NEWSLINE

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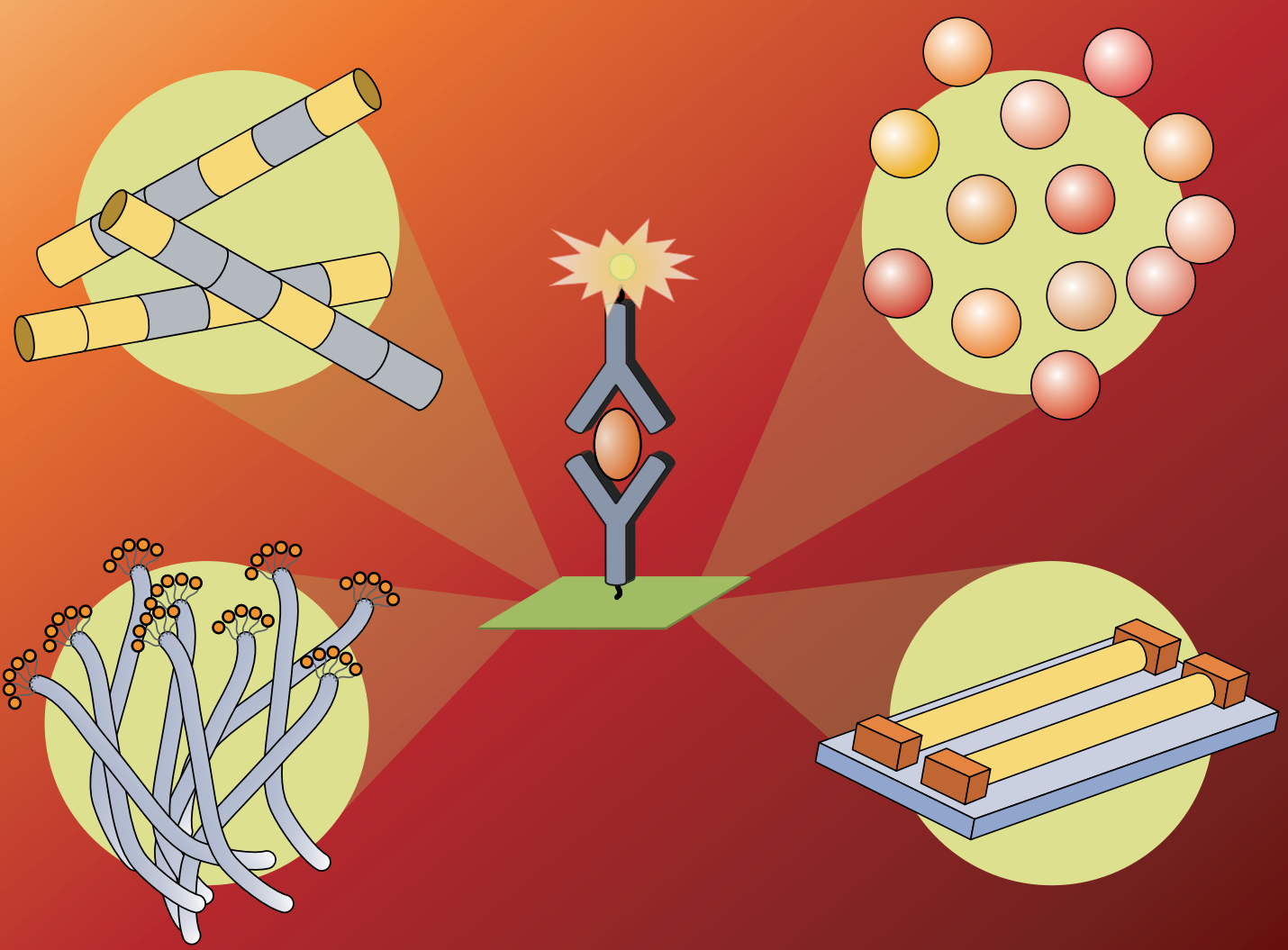
Biodetection: Different strategies



What's INSIDE

LAB NEWS

‘Spring ahead’ shouldn’t scare the daylight out of you

By David Schwoegler

Congress has moved up the start of daylight savings time for 2007. So according to the traditional mnemonic, it’s time to “spring ahead”— except it will still be winter. This year clocks should be moved forward early on Sunday morning, March 11. On that date, as the time approaches 2 a.m., it will suddenly become 3 a.m.

This date change presents a double-whammy. Computers and electronic devices with imbedded programming set to adjust the time automatically on April 1 — the traditional date — must be reprogrammed, or “patched” to change three weeks earlier. That same change must not allow the system to spring forward a second time when April 1 arrives.

According to Chief Cyber-Security Officer, Mark Graff, “This will be a microcosm of the adjustments made for Y2K. We have done our best to apply patches to all of our systems. Employees should expect no major computer problems at the Lab, but there may be some minor issues. Log discontinuities can occur, because an hour passes during which absolutely nothing happens, so there’s nothing to log.

“From a computer perspective, moving the clock forward is no big deal: Just add an hour. Moving time backwards can cause strange results for some applications. For example, an application that calculates the event duration may turn up an event that ends before it starts. But that’s not the case we’re facing today,” Graff said.

Along those lines, users with time-critical applications, such as time-stamped data collection, should contact their system administrators prior to March 11, to make sure their systems have been patched, Graff advises.

If a computer user’s connection or activity spans the time-change period, he or she can experience log-outs or time-outs, because an hour will be automatically added to the period in question. So connectivity session can suddenly expire or time out. For example, Graff says, “The theoretical longest unbroken session will be reduced automatically from 12 hours to 11 hours on that day. But fortunately, few off-site users are logged on to Lab systems at 2 a.m. on Sunday.”

According to Chief Information Officer Ken Neves, “The Lab’s computer network support team will exercise due diligence to assure that the firewall and related critical services will function properly. We’ve already attended to the firewall, remote access, as well as to institutional services and applications — like Meeting Maker — and we foresee no major problems. But contact your local computer support or 4help if something odd should come up.”

In addition, it is recommended that those few who attend to time critical applications in their work, talk to their system administrators if they feel there may be some issues related to the time change.

Finally, according to Rick Certo of the Security Department, all the Tessa Locks on site already have been patched with the new daylight savings date. So with all these pieces in place, we should spring back to normal shortly after we spring ahead on March 11.

NPR’s Mike Shuster discusses the Middle East

By Stephen Wampler
Newsline staff writer

According to a veteran National Public Radio (NPR) reporter, the war in Iraq will eventually be decided between the Shiites and the Sunnis, and the Shiites are likely to win because they are the strongest.

Mike Shuster, an NPR reporter for 27 years and roving foreign correspondent for the past 17 years, offered some of his assessments and wide-ranging experiences as a Middle East correspondent during a Tuesday Center for Global Security Research presentation.

Shuster has visited Iran seven times in the past three years. He has covered the Israeli-Hezbollah conflict of the summer of 2006, the Iraq invasion of April 2003, the removal of the Taliban in Afghanistan in October 2001, the fall of the Berlin Wall and the break-up of the Soviet Union, among other stories.

“There will be a winner in this war and I think when the Sunnis see clearly that they’re going to lose, they’ll cut their losses,” Shuster said.

“This is the nature of conflict in some parts of the world. People fight, fight, fight and when they know they’re going to lose, they cut their losses and strike a deal.”

While Shuster expects there will always be a fight in Iraq over oil resources, he said he believes the different religious and ethnic groups will eventually work out an oil revenue sharing arrangement.

Shuster sees Kurdistan and the Kurdish people as a force for stability in Iraq, even though they are highly autonomous.

“All of Kurdistan has been safe and prosperous since 1991,” he said. “I don’t see the Kurds wanting to upset that. They have an army of their own and I don’t see a Sunni insurgency or Shiite militia strong enough to take on the Kurds’ army.

“Neither the Sunnis nor the Shiites want to interfere with Kurdistan. I think they would like the Kurds to be at one time or another allies of theirs. I don’t believe the Kurds want to see an actual breakup and partition of Iraq. They’ve had it good since 1991 and they want to retain the status quo,” the NPR reporter added.

Shuster, who went to Iraq twice while Saddam Hussein was in power, served as a unilateral (or non-embedded) reporter behind American lines in the early days of the invasion in April 2003.

He recalls being astounded at what he saw in the city of Najaf. “Everything was in a state of disrepair. This was not war damage; this was a city that was only half-built.”

The veteran radio reporter spoke for about 20 minutes, particularly focusing on the misperceptions that led to the Israeli invasion of Lebanon during the summer last year.

According to Shuster, when a Hezbollah patrol killed several Israeli soldiers and seized others, Israel reacted to those actions as if they were part of the war on terrorism. On the other hand, Hezbollah saw the Israeli incursion into Lebanon to destroy missile batteries and quell attacks against Israeli cities as yet another stage in the Arab-Israeli conflict, Shuster said.

Shuster noted that Lebanese Hezbollah leader Hassan Nasrallah has stated that if he had known that Israel was going to launch its bombing attacks and invasion, he wouldn’t have seized the Israeli soldiers.

“Both sides were hurting and snapped up the cease-fire. I had no doubt the cease-fire would hold. I don’t think either side wants to renew this conflict right away.”

On Iran, Shuster stated that in his view the Iranian government is not monolithic. “There are multiple power centers. There are different political processes and the public has some influence.”

He indicated that he doesn’t believe the Iranian government has told “the whole truth about their nuclear program.”

Shuster called the Iranian government’s economic policies “awful.” He noted that gasoline costs about 40 cents per gallon in Iran and that the nation imports about 40 percent of their gasoline at $5 to $6 per gallon.

“The Iranian public is consuming gas like there’s no tomorrow. The streets of every Iranian city are clogged with traffic.”

SCIENCE NEWS

Journal looks at Lab-developed biodtection technology

By Anne M. Stark
Newsline staff writer

In an effort to detect biological threats quickly and accurately, a number of detection technologies have been developed.

Researchers from Lawrence Livermore National Laboratory review several of the latest technologies in the most recent issue (Issue 3, 2007), of the British journal *The Analyst*, which appears online at http://www.rsc.org/Publishing/Journals/AN/Article.asp?Type=CurrentIssue.

"It's important to provide a summary of the latest technologies and approaches for sensing systems and platforms that could lead to bioagent detectors for responders to use in the field," said LLNL's lead author Jeffrey Tok. Other authors include Nicholas Fischer and Theodore Tarasow of LLNL's BioSecurity and Nanosciences Laboratory.

One technique, previously described by Tok and colleagues, involves using a barcode system, similar to the barcodes used on retail products, to detect biological agents in the field. Nanowires built from sub-micrometer layers of different metals, including gold, silver and nickel, are able to act as "barcodes" for detecting a variety of pathogens, such as anthrax, smallpox, ricin and botulinum toxin. The approach could simultaneously identify multiple pathogens via their unique fluorescent characteristics.

Another detection strategy involves the development of electrical current-based readout of the nanowires for protein and virus sensing. The wires are arranged as field-effect transistors (FETs), where slight variations at the surface produce a change in conductivity. Developers of this technology predict that a high-density nanowire-circuit array geared toward pathogen detection could be built on a large scale suitable for biosecurity surveillance.

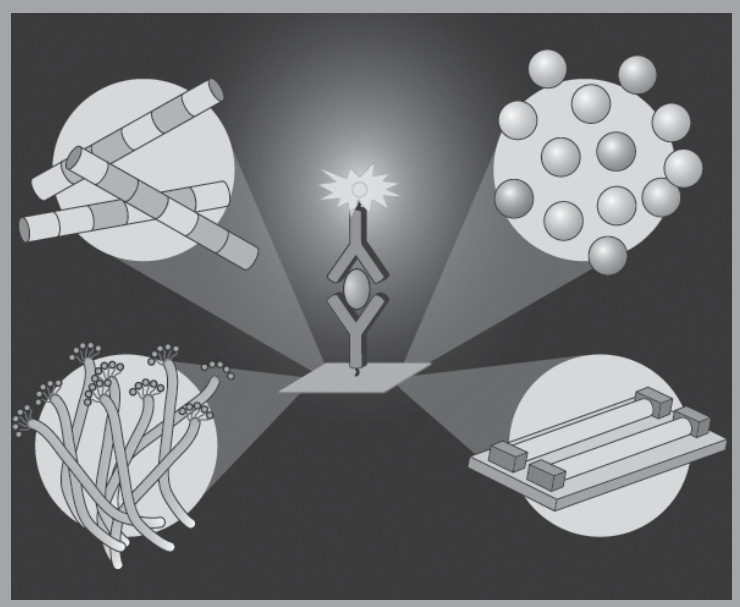
Physical, chemical and optical properties that can be tuned to detect a particular bioagent are key to microbead-based immunoassay sensing systems. A unique spectral signature or fingerprint can be tied to each type of bead. Beads have been joined with antibodies to specific biowarfare agents. This method has been demonstrated in the Autonomous Pathogen Detection System (APDS), a technology developed by Lawrence Livermore researchers. APDS contains an aerosol collector to constantly "inhale" particles from its surrounding environment for analysis.

Microarray-based immunoassay sensing approaches can be used to detect bacteria, such as the *E. coli* recently found in spinach and other fresh-packed greens. This approach can differentiate pathogens from harmless bacteria. In an analogous technique called aptamer microarray, short single strand chains of DNA (less than 100 nucleotides) are developed that bind to target molecules and fold into complex structures. The folding event results in an easy-to-read electrical charge. This binding-induced signaling strategy is particularly well suited for sensing in complex samples.

In a whole-cell-based immunoassay sensing system, an engineered B lymphocyte cell in which both pathogen-sensing membrane-bound antibodies and an associated light-emitting reporting system are all expressed *in vivo*. The B lymphocyte cell-based sensing system, termed CANARY, centers on an easily expressed calcium-sensitive bioluminescent protein from the jellyfish. When exposed to targeted biowarfare compounds, an increase in photons was observed within the the B lymphocyte cells in a matter of seconds. The photon changes can then be easily detected using an inexpensive optical system.

"The ability to miniaturize and adapt traditional bench-top immunoassay protocols to a fully automated micro- or nano-fluidic chip holds tremendous promise to enable multiplex, efficient, cost-effective and accurate pathogen sensing systems for both biodefense and medical applications," Tok said.

ON THE COVER



Rapid and efficient sensors are essential for effective defense against the emerging threat of bioterrorism and biological warfare. Recent advances in immunosensing platforms that are relevant to pathogen detection include (upper left) multi-metallic striped nanorods, (upper right) dyes-containing microbeads, (bottom left) whole organisms and (bottom right) nanowire field effect transistors (FET).

'Science on Saturday' kicks off with star power

The Lab's popular lecture series "Science on Saturday" is back for another exciting season and runs from March 3 through March 31. Kicking off the Tri-Valley series on Saturday is "The National Ignition Facility: Making Star Power on Earth," presented by Ed Moses, Richard Sawicki, and Chris Ebbers of LLNL and Dan Burns, teacher at Los Gatos High School.

The first 500 students attending this presentation will receive a special Science on Saturday teaching tool.

All lectures are held at the Amador Theater, 1155 Santa Rita Road, Pleasanton. Two presentations will be offered on each Saturday – 9:30 a.m. and 11:15 a.m. Seating is on a first-come, first-served basis and there is no pre-registration. Admission is free of charge.

The five-week series of lectures and demonstrations is targeted at middle and high school students. Topics are selected from the forefront of science and technology research in a variety of disciplines.

Presentations are aligned with the California Science Standards and are sponsored by LLNL's Science and Technology Education Program.

Lectures are videotaped and can be viewed on UCTV. For a schedule, go to http://education.llnl.gov/sos/. Teachers attending the presentation will receive a copy of the PowerPoint slides used in the lecture and a DVD with the movie from the talk.

For more information about Science on Saturday, directions and a map, go to the Web at http://education.llnl.gov/sos/.

2007 Science on Saturday:

March 3 —The National Ignition Facility: Making Star Power on Earth

March 10 — Comets and the Stardust Mission: What's in Our Solar System's Freezer?

March 17— Carbon Dating: Its Modern Applications in Biomedicine

March 24 — Energy Crisis: Will Technology Save Us?

March 31 — Driving a Rocket Fueled Car: 500 Miles at 400 Degrees Below Zero

THE LAB at AAAS 2007

AAAS panel discusses future of nuclear weapons

By Lynda Seaver
Newsline staff writer

While Energy and Defense department officials remain confident that the Stockpile Stewardship Program is working, it is only prudent to examine options to manage risks, address any uncertainties and ensure the nation's security needs are met.

This was the consensus of a panel of nuclear weapons experts assembled for a discussion on the future of nuclear weapons during the annual gathering of the American Association for the Advancement of Science. The panel discussion, held over President's Day weekend in San Francisco, discussed both the success of the Stockpile Stewardship Program — the effort to ensure the nuclear stockpile remains safe and secure in the absence of nuclear testing — as well as the need for remaking the U.S. arsenal with more durable weapons.

Panelists included moderator and UC Berkeley Professor Raymond Jeanloz; Bruce Tarter, director emeritus of LLNL; John Harvey, National Nuclear Security Administration director of policy planning; and Gen. James Cartwright, commander of the U.S. Strategic Command.

"If the policy is to have nuclear weapons, the policy ought to be to make them as secure and safe as possible," said Cartwright.

Much of the panel discussion centered on the reliable replacement warhead (RRW), a plan to modernize nuclear weapons. Through RRW, the United States also could move to a more efficient and less costly complex of laboratories and production facilities, Harvey said.

"The stockpile stewardship program is working," Harvey emphasized, but "we see increased risks in the current complex.

"To meet its security needs, the United States needs a reliable deterrent. RRW will transform the complex and lead to enhanced safety and security," Harvey added.

Both Lawrence Livermore and Los Alamos were asked to submit designs for RRW last year; selection of a final design and lead laboratory are still under discussion.

Cartwright and Harvey see RRW as a way to manage today's more diversified national security threats.

During the Cold War, "We could use the large inventory (of nuclear weapons) to prevent surprise attack and manage risk," Cartwright explained. "We need a new method to manage threats and prevent the quick strike. We need to use 21st century technology."

Tarter, the third panelist to present at the discussion, acknowledged RRW as a current hot topic for debate. But as chair of a special AAAS committee convened to assess whether RRW would alleviate risks in stockpile stewardship, Tarter summed up it is still too early to tell what combination of approaches is best.

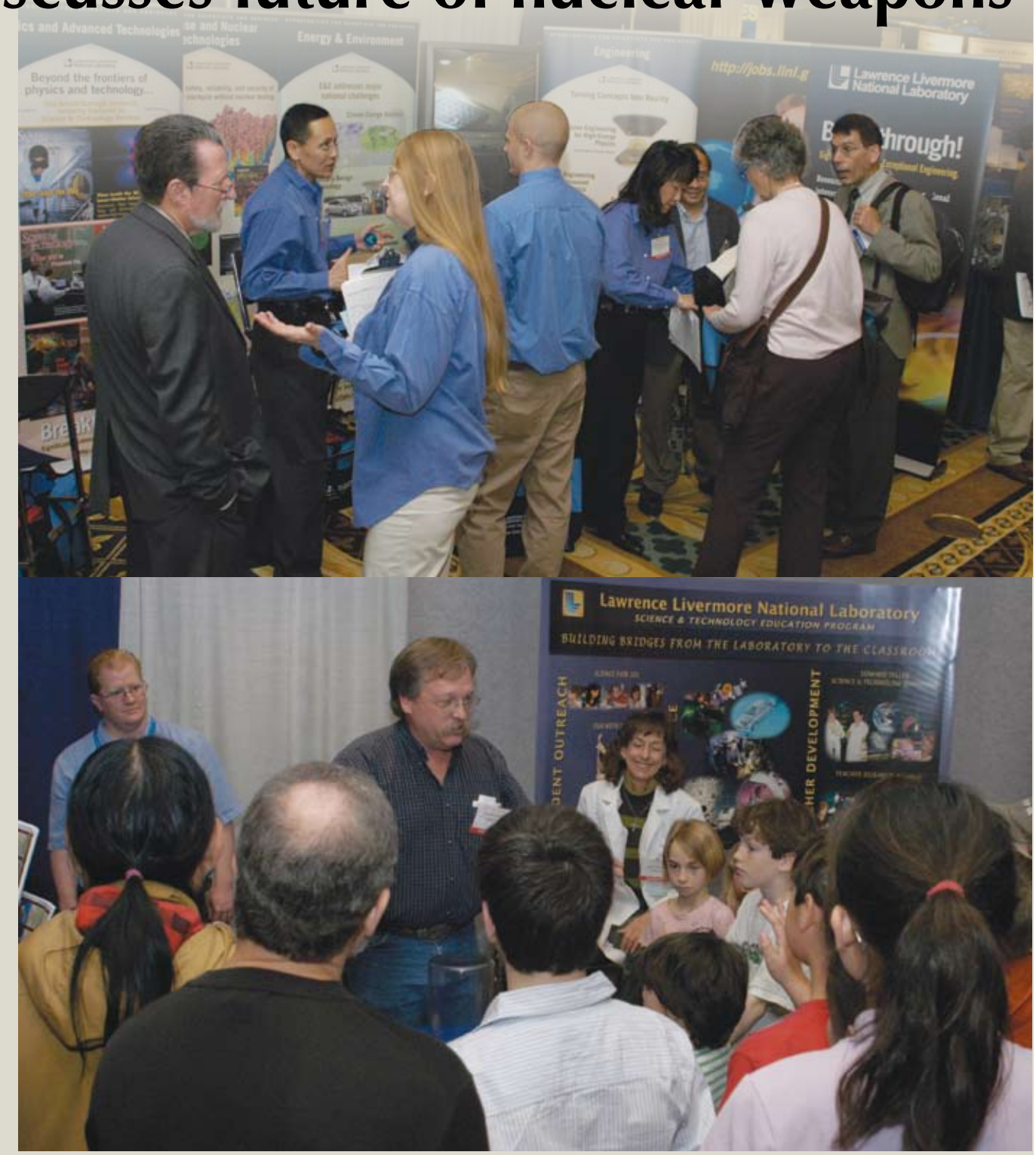
Tarter's committee — made up of nuclear weapons experts that include previous laboratory directors, DOE senior managers and university faculty and staff — has produced an interim report that acknowledges several risks in the current Stockpile Stewardship Program. These include problems caused by aging of the weapons that are well beyond their planned "shelf life," as well as the ability to maintain a trained and knowledgeable staff beyond the Cold War era of nuclear testing.

But the committee focused on the production complex as the area for greatest concern. In particular, the next two decades would require plant modernizations, life extensions of current warheads, and potentially building RRWs all taking place simultaneously, and as yet there are no numbers for the predicted cost, scope and schedule of the work. The committee also called for a transparent national policy on nuclear weapons, including statements on stockpile size, nuclear testing, and nonproliferation.

But Tarter also cautioned that RRW should not be discounted. Whether it is a stockpile managed of all or mostly legacy warheads, or one that is all or mostly RRWs, "it is difficult today to foresee all the pros and cons," Tarter explained.

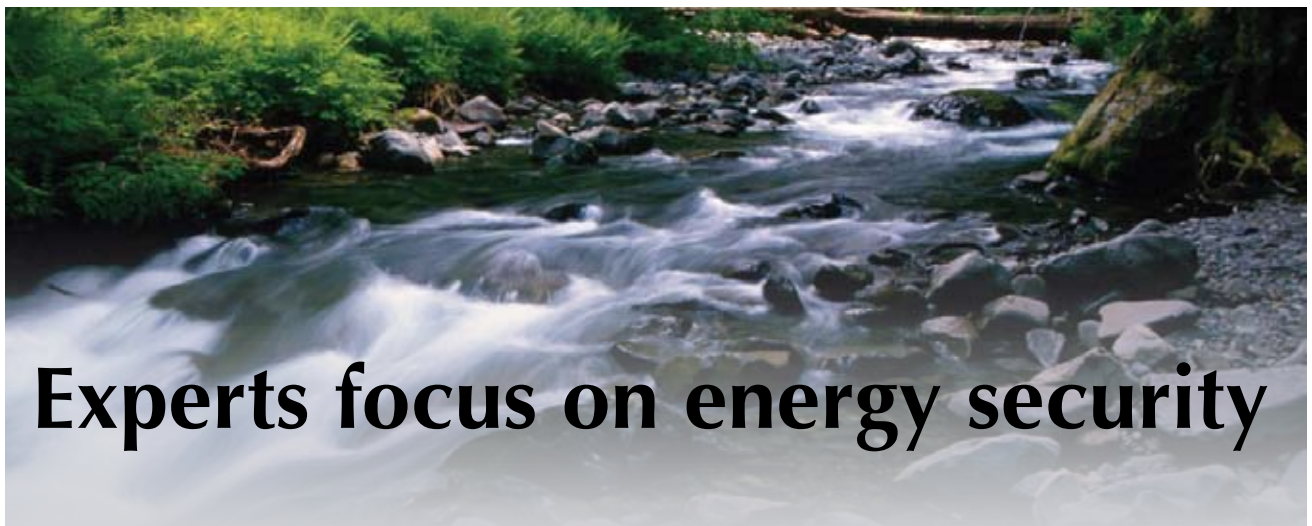
"But pursuing the initial phases of this path would be a prudent hedge against the uncertainties of an all legacy future, and an opportunity that might result in a better long term posture," Tarter summed up. "The crucial thing is to continually re-evaluate the risks and benefits — technical, programmatic, and political — and adapt accordingly."

The final AAAS report is expected to be released in the spring.



Above: The Lab's booth at the 2007 AAAS conference in San Francisco. Below: Dan Nelson demonstrates "Air Pressure" at the weekend Family Science Days event.

THE LAB at AAAS 2007



Experts focus on energy security

By Anne M. Stark
Newsline staff writer

If nations become more energy efficient and work to cut carbon dioxide emissions, the energy security issue will be solved.

"Climate change will cause security problems as people run out of water and food," said Jane Long, associate director for Energy and Environment, as she led a panel discussion on energy and climate security at the recent annual meeting of the American Association for the Advancement of Science. "Energy efficiency is where you start…Climate change is not just an energy problem, it is also a security problem. But, fixing the climate problem will go a long way towards fixing the energy security problem. We need to make deliberate choices to reduce greenhouse gases for the sake of my unborn grandchildren."

Long called on environmentalists, economic vitality groups and energy security groups to share their perspectives and work together to solve the energy problem.

She said energy efficiency and conservation meet the needs of all three constituencies by reducing oil imports, lowering emissions and increasing energy security. For example, new technology such as hybrid autos and renewable energy reduce emissions, stimulate the economy through jobs and manufacturing and increase security.

The recent Intergovernmental Panel on Climate Change (IPCC) report concludes: "Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years. The global increases in carbon dioxide concentration are due primarily to fossil fuel use and land-use change, while those of methane and nitrous oxide are primarily due to agriculture."

During the "Energy or Climate Security: Do We Have to Choose?" AAAS session, researchers said the report is conservative and that climate can contribute to severe ice cap melts, sea level rise and more intense hurricanes.

At the session, several energy experts led discussions on alternative energy, the future of coal, risks of transitioning away from oil and controlling carbon in the U.S. electric sector.

Per Peterson of UC Berkley discussed the impact nuclear power will have on climate and security. He said that while nuclear power was not attractive 25 years ago in the wake of the Three Mile Island and Chernobyl meltdowns, there have been major improvements in the nuclear energy sector.

"Nuclear energy can dominantly displace coal," he said. In addition to emitting no greenhouse gases in its production, "nuclear power can produce electricity at a very low cost." And by putting export controls in place, nuclear power can be a secure source of electricity.

As for waste, Peterson said: "The license application for Yucca Mountain needs to be completed, but we don't have to rush to build it." He said further studies on geological storage need to be investigated before spent fuel rods are stored underground.

Ernest Monitz, director of the Massachusetts Institute of Technology's energy initiative, said the United States is a long way from ridding itself of its addiction to coal.

"Coal is cheap and abundant and broadly geographically distributed," he said. "Carbon capture sequestration is a major enabler for coal in this world."

Monitz said coal plants need to add carbon capture and sequestration technologies to their designs. Coal plants are one of the largest producers of greenhouse gases. He said a 10-15 year demonstration project needs to be in place to work out regulatory issues.

"When you introduce a new technology, it takes a long time for people to get used to it," he said. "If we want to do carbon capture sequestration, we better get on with major field tests at large scales."

David Keith of the University of Calgary said carbon capture and sequestration in coal plants is already working in several full-scale projects around the world, including one in Australia.

"What you need is a single industrial proponent who really wants to make it work," he said.

Jay Apt of Carnegie Mellon University discussed how carbon needs to be controlled in the U.S. electric sector. By 2000, the United States was responsible for 26 percent of the anthropogenic (human-induced) carbon dioxide in the atmosphere. By 2025, there will be a 40 percent growth demand in electricity and only 28 percent of the electricity generators in the country use low-carbon technologies.

At those rates, Apt said, the system needs to change. "If society wants to do something, they have to deal with these facts. We could decarbonize in 50 years."

CGSR's Vergino talks about Lab Asian initiatives

On Feb. 17, Eileen Vergino, the deputy director of the Lab's Center for Global Security Research (CGSR) and the program leader for International Engagement in the NP Division of the Nonproliferation, Homeland and International Security (NHI) directorate, described two regional initiatives that the Laboratory and its partners have undertaken in the Caucasus and Central Asia.

The projects, called the Caucasus Seismic Information Network (CauSIN) and the Central Asia Seismic Risk Initiative (CASRI), seek to develop indigenous scientific expertise to mitigate damage from future earthquakes. These efforts are part of the International Engagement program in the NHI directorate.

The CauSIN initiative encompasses Armenia, Azerbaijan and Georgia, while the CASRI effort includes the nations of Krygyzstan, Uzbekhistan, Kazakhstan and Tajikistan. These countries, which are home to emerging economies and more than 30 million people, have a long history of damaging earthquakes and do not have uniform building codes.

"The aim of our initiatives is to help these nations build their scientific expertise and work collaboratively to mitigate the impacts of future major earthquakes," Vergino said. "Seismic faults do not pay attention to national boundaries. We want to help the scientists and engineers from these nations to work together and apply their expertise to serve their governments."

Working with the Laboratory are the Massachusetts Institute of Technology, Boston College, Vermont-based New England Research, the European Union nations of Greece, France and Italy and NATO partner Turkey.

Funding for the initiatives comes from the U.S. departments of Energy and State as well as the European Union.

Each nation chooses what portions of its infrastructure it will focus its efforts on in order to mitigate the impacts of future damaging earthquakes. For example, in Armenia, the government has selected schools and a nuclear power plant for its work, Vergino said.

i.want ads

**Due to the high quantity of ads and space limitations, these want ads have been abbreviated.
For the complete ad listings, refer to the internal Website: http://www-r.llnl.gov/pao/news/wantads.html or for the latest pdf download and retiree information, see the external Website: http://www.llnl.gov/pao/employee/.
Date of ads: Approx. Feb. 14 to Feb. 21. Ads now appear on the Web for seven days.**

Automobiles

1967 Corvette stock steel wheels 4 ea $175. 925.455.0859

1973 Camaro For Sale $8200. Green, Automatic Sport Coupe 925-606-0309

1992 VW Passat $1,200. Good Cond. 925-447-8774

1994 Toyota Previa LE Minivan $3,300 OBO. Dark blue, 176,000 miles. Roof rack, trailer hitch. 925-784-2071

1995 Ford Thunderbird LX V8 $2,000 OBO 162K miles. 925-640-3561

1997 Dodge Ram 1500 4X4 $6000 /BO. 114,000+ mi. 209-521-8380

1998 Izusu Rodeo 50,240 miles V6 2 Wheel Drive $4,500. 925-449-5342

1999 Honda Civic Si $11,000 OBO 925-518-1129

1999 Lexus RX 300 $12,500 OBO 925-361-8688

2000 New Beetle $6488. GLS; 925-200-1155

2001 Lexus LS 430 $28,000 OBO. 59K mi, 925-639-3531

2003 Honda Accord $17,500. 32K miles. 209-914-8817

2004 Honda Odyssey $18,750 OBO. 209-239-7345

2004 Hyundai Santa Fe Sport Utility $10,000. Mileage: 49,850 4-Cyl. 2.4 Liter Automatic . 2WD 925-426-1450

2005 Toyota Prius $19,000. 26000 miles, Call before 7 p.m. 925-625-7972

215-45 17" triangle talon tires $175A set of 4 tires with only 3,000 miles. Tread level is 95 percent. Will only sell as a set of 4. 925-371-1093

1991 BMW535i $4000. Dark green, 5sp, Dynan chip.Very clean. 510-604-0320 or 510-339-2546

Cable-Type Snow Chains $25. Purchased for 2005 Honda Pilot. Will work on other size tires/wheels never used. 925-846-3653

Camaro wheels $75. mid 1080's Chev Camaro stock aluminum (Mag type) wheels. 4 each with tires. 15 " diameter. 925.455.0859

2005 Honda S2000 Convertible $25,000, under 3,000 miles, original owner. 925 784-6027

Mag wheels $175 each 15" x 9" wide American Torque Thrust Aluminum wheels, 5 spoke, Ford bolt spacing. 925.455.0859

Three-way gas valve for auto or truck $15. Not propane. 925-735-6002

Bicycles

Bike Trailer-$2. 209-599-0922

Diamondback bicycle-$85. Mountain Bike, med size, as new, only used a few times. 925-552-6684

Road / off road bike $135. Ladies Diamond Back 10 speed combo bicycle. Used very little. 925-455-0859

Road bike $150. Schwinn Voyager men's 12 speed, 25" frame, used very little. 925-455-0859

Boats

12' aluminum boat $650 firmsea king 12' aluminum boat with two motors. 209-239-7103

Alligator Pedal Boat $15 Inflatable pedal boat in the shape of an alligator. 925-648-0671

Boat for Sale $119,000. 39ft. Del Rey Motoryacht- 1988. 925-513-4488

Electronic Equipment

32" Mitsubishi T.V $150 OBO Color T.V. with built in ent. center. (209) 321-1903

Battery backup for PC $20 For PC Large unit .925-735-6002

Dell computer $30.,500 mgz, pentIII, cd, floppy,tower pc-needs added components. 925-735 6002

Gateway Desktop PC $45. Pentium III 800 Mhz, 64Mb pc-133 RAM, 10G hard drive. 925-337-5622

Hitachi 51" HDTV $400 OBO. 51" Rear Projection 1080i HDTV set. Perfect condition other than a green horizontal convergence problem. 925-294-1444

HP docking station $40. NC6000 HP laptop docking station. 925-648-0671

IPOD(10GB) and IPOD MINI (4GB) MINI: $100,4 GB, EXCELLENT condition IPOD: $125 1st generation in white, 10 GB, E-mail: nathanandstefanie@yahoo. com Phone: 650-714-1612

MP3 Player $35. Rio One MP3 player. 32mb 925-640-5469

Sony 50 disc CD changer $60 OBO. Model CDP-CX53. 925-294-5783

Giveaway

19" Sylvania F93 Monitor Color monitor 3 years old. 925-423-8324

21" Color Monitor You pick up. Weighs ~70 lbs. 510-581-9559

FREE CATS Healthy, neutered, indoor cats. Pictures available. 650-714-1612

Free gas lawnmower 925-606-6155

Red Bricks, you pickup. ~60. 925-443-5008

Twin Mattress Good cond. 925-447-2697

Household

3 Antique Oak Armoire Wardrobe Closets $350 each. Also an antique oak secretary w/ display hutch also at $350 OBO 209-606-6445

Barbie Electronic Guitar $25. pink guitar for child. 925-648-0671

Bookshelves Ladder Style $80 - Both are solid wood with a cherry stain. cash only please, you pick-up. 925-640-5469

CalKing Simmons box spring $85 OBO. 925-373-9276

Craftsman Work Bench $225 obo. Steel construciton. Wood laminate top. Three drawers and one cabinet space with door. 925-200-2543

Baby crib $100. 5-1 crib by Delta will include mattres. Asking $100 obo Also have blankets in a teddy bear design, asking $30 obo. 209-836-4169

Flat Panel TV Stand $180. Fits up to 60" flat panel TV. Black metal frame with smoke glass shelves. Bush brand. 925-420-5093

For Sale 4 year old Oak Dining Room set with Hutch and 8 chairs $850. Complete set with 2 leaves 6 standard chairs and 2 end chairs with arms. Hutch with 3 drawers 2 large bottom doors and 3 glass doors on top. Contact after 3pm weekdays or anytime weekends. 925-362-8796 or 925 980 0933

$400. Dining set. Probably 1920s or 1930s. Pine cottage style. Table, 6 chairs, buffet. Original hardware. 925-462-2197

$600. Dining room set, Mission Style by Bassett. Dining table has 2 leaves, 2 arm chairs, and 6 side chairs. Expands to 90" long with both leaves. A sideboard and small writing desk are also available. $600 for the table and chairs. Sideboard and desk are negotiable. 925-449-3488

Girl's Clothing 18mos - 2T for sale. Over 45 items to include shirts, pants, pajamas, skirts, clothing sets, sweaters, Sketchers size 6 shoes, brand new Tommy Hilfiger loafers in box size 6 (never worn). w/offer.209-833-7213

Glider rocking chair $85 OBO. cherry wood frame. 925-373-9276

Kolcraft Baby Bassinett $40. (925) 455-5693

Longaberger $15-$40. Longaberger baskets, Longaberger wrought iron end table, $40. 925-455-5985

Nursery Glider Chair w/ottoman $75 OBO. With ottoman. 209-321-1506

Oak Office Desk with Right Hand Return $450. Solid oak desk with right hand return. Must pick up .925-648-1866

Patio Set $400. 4 ft glass topped table. Painted wrought iron; tile on table base; glass has beveled edges. 2 arm chairs, 2 regular chairs. 925-640-1806

Refrigerator For Sale $85. GE Refrig, 23.5 cu ft. 925-552-6684

Sectional sofabed $100 OBO. sectional with queen-size sofabed. You pick up in Brentwood. 925-240-5930

Sleigh Bed $250. twin, whitewash finish. 925-443-5008

Teak Patio Set $50. Oval teak patio set. Includes six matching chairs with chair cushions. Needs some TLC, U-Haul, Livermore location. 925-373-9224

TWIN Comforter w/Bedskirt and Sham $25. complete set only. Cash only please. 925-640-5469

Washing Machine $30 OBO. Admiral, giant capacity, electric, It is about 8 years old. 209-914-2132

White Changing Table $75 OBO. White Sleigh Changing Table, 925-922-0772

Lost and Found

Lost diamond bracelet on Wednesday Feb 7. Please call me at 925-423-1827 or 925-803-9596.

Miscellaneous

Arc welder $100. Heavy duty, AC, stick, single phase 230 volt, 300 amp max. 925-455-0859

Batman Slip N Slide $10. New. 925-648-0671

Cherry Wood China Hutch $225 OBO. Good condition, glass doors, glass shelves, 2 interior lights. Make an offer. 925-964-0534

COACH purses Price negotiable. black and brown leather demi pouch $60 each or $100 for both. Small black leather hobo $60. 650-714-1612

Comforter - TWIN - w/Bedskirt, Shams & Panel Curtains $47. Emperor's Palace twin comforter for bed or daybed. Includes 1 sham, bedskirt and 2 84x84 panel curtains with 2 tiebacks. New, never used. Selling as a complete set only. 925-640-5469

Dinette Set $100. Oval table and four chairs. Table is 48 x 36 plus leaf. Woodgrain laminate top. Good condition. Very comfortable. 925-846-3653

Doll for sale $25. BARBIE, Millenium 2000 Collector Edition Doll. NEW. 925-606-6515

Drill Press & Vice $110. Drill Press and Machinists Vice, Delta, Benchtop, like new. 925-552-6684

Family Guy DVDs Seasons 1-3 $40 OBO. 925-294-5783

Go - Ped $400 OBO.excellent condition. 925- 449-3934.

Jewelry Organizer Trays $36 for all. I have 5. 925-640-5469

Large hand carved wooden Buddhas $99. 20-inch high wooden Buddha imported from Bali. Also have some larger ones if you are interested.209-606-6445

NORTHSTAR LIFT TICKETS $50 OBO. Medical problems can't ski this year. (925)376--0316

Rechargeable Drill Tool Kit $60. Durabuilt 19.2 rechargeable drill tool kit w/rolling storage box. Has recharge batteries, 210 drill accessories. 925-648-0671

Strait-Line Measuring Tape $20. Electronic, 300 feet range. 925-648-0671

Table saw & jointer $300. Craftsman 10" table saw with cast iron extentions and motor Craftsman 4" jointer 100.00 without motor. 209-239-7103

Walker $50. Like-new walker with push-down brake and basket. Blue Nova Ortho-Med Cruiser. 925-462-2197

Wheelbarrow $40. contractor type. 925-735-6002

Motorcycles

Honda XR100 Dirt bike $1,500 OBO. New tire,chain and rear sprocket. 209-832-8963

1988 HD Sportster $4,000. Sportster 883, Converted to 1200. 209-832-8963

2002 Honda XR 400 $3,500 Talk to Bob or Katie. 209-833-6202

2003 Polaris Predator ATV $4,000. paddle tires and 6 spare rims. 209-652-2680

2006 Harley-Davidson flhtcuse Screamin' Eagle Ultra Classic $30K. 209-815-1210

2002 Suzuki 1200S $3,800.925-606-6515

Musical Instruments

Antique Piano $2,500 OBO. Chickering studio upright piano, vintage 1903. 925-634-9973

Flute $450. Gemeinhardt Conservatory model. 925-462-2197

Baldwin 5'8" Baby Grand Piano. $11,000. 925-371-1854

Piano$50. Old upright piano. Needs tuning. You haul. 925-455-8662

Pets

Boxer Male $200. Purebread boxer, 2 years old Brindle.209-832-3914

Free cat to good home. Approximately 9 years old. 209-914-5292

Dog Crate $40. 925-420-5093

fish $30. larg ocar about 12in, mid size Cichlid Fish 6in+. is in tank with 3 other 12in oscars a 6in green terror 6in cichlid 7in suckerfish and 7in ell. 209-814-9491

KENYAN sand boa Price: $40 6 month old snake. Max length about 28 inches. Phone: 209-606-6445

Recreation Equipment

Airwalk snowboard boots $40. Size 8. Used three times only. 925-600-1817

Basketball Hoop $48. Hoop & Backboard w/post, Adjustable in good cond.925-552-6684

Electronic Dartboard $25.Halex electronic dartboard, Delta III, with electrolight scoring, 26 games with 82 level variations, high tech molded cabinet with graphite finish. 925-648-0671

Force One Kite Board $500. Like New. The board is rated for a rider up to 185 lbs. 209-334-1006

Jogging Stroller $20. CoPilot single child jogging Stroller. 16" wheels, blue and black. Good cond. 209-365-0412

3 foot Aluminium Keene Sluice boxes $20, 10-inch lexan Pans $5 each, 8-inch lexan Pans $4 each, 10-inch lexan Classifiers $5 each for GOLD Panning. 209-244-8241

Kemper 60" Snowboard with Bindings $50. 925-455-4484

Pool Table For Sale $250. Pool Table 7-foot with pockets. Sticks, brush, accessories all inclusive, like new. Call Lisa (209) 608-1351.

Ski package $200 OBO. Downhill skis + poles + boots. Vital S20 skis with Marker M28 bindings, size 180cm. Metric Classic ski poles, size 130cm. Nordica Next-87 boots, size 27, seldom used and in great shape. 925-200-2543

Skis $295. K2 Merlin VI skis w/Marker bindings; 178mm length, red/black; used exactly two days, new condition; too short for me. 925-443-3106

Station Recumbent Exercise Bike $50. 3 years old, small size. 209-914-2132

Underwater Camera System $3K NIKONOS RS Underwater Camera Body. NIKONOS 20-35 2,8 Underwater Lens. Two NIKONOS Underwater Strobe Flash units w/ mounts. Pelican pressurized case. 408-945-8128

Shared Housing

House to share in LIVERMORE, (MALE only) $650/mon Room for rent, fully furnished, color TV with satellite in room, high speed internet access, private full bath, quiet neighborhood just minutes from LLNL, built-in pool in back yard, only other occupant in house is female owner and her dog, laundry in garage, please call "Chris" at (925) 443-4417 for an interview. Applicant will need first month's rent plus $100 deposit. Utilites are included in the rent! Drive by the 3000 block of Kennedy St. to view neigborhood Phone: 925-455-6174

Room $300 Postdoc/student.14 x 14 room, private bath, large peaceful wilderness home. 15 min. from Lab. House sitting, plant watering, dog feeding in May. Summer-fall. No smoking, no pets. $300/mo.,$300 deposit. Phone: 925-447-066

Room for Rent $650 Furnished bedroom private bath. 4 miles to LLNL near bike path. Quiet safe neighborhood. Kitchen and laundry privledges, utilities, WIFI, pool, tennnis basketball court. Reside with one mellow lady and outdoor cat. Ride your bike to LLNL. Phone: 925 449-2620

Wanted; PostDoc or Student for Short Term Rental $700/mo I have a three bedroom two bath home in Danville and would like to rent one room to a student or post-doc. Room is available March 1. Room has large closet, queen bed and dresser. Although not attached, you would have your own bathroom. Close to Iron Horse Bike Trail, tennis, golf, and shopping. No pets, non smoker. 20-25 minutes to work. Phone: 925-968-1407

Trailers

'05 Trail Lite Camping Trailer - EXCELLENT CONDITION!Price: $21,500 28' camping trailer - barely used. one push out, sleeps six. Cable & satellite ready with space for DVD and aux boxes. AM/FM/CD Surround Sound, deluxe awning Stabilizer jacks, storage under bed, weight distribution with sway control hitch system included, microwave, heating/air, outdoor shower, outdoor gas hook up - portable gas grill (RVQ-grill included, large fridge, non-smoker, no pets, one owner. CALL FOR MORE INFORMATIONPhone: 209-835-8266

2000 Weekend Warrior 31' Fifth wheel Toy hauler Price: 18,000 Great condition, just don't use. Loaded,16.5 ft.Cargo space. Phone: 209-832-8963

2002 Fleetwood 32' Class A - ONLY 5,300 miles Price: $49,500 w/ Single Slide-out (11'6" x 32" depth). ONLY 5,300 miles... A perfect entry to mid-level motorhome that is practically NEW. NADA Guide has this unit between $46k and $53k...I am right the middle - for a top-end coach! Ford Triton 6.8L V-10 on Ford Chassis. ** Balance of Extended Warranty (2009 or 75k miles) (Buyer pays transfer fee)** Pictures available if you call. Phone: 925-212-2020

2003 28 ft BH Jayco Jay Flight Travel TrailerPrice: 10,500Excellent condition! Only 1,300 miles on it, Original Owner, Oak Cabinetry, Full Kitch., Top/Bottom Fridge, Vinyl and Carpeted Floors, Shower w/Tub, Outside Shower, Skylight, Queen Island Bed, Sofa and Dinette Sleeper, Bunk Beds, Slps 8, Leveling Jacks, TV/DVD, CD/Cassette Sound System, Cable Ready, Roof AC, Furnace, Awnings, Mini Blinds, Basement Stor., Stor. In Front and Rear, R-B-Que, Spare Tire, Lots Of Extras, No Pets, Non Smoker, Fully Loaded, Well Maintained and Ready To Sell! Phone: 925-371-6592

2004 Layton Skyline 28' Travel Trailer Price: $16,900 2004 Layton Skyline Travel trailer, M-2680. Trailer is 29' 8" and is very clean and in excellent condition. There is a 14' electric glide out which is about 3' deep providing lots of extra room. Options include AM/FM/CD player, TV antenna, stabilizer jacks, luggage rack, outside shower, power roof vent and spare tire and carrier. Standards options include microwave, awning, water heater and air conditioner. Price include equalizer hitch, water supply hose, wheel covers and chocks. Price is OBO.Phone: 925.292.9680

2006 Forest River Cherokee 5th wheel $24K OBO 31.5 feet long with two slides. Two full bedrooms, will sleep 9 people. Only used 5 times last year. Purchased brand new and in excellent condition. Still under full warranty until end of May this year. Pictures available if interested. Asking 24K OBO, have 5th wheel hitch to sell as wellPhone: 209-321-1506

Engine hoist $50, Cherry picker style. Jack needs to be rebuilt.Phone: 209-606-6445

Trucks

1998 DODGE RAM 1500 quadcab $11000 completely loaded: this truck was purchased from showroom floor, and has all the upgrades with professional lift, leather, infinity sound system with am/fm/cd/cassette, ac, power windows/locks, bedliner, nerf bars, toolbox. Please call me for photos. Phone: 925.876.5588

1999 Ford Truck $8,500 EXTRAS! A CREAM PUFF!!-WHITE Phone: 925-735-6002

2003 Chevy Silverado $24,000 Dark Gray. Low miles, 20" rims, air bag suspension, and custom stereo. Plus many more extras. Phone: 925-456-5681

2005 Dodge Truck $14,100.002005 Single cab 2WD, V8, automatic, silver, 17K miles, excellent condition, $14,200 oboPhone: 925 449-3934

Aluminum Mag Rims $175 OBO Four each 12.5 wide 15 tall aluminum mag rims in excellent condition, tires are bald. Phone: 925 449-3934

Camper Shell $150 Centry Camper Shell good condition - Black for 88 to 98 stepside Chevy or GMC. $150 obo 925 449-3934Phone: 925 449-3934

Wanted

5-drawer dresser for 3 yr old boys room-I am looking for a five-drawer dresser in good condition for my son's bedroom. He is 3 years old.Phone: (209) 482-8076

Dungeons and Dragons Players-Looking for people to play DnD (the tabletop game). Already have 3, looking for more! Beginners welcome!Phone: 925-556-9298

Looking for a stationary exercise bike please, preferably free or very low price. Trying to get in shape, but don't have a lot of extra cash to spend on a gym. Phone: 209-603-5840

Wanting to lease pasture land for pasturing cattle. 925-640-2782 Mike Phone: 925-443-3358

Moving Boxes - Need your unwanted cardboard moving boxes.Phone: 510-853-6728

Teacher needs donations: Local high school teacher needs computer speakers, laser printer (for printing overhead transparencies) and a TV with remote big enough for a classroom. Must be in good shape.Phone: (925)960-0263

The Wiggles tickets-I'm looking for 2 tickets to The Wiggles that are coming to Oakland or San Jose in March. Looking for tickets on the main level, closer to the stage the better. Phone: 925.876.5188

Looking for smaller side by side refrigerator freezer. Resonably priced $100 or less in very good conditionPhone: 925-449-8757

RETIREE'S CORNER

Edgar Peck (Defense Systems & Chemistry, 1993) and his wife, Janet, did some traveling during 2006. Edgar went on a week-long mission trip in March to Lake Charles, La. to help Katrina victims. In May, they attended their last class reunion at Hiram College in Ohio. They went on a two-week guided bus tour through Maine, Nova Scotia and the Canadian Maritimes in August. Janet continued as a volunteer tutor to first graders. Edgar returned to work with First Call Hospice. (Visit the Website www.llnlretirees.org for the full story).

In April 2006, Gus Carlson (Mechanical Engineering, 2000) and his wife Char celebrated their 20th wedding anniversary at the Pelican Inn, a 16th century inn now transplanted to Muir Beach, Calif. They really recommend it.

They also enjoyed four out-of-California trips in 2006. In March, they went whale-watching in Baja. In May/June, they went on a wonderful three-week self-directed tour of Alaska with friends Gail and Paul. In July, they went to Pennsylvania to visit family and enjoy a week with Gus' sister Dona and husband Den at Edinboro Lake, the location of many childhood vacation memories. In August, they spent a week in Kauai.

The LLNL Retirees' chemistry group, also known as the "other" ACS (Aging Chemists' Society) will have a no-host Chinese buffet luncheon on Monday, March 26, at 11:30 a.m. at the Willow Tree Restaurant, 6513 Regional Street, Dublin. Cost for the Buffet is $12, payable at the door. Spouses and friends are welcome. RSVP by March 19 with the number in your party by e-mail to Dick Ryon at dickryon@comcast.net or call him at 925-447-8907. Bring your scrapbooks, pictures, memories and stories new and old.

The March retirees' luncheon will be held on Wednesday, March 21, at the Elks Lodge in Livermore. The speaker will be Bob Kuckuck talking about his experiences at Los Alamos National Laboratory. Please make reservations by March 17 at the Website (www.llnlretirees.org).

The Travel Group meets the fourth Tuesday of each month January through June at 2 p.m. in the Livermore Police Community Room. The March 27 topic is: "Egypt: From Alexandria to Aswan" by Barbara Mallon. The April 24 meeting topic is: "Cambodia: Angkor and Beyond" by Steve Massey.

Send input to Jane or Gus Olson. E-Mail: AugustO@aol.com or JaneRubert@aol.com. Phone: (925) 443-4349. Address: 493 Joyce St., Livermore, CA 94550.

PEOPLE NEWS

IN MEMORIAM

Harris Fine

Harris S. Fine, a former Tracy farmer and retired employee of the Lab, died Feb. 11 at his home in Tracy. He was 87.

Born Aug. 1, 1919, in Elgin, Ore., Fine moved to Tracy with his parents, Frank and Grace Fine, in the early 1920s. He graduated in 1937 from Tracy High School, where he was an outstanding lineman on the football team and winner of the Peter B. Kyne Trophy as the team's most valuable player. Fine graduated from the College of the Pacific in 1942.

He served in the U.S. Army Air Corps during World War II. Upon returning to Tracy, he farmed with his father. In 1962, he began working at Site 300 as an explosives research technologist, retiring in 1988.

During his retirement, he enjoyed coaching his grandson's Little League baseball team. He also enjoyed fishing, golfing, investing, playing bridge and getting together with lifelong friends.

He was preceded in death in 1966 by his wife of 20 years, Lynn Fine.

He is survived by two daughters, Lynda Garabedian, and her husband, Glenn, and Jennifer Evans, and her husband, George Penley; a son, Jon Fine, and his wife, Beth; six grandchildren, and six great-grandchildren.

Services were private. The family requests memorial contributions in Fine's name be sent to the Hospice of San Joaquin, 3888 Pacific Ave., Stockton 95204-1953.

Robert Alexander Hughes

Robert Alexander Hughes, a Lab retiree, died Jan. 22 in Castro Valley.

He was 80.

Born Feb. 23 in Hilltop, W.Va., he graduated from DuBois High School in Mt. Hope, W.Va. On leaving the military at the end of World War II, he studied mathematics and physics at three universities: Duquesne, Western Reserve and Michigan, where he earned bachelor's and master's degrees in mathematics.

Upon graduation from Western Reserve, he was drafted to play in the NFL, but bypassed it to pursue higher education. In 1954, he moved to California to become a mathematical programmer and computer scientist at the Laboratory. Here, he was introduced to computing through work assignments on LLNL's large-scale application programs in mathematical physics, which were set up to run on the early UNIVAC, IBM 701 and IBM 704 computers. He was a member of LLNL's Computer Language Group. Hughes retired in 1988 after 34 years at the Lab.

He enjoyed golfing with the The Golden Gaters, where he served as secretary, building and fixing things around the house, researching his family tree and music.

Hughes is survived by this wife of 48 years, Barbara Jean Sneed; son Brent Alexander; daughter-in-law, Heidi Teresa; and four grandchildren.

Services were held in Hayward.

William Anthony Kloos

William Anthony Kloos, a Lab retiree and resident of Danville for 51 years, died Jan. 30.

A native of Spokane, Wash., Kloos was born May 25, 1921. He served in World War II in the Army Air Corps and retired from the U. S. Air Force Reserve after 23 years of service. He attended UC Berkeley where he met his wife, Verna Mayhood. He retired from the Lab in 1985 after 31 years as a mechanical engineering associate. In his retirement, he enjoyed farming his in-laws' fruit orchard in Suisun Valley. He also enjoyed skiing, wood-working, electric car design, automobile restoration, camping, the outdoors and travel.

Kloos is survived by his wife of 60 years, Verna; children, Bill, Mike, Vern and Jane and their spouses; seven grandchildren; and one great-grandchild.

Services were held in Danville. Donations may be made in his memory to St. Anthony's Kitchen, 121Golden Gate, San Francisco, CA. 94102 or American Precision Museum, 196 Main St, Windsor, VT. 05089.

Roger Ray

Roger Ray, a retired colonel in the U.S. Army, died Jan. 31 in Frederick, Md. Ray's military career included scientific staff roles with government institutions and national laboratories including LLNL.

Born in Yonkers, N.Y., on Feb. 26, 1922, Ray was the fifth and youngest child of Martin Hassett Ray (retired colonel, U.S. Army), and Josephine West Ray. Ray and his three brothers each received congressional appointments to the U.S. military academies at West Point or Annapolis. Ray attended West Point, graduating early to serve in World War II.

He earned a master's degree in aeronautical engineering at New York University in 1948, followed later by other specialized armed services studies.

He served in scientific staff roles with Los Alamos National Laboratory, LLNL, Feltman Research and Laboratory and NASA Laboratory at Cape Canaveral, Fla. He served as commanding officer of Picatinny Arsenal in Dover, N.J., and deputy manager for Nevada Operations for the Department of Energy.

After military retirement, Ray was responsible for all DOE programs and research activities related to past nuclear testing. He provided scientific, radiological and technical direction for the cleanup and rehabilitation of Enewetak Atoll in the Marshall Islands.

Ray is survived by his first wife of 30 years, Marilyn Boettcher and their four daughters, Kaaren Lynn and Mary Noel of Northern California; and Robin Elizabeth and Vivian Jeanne of Las Vegas, Nev. He is survived by his second wife of 23 years, Dorothy McVernon, four stepchildren, grandchildren and great-grandchildren.

Pete Stathis

Pete Stathis, who worked at the Lab for more than 30 years, died Jan. 31 in Reno due to complications from brain cancer. He was 59.

Stathis was born in Las Vegas and graduated from Cal Poly San Luis Obispo with a degree in electronic engineering. He worked in the Lab's Electronics Engineering Group at the Livermore site and at the Nevada Test Site.

Stathis was an amateur ham radio operator for more than 40 years, having built his first receiver as a young teenager. He moved to Winnemucca, Nev., in 2001. He enjoyed nature, the outdoors and country life.

He is survived by his wife of 30 years, Patricia.

NEWSLINE

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For an extended list of Lab beats and contacts, see http://www.llnl.gov/pao/contact/

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The 2007 African History Bowl winning team members from the Laboratory Services Directorate are (left) Justin Leon, Susan Battles, Michael Mosby, Desty Shoemaker and Jesse Pugh. Photo by Jacqueline McBride

African History Bowl title for Laboratory Services

The final round of the 3rd annual African History Bowl—the event that tests a team's ability to recall facts related to African and African-American history—took place this week, closing out this year's Black History Month activities.

For the second time in the history of the competition, the Laboratory Services Directorate (LSD) has won the battle of the buzzers. This year it faced teams from Safeguards and Security and the Director's Office. As the winning team, LSD is awarded one-year custody of the coveted "perpetual plaque" that will soon bear their names and photos alongside names of previous champions.

Hanif Nassor-Covington, the event's moderator, said the intent of the annual History Bowl is to spark conversation, enjoy competitive spirit and have fun. The event was sponsored by the Association of Black Laboratory Employees (ABLE) and the Work-Life Center. For more information, contact Nassor-Covington at 3-5487.

LLLWA to celebrate "Women's History Month"

March is Women's History Month. Help the Lawrence Livermore Lab Women's Association (LLLWA) celebrate its 35 years at the Lab by participating in the upcoming events.

March 8 LLLWA 35 Year Anniversary Reception
4-6 p.m., Bldg. 123, conference room A
Guest Speaker: Barbara Peterson, LLNL transition team manager.
Presentation of annual LLLWA scientific and administrative awards.
Complimentary refreshments will be served.

March 15 "Menopause...Hot Flashes, Hormones & Herbs"
Noon-1 p.m., Bldg. 361 auditorium
Co-sponsored by the Living Well Program, Health Center/EAP and Work-Life Center.

March 19-23 Bi-annual LLLWA Used Book Sale
10 a.m.-2 p.m. Trailer 4675 (Old Central Cafeteria), room E
The used book sale will support the Lab Women's Association scholarship program. Donations of books, CDs, videos and puzzles can be made at the following locations: Bldg.132 north lobby; Bldg 170 east lobby; Bldg. 361, room 1039; Bldg. 453 main lobby; Bldg. 111 main lobby; Bldg. 543 main lobby; Bldg. 551W lobby and Bldg. 663 Health Services lobby. In addition, volunteers are needed to help with sales, setup and cleanup. Volunteers who are interested in helping sort and set up the sale may come to Trailer 4675, room E (the old central cafeteria room near the lake) during the noon hour of the week preceding the sale, March 12-16. Also needed are paper shopping bags with handles. Contact Barbara Brooks, 3-4171, or Elizabeth Gebur, 4-3404, for more information or to volunteer.

March 27 Women's Association scholarship ceremony
Guest Speaker: Jan Tulk, associate director, Administration and Human Resources Directorate
Noon.-1 p.m. Bldg. 543 auditorium
Refreshments will be served.

For more information, contact Germaine Clark, 2-1135.

Temperatures plummeted earlier this week, blanketing the hills behind Livermore with snow.

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