large, complex graphs with vertices that represent the data points — say, people on Facebook — and edges that represent relations between the data points — say, friends on Facebook. These problems stress the ability of computing systems to store and communicate large amounts of data in irregular, fast-changing communication patterns, rather than the ability to perform many arithmetic operations. The Graph500 benchmarks are indicative of the ability of supercomputers to handle such complex problems.

The Graph500 benchmarks present problems in different input sizes. These are described as huge, large, medium, small, mini, and toy. No machine proved capable of handling problems in the huge or large categories.

"I consider that a success," says Richard. "We posed a really hard challenge and I think people are going to have to work to do 'large' or 'huge' problems in the available time." More memory, he says, might help.

The abbreviations "GE/s" and "ME/s" represented in the list below describe each machine's capabilities in giga-edges per second and mega-edges per second — a billion and million edges traversed in a second, respectively.

Competitors were ranked first by the size of the problem attempted and then by edges per second. The rankings were:

1) Argonne National Laboratory – *Intrepid*
   6.6 GE/s on scale 36 (Medium)
2) National Energy Research Scientific Computing Center – *Franklin*
   5.22 GE/s on Scale 32 (Small)
3) Pacific Northwest National Laboratory – *cougarxmt*
   1.22 GE/s on Scale 29 (Mini)
4) Sandia National Laboratories – *graphstorm*
   1.17 GE/s on Scale 29 (Mini)
5) Intel Corporation – *Endeavor*
   533 ME/s on Scale 29 (Mini)
6) Oak Ridge National Laboratory – *Erdos*
   50.5 ME/s on Scale 29 (Mini)
7) Sandia National Laboratories – *Red Sky*
   477.5 ME/s on Scale 28 (Toy++)
8) Oak Ridge National Laboratory – *Jaguar*
   800 ME/s on Scale 27 (Toy+)
9) Intel Corporation – *Endeavor*
   615.8 ME/s on Scale 26 (Toy)

GET A HANDLE ON YOUR 401(K)

(Continued from page 1)

Engines, a leading provider of retirement savings advice, evaluation, and management services. The service kicked off Nov. 15.

As corporate-sponsored pension funds are phased out and replaced with 401(k) programs, companies are finding their workforces are largely unprepared to take on the task of managing long-term investment portfolios. And with US workers increasingly finding their 401(k) account is their main retirement savings, employers are facing increased responsibility for ensuring their workers have access to a broader range of services and support resources.

"Employers are shutting down their pension funds or excluding new hires from their pension programs, as Sandia has done for new non-union hires arriving after Jan. 1, 2009, and putting the responsibility of saving for their retirement onto the employees," Mark Biggs, a senior manager in the retirement programs department (10520), says. "But it's become clear that employees need some support and help in making these important investment decisions."

'Guidance' vs. 'advice'

The Investment Committee of Sandia's board of directors, which is charged with overseeing pension and 401(k) plan investments, decided in March to expand the resources for savings plan participants to include professional advisory services. Sandia 401(k) participants already had access to online tools through Fidelity Investments, which manages Sandia's 401(k) plan. However, those fall under the heading of "guidance" not true "advice." For that additional level of advisory services, Sandia looked outside of Fidelity.

Jane Farris, a member of the retirement programs staff (10520), says the Investment Committee selected Financial Engines over other providers for a number of reasons. The company is one of the largest providers of advisory services to 401(k) plans managed by Fortune 500 companies. Further, the company's software is fully integrated with Fidelity so the expansion of resources is seamless for Sandia plan participants. Finally, the company utilizes market-tested financial practices and investment theories. The company was founded by Nobel Laureate Bill Sharpe.

A 2 percent better return?

The upside for 401(k) participants to take advantage of professional advice can be significant, according to a joint study by Financial Engines and Hewitt Associates, a leading human resources consultant. A study released in January found that individuals who get professional help enjoyed a median annual return that was 2 percent higher than those who didn't. That may not seem like much, but consider over time that can equal tens of thousands of dollars, if not more, over many years.

To signal the launch of Sandia's new Financial Engines services, 401(k) participants were treated to an initial assessment of their current savings portfolio and strategy in letters mailed out the first week. The Retirement Evaluations, based on each individual's existing retirement account, utilized a series of green, yellow, or red traffic light icons to illustrate whether individuals were on target or off base on their savings activities and strategies compared to their goals.

A sample 401(k) analysis provided by Financial Engines

investments[2]

Your investments may be too aggressive even for someone with 23 years until retirement.

You have too much allocated to company stock.[2]

NOT SURE WHAT CHANGES TO MAKE?

- Consider taking less risk and reducing the company stock you hold.
- This can help protect against the risk of big losses.
- Financial Engines can help select investments at a risk level that is right for you. Call us if you have other retirement accounts to consider.

savings[3]

You could save more but you are taking good advantage of your Employer contribution.

HOW MUCH SHOULD YOU SAVE?

- Consider increasing your pre-tax savings to increase the amount you could have in retirement.
- With this increase, you will be taking better advantage of the savings allowed by your plan.
- Financial Engines can help you see the impact of saving more.

retirement income[4]

You could have $32,800 per year at age 65. That may not be enough to retire.[4]

CAN YOU DO BETTER?

- This forecast assumes average market performance. It could be $26,000/yr or less if markets do poorly.[4]
- Financial Engines can create a Retirement Plan that considers all of your investments.

The letters were likely received by an engaged audience. Mark says that according to Fidelity Investments, on average more Sandia employees participate in the company's 401(k) program compared to comparably sized companies, they save at higher rates, and they have amassed larger nest eggs.

Privacy concerns respected, protected

However, the arrival of the letters raised a number of questions. One of the most commonly asked questions among Sandia 401(k) savers is whether privacy laws have been observed since Financial Engines has gained access to personal financial information, Rebecca Spires, also on the retirement programs staff, (10520) says. The answer, she adds, is that most definitely privacy has been preserved. Sandia has, in effect, chosen to enlarge the basket of services with the addition of Financial Engines. Financial Engines has appropriate security policies in place designed to protect personal information, and it has assumed a fiduciary role in regard to its advice services, Rebecca says.

The core service that Sandia has purchased for its 401(k) participants includes access to Financial Engines' online financial assessment and planning software tools. These tools are available directly from the Fidelity NetBenefits page that participants currently use to access and manage their 401(k) accounts. (Look for the Financial Engines link and logo under "investment Help" on the NetBenefits home page.) It's still up to each individual to act on the advice that Financial Engines provides.

There is, however, an additional, elevated service level that plan participants may elect to buy directly from Financial Engines that turns over the management of their retirement funds to Financial Engines professionals. The fee for this is based on a sliding scale depending on the total assets in the account that is to be managed. The new service was launched with an introductory special for professional account management. Plan participants who opt for professional account management by Dec. 17 do not have to pay for the service if they cancel within 90 days. However, plan participants may start or stop this account management service at any time.

Finally, participants can email Financial Engines (Advisor@FinancialEngines.com) and asked to be placed on their "Do Not Contact" list if they don't wish to receive any future mailings from them.

For general questions about the new service, contact Rebecca at 844-9965 or David Medina at 844-0997. For help navigating the new Financial Engines service and tools, call customer support at 800-601-5957.

Z machine supports stockpile stewardship

(Continued from page 1)

provided by Los Alamos National Laboratory.

"The successful Z machine experiment demonstrates our commitment to ensuring that NNSA has the infrastructure, facilities, and highly trained scientists and engineers required to maintain a smaller stockpile without nuclear testing," says Don Cook, NNSA deputy administrator for Defense Programs. "We congratulate the Sandia-led team for a job well done."

Chris Deeney, assistant deputy administrator for Stockpile Stewardship, says, "Stockpile stewardship brings together the laboratories, local high-tech industry, and the NNSA to safely develop measurements that complement our work in the subcritical experiments at Nevada."

Cook and Deeney, in years past held research and administrative positions at Sandia's Z machine and well understand the accelerator's capabilities.

The Z machine is Earth's most powerful and efficient laboratory radiation source. It can fire 200 "shots" a year, using electrical currents up to 26 million amperes to produce peak X-ray power of 350 terawatts and an X-ray energy of 2.7 megajoules.

The Z machine is part of Sandia's pulsed power program, which concentrates electrical energy and turns it into short pulses of enormous electrical power. The magnetic pressure associated with the flow of these very large currents is used to generate either X-ray pulses or pressure waves in materials.

Because Z creates radiation conditions on a small scale similar to those caused by the detonation of nuclear weapons, pulsed power from its earliest days has been used to study weapons effects and nuclear fusion. More recently, Z's pressure waves, which exceed pressures at the center of the earth, have been used to study the dynamic properties of nuclear weapon materials.

NNSA DEPUTY ADMINISTRATOR for Defense Programs Don Cook, seen here at a recent Sandia visit, emphasizes the importance of the Z machine tests to NNSA's stockpile stewardship mission. Earlier in his career, Cook headed up Sandia's pulsed power program for several years. (Photo by Randy Montoya)

Mileposts

New Mexico *photos by Michelle Fleming*

Ray Burchard
25 5762

Rekha Rao
20 1514

Samuel Felix
15 10220

Roger Vesey
15 1644

Recent Retirees

New Mexico *photos by Michelle Fleming*
California *photos by Randy Wong*

Johnny Ruybal
35 5403

Carla Chirigos
34 10620

Linda Scott
32 2134

Manny Trujillo
31 1833

Rolando Serna
30 4848

Mary Akins
30 2144

Jimmie Akins
29 9336

David Swahlan
30 6630

Bob Franssen
29 8326

Suzi Jensen
26 10627

W. Larry King
26 6012

Dale Shamblin
26 1535

Cynthia Richards
23 8511

Paula Provencio
22 1111

Duane Sunnarborg
22 8362

Valene Begano
21 10667

Mary Girven
21 9512

Peggy Warner
15 9532

Retirements

Retiring and not seen in the *Lab News* pictures:
Lisa Polito (10664), 31 years; and Belinda Tafoya-Porras (421), 29 years.

Changes coming to how Labs retirees, vested former employees can work on contract for Sandia

By Karyn Scott

Two procedures related to the contract relationship options between Sandia and retirees and former vested employees have been updated as part of continuing efforts to align the Labs' corporate procedures with requirements and best practice.

These changes highlight the importance for leaders to undertake appropriate/effective succession planning as the Labs responds to legal authority that has recently become clearer concerning the pension risks associated with employers using the services of retirees. These changes to Sandia procedures will become effective Jan. 1, 2011, and will impact such things as the number of hours per year that retirees and vested former employees can work, as well as the types of services that these individuals can provide.

Additionally, these changes will apply to all types of arrangements and contracts for services, whether the work is on-site or off-site.

At right is a comparison of the current procedure versus the new procedure for how Sandia retirees and vested former employees can work on contract for Sandia.

* * *

For additional information, visit the Change@Sandia website, or call Kim Goodrich in Human Resources (505-845-7150), Sharon Ortiz in Human Resources (505-845-0325), Alfred Romo in Supply Chain Management (505-844-3107), or Amber Romero in Supply Chain Management (505-284-0634).

Current procedure	New procedure effective Jan. 1, 2011
Retirees/vested former employees may work up to 600 hours in a rolling 12-month period (those in the Emeritus Program may work up to 800 hours/year).	Retirees/vested former employees may work up to 400 hours, whether paid or unpaid, in a rolling 12-month period, including those in the Emeritus Program.
Retirees/vested former employees' contracts are limited to two years (those in the Emeritus Program are excluded from this limit).	No time limit for retirees/vested former employees' contracts, including those in the Emeritus Program. (However, those on staff augmentation contracts are limited to three years).
Retirees/vested former employees must take at least a 90-day break in service between terminating employment with Sandia and becoming a contractor for Sandia.	Retirees/vested former employees must take at least a six-month break in service between terminating employment with Sandia and becoming a contractor for Sandia.
Employees retiring and vested employees terminating are not asked to sign a certification attesting that they do not have a "pre-arrangement" to perform services for Sandia.	During the exit process, employees retiring and vested employees terminating will be asked to sign a certification attesting that they do not have a "pre-arrangement" to perform services for Sandia (either by contract with Sandia or through a Sandia subcontractor) after their separation from employment. Those unable or unwilling to do so will be advised that no authorization existed for any such earlier pre-arrangement, and it is void. Any later requests for utilizing their services will be subject to close scrutiny and must not be related to any earlier pre-arrangement.
No service limitations for retirees/vested former employees who are contractors for Sandia.	Services provided by contractors who are Sandia retirees or vested former employees will be limited to: • Formal peer review with defined scope and deliverables (typically to review research, LDRD proposals, and/or SAND reports or journal articles prior to publication to assess, as appropriate, the purpose, quality, correctness, originality, reproducibility, likelihood of success, citations [for appropriateness and completeness], and compliance with standards and procedures). Requires reviewer to have demonstrated significant and current expertise in the subject matter area. • Formal Red Team efforts • Formal advisory panels with a specified charter and membership • Legal case preparation and participation in legal proceedings (e.g., arbitrations, trials) • Mentoring of specifically identified individuals for a specific duration for the transfer of historical knowledge for specifically defined capabilities or processes pertinent to specific programs/projects

Bugs and lights popular as students get new shoes

Story by Iris Aboytes • Photos by Randy Montoya

Blonde curls framed his happy face as his brown eyes peeked through. Jordan was very specific. He would like a pair of Air Jordans. Jordan is a 9-year-old student from Armijo Elementary School who took part in Sandia's Shoes for Kids program recently.

The program was born more than 54 years ago when Sandia scientists decided to buy shoes for needy school children instead of exchanging Christmas cards and gifts. Albuquerque Public Schools officials identify the needy children. Last year, 500 school children received new shoes.

Jordan says he loves basketball and feels sure that a pair of Air Jordans will help him make more baskets.

His 6-year-old brother, Kahleel, wants to be a basketball player, too. He says he is getting a new pair of shoes because he has been a good kid. When asked what entails being a good kid, he replies, "I listen and follow the rules. I do my homework.

"Besides practicing baskets and dribbling I have to eat fruits and vegetables. My dad says I also have to drink eight glasses of water a day. I want to be like Kobe Bryant. I am also already running track. It is called training."

Angel does not want sneakers. She wants high heels. "High heels?" I ask. "Don't you want to get a pair of shoes you can jump and run in?" She looks at me with a "duh" look on her face. She finally settles for a pair of patent leather high-heel boots.

Six-year-old John wants a pair of shoes with bugs. "With bugs?" I ask. He is referring to a pair of shoes that has bugs on the box.

Five-year-old Heather wants the shoes that glow. "They are fun," she says. "When I walk they light up. They are good shoes."

Nine-year-old Antonio needs to get shoes because his are ripping. Eight-year- old Kenneth says he has to get new shoes because his are falling apart and he wants to make sure the snow does not get in. "See the little strings," he says.

One by one, each child is fitted with a pair of shoes. The boxes are carried to the register to be paid for by the generosity of Sandians. The boxes contain not just the pair of shoes, but the excitement and anticipation held in the heart of each child.

Last year, Sandians contributed more than $13,000 to the program. Shoes are fitted on Tuesday and Thursday each week until February, except for the holiday break.

Community Involvement Dept. 3652 coordinates the fittings. If you would like more information about the program or would like to participate in the shoe fittings, contact Patty Zamora at 844-2146. Contributions are received by the Sandia National Laboratories Credit Union to Account # 223180,90-01 lastname=shoes.