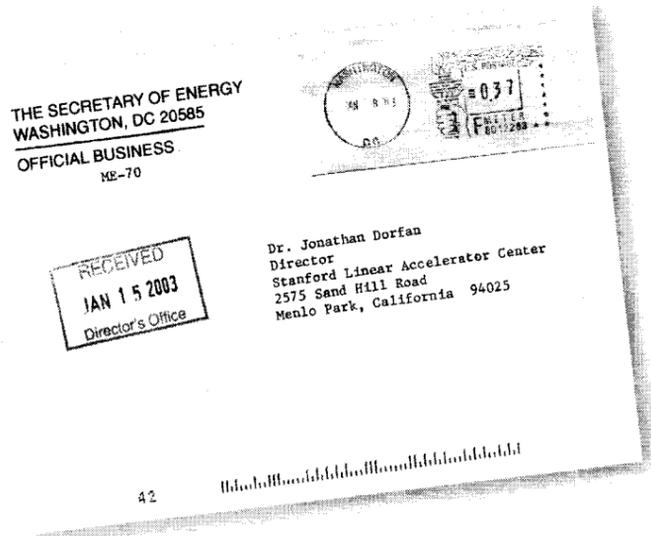


INTERACTION POINT



February 7, 2003

Secretary Abraham Sends a Warm Thank You for an Enjoyable Visit



THE SECRETARY OF ENERGY
WASHINGTON, D.C. 20585

January 7, 2003

Dr. Jonathan Dorfan
Director
Stanford Linear Accelerator Center
2575 Sand Hill Road
Menlo Park, California 94025

Dear Jonathan:

Just a short note to thank you for making my visit to the Stanford Linear Accelerator Center (SLAC) successful. I appreciated your kind introduction to the packed all-hands meeting that you and your staff put together. Also, your tour through the SLAC was extremely interesting and informative.

I am impressed with the operation of SLAC and its contribution to fundamental science and to advances in technology that have come from that fundamental science research.

Again, I appreciate the hard work of you and your staff. I look forward to a return visit.

Sincerely,

Spencer Abraham

House Science Committee Staff Visits SLAC



Members of the House Science Committee Staff, Gabe Rozsa, Tina Kaarsberg, Charlie Cook and Chris King, toured SSRL as part of their January 13 visit to SLAC. As an example of the kind of biological puzzles that can be examined with SSRL's technical capabilities, Linda Brinen (SSRL), far right, shows the visitors the molecular structure of the anthrax lethal factor.

The Green Gets a Needed Upgrade

By Shawna Williams

SLAC employees on their way to and from the Cafeteria may notice construction work on The Green over the next few months. The goal is to repair leaks in the irrigation system, "which cause a bog-type effect," said Liam Robinson, facilities support manager for Site Engineering and Maintenance (SEM).

"The area may not be usable for the next three months, but it will improve the usability for the next 10 or 20 years," Robinson said, adding that pedestrians should exercise caution on The Green in the next few months.

Planners are also exploring the possibility of planting a cork oak to

replace the one that died and was cut down. The irrigation repairs would make a new tree's survival more likely, since cork oak thrives in drier soil.

For more information on this project, contact: Liam Robinson (SEM), Ext. 2980, liam@slac.stanford.edu



Photo by Diana Rogers

Stan Namura (left) and Vicente Garnica look on as Angel Martinez digs an irrigation trench on The Green. All are employees of SLAC's landscaping contractor.

DOE's Oakland Office to Close by End of 2004, Operations Will Shift to New Service Center

By Neil Calder

The DOE recently announced that they will close the Oakland National Nuclear Security Administration (NNSA) Service Center as part of a reorganization. We sat down with John Muhlestein, head of DOE's Stanford Site Office, for more details on this upcoming change.

What has changed in the Department of Energy's organization in the Bay Area?

"On December 17, 2002, DOE's NNSA, which oversees the Bay Area's Lawrence Livermore National Laboratory and Sandia National Laboratories, implemented a new organizational structure, with Albuquerque becoming the main Service Center."

"This new structure will streamline operations and oversight while clarifying roles and responsibilities. A direct consequence of this reorganization is that the DOE's Oakland Service Center, which provides our Office of Science Stanford Site Office with a wide range of services, will close by the end of 2004."

How will these changes affect SLAC?

"SLAC staff should be reassured that there will be no sudden changes. We still expect to get support from the Oakland Service Center during the two years of transition.

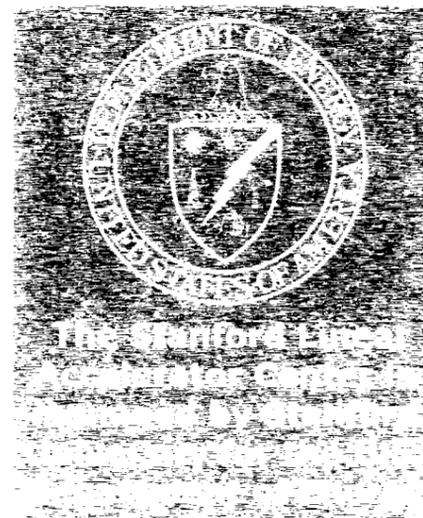
We do not yet know which center will take over responsibility for SLAC support, but it is business as



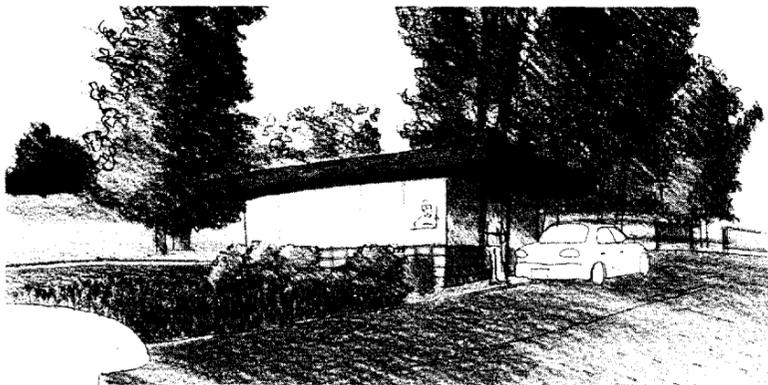
Photo by Diana Rogers

John Muhlestein, head of DOE's Office of Science Stanford Site Office.

usual until transition plans have been established and implementation of links with the new Service Center has begun. I will make sure that everyone at SLAC is kept fully informed of developments."



New Gate House to be Built at SLAC Main Gate



This design sketch shows the new Gate House for the SLAC Main Gate.

By Shawna Williams

Say goodbye to the old guard shack at SLAC's Main Gate. It will be torn down and replaced in the next few months.

"The guard house that's there now has a huge leak problem," explained Rick Yeager, Manager of Laboratory Safeguards/Security. "It's old, it's outdated, there are holes in the wall—it doesn't look nice."

The spacious new Main Gate House, in addition to being more comfortable and attractive, will allow for the installation of a modern fire alarm system that relays more information to firefighters.

Construction should begin on the new building in late February, around the time the current work on extending utilities to the new guest house will be completed. The building should take two to three months to complete. A temporary shack will be set up further down the hill from the current one, and traffic lanes at the main entrance will probably be narrower.

Yeager said hours at the Alpine Gate might be extended during the construction. Check the Web and posted signs for further information on Alpine Gate hours. ●

Sketch courtesy of Business Services Division

MFD & Klystron Departments Specialize in Hydrogen Brazing

By Kelley Ramsey

A particularly unique technology used in the Mechanical Fabrication (MFD) and Klystron and Microwave (KLY) departments is ultra-clean, high temperature hydrogen furnace brazing.

Hydrogen brazing is an essential assembly technique for joining components and assemblies for critical ultra high vacuum (UHV) systems such as klystrons and accelerator structures.

In hydrogen brazing, a metallurgical bond is achieved using a filler-metal having a lower melting point than the materials being joined. One of the primary benefits of brazing is that the mating surfaces form a complete metallurgical joint. When heated in the pure hydrogen atmosphere, the filler-metal melts, wets the surfaces to be joined, and is drawn between the mating surfaces by capillary action. The result is a high quality, permanent metallurgical seal.

With other joining techniques such as welding or mechanical seals, unbounded mating surfaces can trap contaminants, are difficult to out-gas and can cause problems with UHV systems. In addition, the high temperature pure hydrogen brazing atmosphere has powerful cleaning effects. Oxides of metals such as copper, nickel, iron and chromium are readily reduced and eliminated, resulting in a bright clean surface. Many other contaminants are volatilized and removed during the brazing process. Modified processes can be employed, such as the use of wet hydrogen. This method is currently being used for final processing of high-gradient Next Linear Collider (NLC) test structures to reduce surface carbon.

Many different materials can be joined by hydrogen furnace brazing. Most brazing at SLAC involves joining copper and/or stainless steel, however other materials commonly brazed at SLAC include nickel, iron,



Photo courtesy of Mechanical Fabrication Department

Derrick Soares (MFD) lifts the furnace heating element off a red hot retort.

carbon steel, molybdenum, Glidcop, Kovar and metallized alumina. The filler metal is usually an alloy of copper and gold, but other alloys containing silver, nickel, indium, palladium, and other metals are often used. The brazing process takes place in a specially designed furnace that employs controlled heating cycles in the range between 750 and 1100 degrees Celsius. The brazing atmosphere is contained in a cylindrical retort that can measure 36 inches across and 10 feet in length.

At the present time, this technology is being used to assemble components required for SSRL and the SPEAR3 Upgrade, the Accelerator Department and NLC. We also do special brazing work for other national labs and universities.

For more information on the Mechanical Fabrication Department, see: <http://www.slac.stanford.edu/grp/mfd/>

For more information on the Klystron and Microwave Department, see: <http://www.slac.stanford.edu/grp/kly/index.html> ●

New Signs Promote Safety

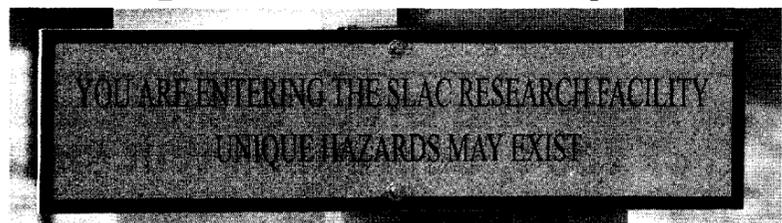


Photo by Diana Rogers

Alert commuters might have noticed a new yellow warning sign that appeared just beyond the Main Gate on January 22. This was one of eight signs posted at SLAC entrances recently, part of the Lab's ongoing effort to keep safety a priority in all our activities.

The ES&H Coordinating Council (which encompasses all divisions) decided to post the signs to let visitors and contractors know that they should be vigilant and inquire as to SLAC safety issues with which they may be unfamiliar. Employees and others in the SLAC community who have completed the appropriate ES&H training should already be aware of hazards here.

For more information, contact: Rachel Claus (BSD), Ext. 4343, rachel@slac.stanford.edu ●

Smoke Detector Basics

Find Out More About One of the Most Important Devices in Your Home or Office

By Robert Reek

Home fires are a serious threat to your family's safety. Every year in the United States, approximately 5,000 people are killed in residential fires and more than 40,000 are injured.

Most fire victims suffer from smoke and toxic gases, not as a result of burns. Most deaths and injuries happen at night while the victims are sleeping.

When properly installed and maintained, the home smoke detector is considered one of the best, least expensive means of providing early warning of a fire.

There is no doubt about it—smoke detectors save lives, prevent injuries and minimize property damage by enabling residents to detect fires early.

TYPES OF DETECTORS AND HOW THEY WORK

Ionization smoke detectors:

The ionization chamber smoke detector has a small radiation source that produces radioactive material (electrically charged particles called ions), which cause a small electrical current to flow into a chamber. Smoke particles entering the chamber attach themselves to the ions, reducing the electrical flow. The change in current sets off the alarm.

Photoelectric:

Photoelectric detectors use either an incandescent light bulb or a light emitting diode (LED) to send a beam of light. When smoke enters the detector, light from the beam is reflected from the smoke particles into a photocell sensor and the alarm is triggered.

WHICH SMOKE DETECTOR IS BETTER?

The State Fire Marshal of California, as well as nationally recognized testing agencies, approves both types

of detectors. Ionizing detectors respond slightly faster to flaming fires while photoelectric detectors respond faster to smoldering fires. Ideally, a home should be protected by at least one of each. If you can afford only one type, a photoelectric detector is recommended.

LOCATION, LOCATION, LOCATION

Detectors should be installed either on the ceiling or on walls between 6 and 12 inches below the ceiling.

Detectors should be located in each sleeping area, and between bedrooms.

In multi-story homes, detectors should be located on each story of the living area. Basement-level smoke detectors should be installed in or near basement stairways in the basement, not at the top of the stairs.

Do not place detectors closer than six inches of where walls and ceilings meet or near heating and cooling ducts. A detector placed in these areas may not get the required air flow to activate.

To avoid nuisance alarms place detectors:

- Away from furnace or air conditioner vents
- Away from bathrooms to avoid steam
- Away from a cooking area or fireplace

MAINTENANCE

Battery operated smoke detectors should have the battery replaced annually or when a low warning signal or chirping occurs.

It is important to use the exact make and model of battery recommended by the detector's manufacturer.

Accumulation of dust, dirt and insects can cause a false alarm. Keep the detector clean by vacuuming around its exterior.

For more information on Environmental, Health and Safety at SLAC, see: <http://www.slac.stanford.edu/esh> ●

The Future is on Display Now in the Auditorium Lobby

By Adrienne Higashi

What does SLAC have in common with Donald Trump's Florida golf course, the Stanford University campus, and the City of San Jose? All have been modeled in 3-D topographical format. SLAC's new model, on display in the Panofsky Auditorium Lobby, goes further than most, representing possible future developments at the Lab.

In order to help decision-makers visualize how various short- and long-range planning ideas will fit together, SLAC's Business Services Division (BSD) teamed with Stanford University's Architect and Planning Office to create this modeling tool. The project took about 350 hours to complete. The result is a 150-pound, 144" x 35" model at a 1" = 100' scale.

"Things are brought to life when they are transformed into three dimensional models," said Lisa Gemmiti, model maker and owner of the San Francisco studio that produced the model.

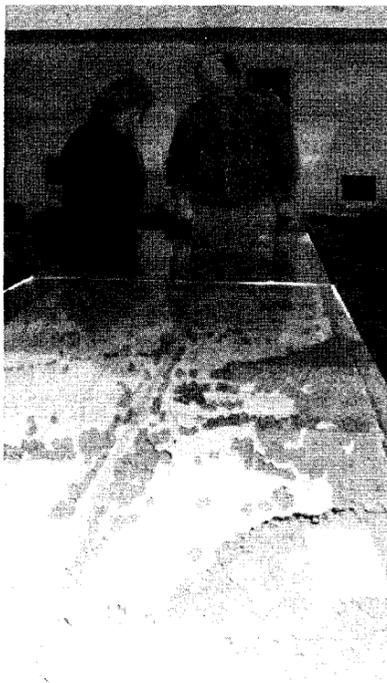
SLAC, as it exists now, is reflected in the model, as are the 10- and 20-year plans for the Lab. Existing structures at SLAC are modeled in light grey, the 10-year plan in brown, and the 20-year plan in white. Buildings proposed for the years 2010 and 2020 are pinned in place, allowing design flexibility without modifications to the model. New research buildings, a parking structure, pedestrian walkways and plazas are represented.

To create the model, SLAC's topographic contour map was traced with a custom-made router-type machine mounted on a tripod. Directly below an overhead cutter head, a stylus is mounted between the legs of the tripod. The stylus is used to manually trace the contours, step by step. As the modeler moves around the table, using the stylus to trace the undulating circumference of each of the hundreds or thousands

of topographical lines on the map, the overhead router precisely mirrors the stylus' movements and cuts away succeeding layers of the polyurethane block suspended below.

In addition to being a planning tool for the people at SLAC and the Stanford architects, it is also a public presentation tool for SLAC visitors. The model is now permanently displayed in the Lobby so visitors to SLAC can begin their site tour by viewing the model and orienting themselves to the 'big picture'.

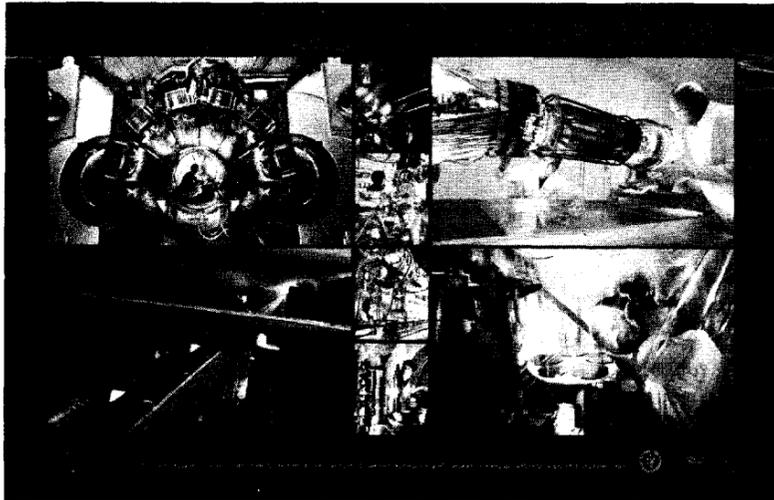
"This model demonstrates that the laboratory has a vibrant future," said Jerry Jobe (BSD). "Even if only half the plans are realized, SLAC will be an exciting place to be for the next 20 years." ●



Model maker Lisa Gemmiti discusses the topographic model of SLAC with Neil Calder (COM). The model is now on display in the Panofsky Auditorium Lobby.

Photo by Kathy Bellevin

New SLAC Poster Available



A new poster highlighting SLAC science is available from the Communications Office (COM). The poster will be given to staff, visitors, schools—anyone who would like to put it on their wall.

The poster was created by SLAC's Scientific Arts Media department, and includes photos taken by award-winning international photographer Peter Ginter.

"SLAC is a vigorous and visually stunning research center. The poster was created to share this with our staff and people from outside the Laboratory," said Communications Director Neil Calder.

Call or e-mail Joni White (MS 58, Ext. 8703, joni.white@slac.stanford.edu) to receive your poster. We have 2,000 now but they are going fast!

—Kathy Bellevin ●

Tune In to Videoconferencing

By Shauna Williams

Though teleportation is still out of reach at SLAC, it's easy to do the next best thing—videoconferencing.

"As a face-to-face technique, this really helps," said Art Bray (SCS), the videoconferencing coordinator. "A voice on the phone can say a lot, but an expression on the face can say a lot more."

"Videoconferencing is a more direct way to talk to colleagues across the region, the country or the world than using e-mail or even telephone conferencing," said Bray. At a cost of three cents per minute, it is economical, too. Most institutions have video conferencing capabilities; Bray has the complete list of these institutions.

Researchers use the two videoconferencing rooms in Building 50 to 'meet' with colleagues at other institutions, but the technology has other uses as well. Visiting professors have used it while here to teach classes at their home institutions, and a few graduate students have even given their dissertations via videoconference. During Take Your Kids to Work Day employees' offspring used the equipment to communicate with each other from different rooms.

In addition to being 'face to face', users can share visual aids. The videoconferencing rooms are equipped with document cameras,

and laptops can be connected to the system to display PowerPoint presentations or other files.

Bray can set up audio conferences, which can connect more people with better sound quality than an ordinary phone call would. He can also set up combined audio-video conferences, useful if not all the participants have access to videoconferencing equipment at their location.

"Theoretically, 10 or more sites could conference using either technique," Bray said. The SLAC conferencing rooms themselves hold 15 to 20 chairs, but each room's capacity is flexible.

For more information on videoconferencing at SLAC, see: <http://www-project.slac.stanford.edu/streaming-media/VideoConf/Default.htm> ●

Join us for the

Scientific Discussion Hour (aka, "4 o'clock cookiefest")

Tuesdays at 4 p.m. in the Green Room (3rd Floor Central Lab)

These are informal weekly meetings between staff members whose duties would not ordinarily bring them together (theorists and experimentalists, particle and accelerator physicists, etc.).

Sugar-laden refreshments will be provided.

Stieber to Receive Boy Scout Award

Joe Stieber (MD) is being awarded the Boy Scouts of America Silver Beaver award, the highest honor a Boy Scout Council bestows upon an adult volunteer. The award will be presented to Stieber at a dinner in February. The award is given to Boy Scout volunteers who have at least ten years of service and are outstanding examples for our youth to follow.

The average amount of time a person takes to earn the Silver Beaver award is 23 years; Stieber earned his in just 12 years.

This year 12 out of a total of 4,000 volunteers from the San Francisco Bay Area Council are being honored with this prestigious award.

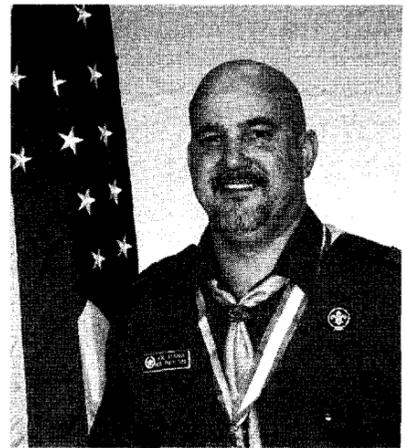


Photo Courtesy of Joe Stieber

Joe Stieber (MD) will receive the Silver Beaver award, the highest honor a Boy Scout Council awards an adult volunteer.

Stieber has been part of the SLAC Mechanical Design Department for almost thirteen years. "He is an enthusiastic contributor to our group," said Pat Wurster (MD). ●

Traffic Alert on Loop Road

A trench (shown right) is being dug along the Campus Loop Road between Building 48 (ROB) and the new user lodging construction area.

The trench is needed for installation of utilities at the new lodging facility.

This work is expected to run through March 7, and there will be periodic lane closures. Please be careful walking and driving, and follow any posted traffic signs.

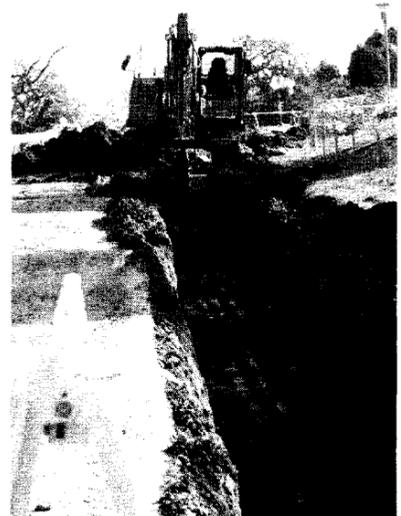


Photo by Diana Rogers

NLC Holiday Doors Shine

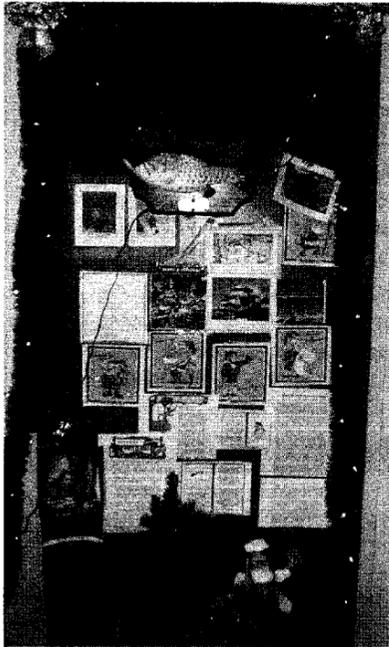


Photo by Naomi Negahashi

Members of the Next Linear Collider (NLC) group put their creativity to work decorating their doors this holiday season. It was the fourth year for the fun competition. A corkscrew, the grand prize, was given to this year's winning door (shown above), decorated by Linda Hendrickson. NLC group members incorporated traditional Christmas icons, music and even the GLAST logo into their creations.

For more on the NLC holiday doors, see: <http://www-project.slac.stanford.edu/lc/US-Japan/Naomi/Doorcontest2002.htm>

MILESTONES

Service Awards

5 Years

Trautwein, Thomasina, SPEAR3, 02/01

Shen, Patrick, EFD, 02/18
Valine, Joan, ARDA, 02/01

10 Years

Chatterji, Santa, OHP, 02/08
Eriksson, Leif, NLC, 02/16

15 Years

Logan, James, SEM, 2/12
Emma, Paul, ARDA, 2/22

20 Years

Miller, Paul, AD, 2/1
Boenheim, Charles, SCS, 2/16
Sanchez, Anthony, SEM, 2/21

35 Years

Billitzer-Jenkins, Stanley, ASD, 2/14

40 Years

Browne, Michael, ESD, 2/4

Retired

Abuan, Higinio, MFD, 1/31
Chin, Chuck 'Norman', MD, 1/31
Francis, Jean, PEL, 1/29
Sodja, Joseph, AD, 1/31

Deceased

Gross, Richard, retired from KLY in 1993, age 68, on January 20, 2003

To submit a Milestone, see: <http://www.slac.stanford.edu/pubs/tip/milestoneindex.html>

See Awards and Honors at: <http://www.slac.stanford.edu/slac/award/>

Investing Advice Available

Have questions about investing for your retirement?

Representatives from Fidelity, TIAA-CREF and Vanguard will be holding free individual counseling sessions at SLAC in Bldg 280, Module A, Room 180, throughout the year.

Upcoming dates are listed below. Please call the investment company directly to set up an appointment:

Fidelity

February 21
March 5
(800) 642-7131

TIAA-CREF

February 25
March 25
(800) 842-2007 (ask for Patricia Croteau or see <http://www.tiaa-cref.org/moc>)

Vanguard

None scheduled
(800) 662-0106, Ext. 69000 or <http://www.meetvanguard.com>

For more information on retirement planning, see: <http://www-group.slac.stanford.edu/hr/b/retirement.html>

Did you know that you can easily check your e-mail from any Web browser?

Simply go to: <http://www-mail.slac.stanford.edu>

Type in your Windows username and password to access the Web-based e-mail system.

For more information on e-mail at SLAC, see: <http://www.slac.stanford.edu/comp/net/email/index.html>

Upcoming Events

Tuesday Feb. 11, 12:30 p.m.
SLAC, Orange Room
SLAC EXPERIMENTAL SEMINAR
Peter Rowson, SLAC
"New Approach to Double Beta Decay"

Tuesday Feb. 11, 4:15 p.m.
Stanford, SEQ 201, (Refreshments-4:00, Physics Coffee Rm)
STANFORD APPLIED PHYSICS/PHYSICS DEPT COLLOQUIUM
Hitoshi Murayama, UC, Berkeley
"The Next Twenty Years in Particle Physics"

Wednesday Feb. 12, 4:15 p.m.
SLAC, Orange Room
(Refreshments-4:00)
SLAC ASTROPHYSICS SEMINAR
Chung-Pei Ma, UC, Berkeley
"From the Cosmic Microwave Background to Dark Matter: A Boltzmann Approach to Modern Cosmology"

POLICIES AND PROCEDURES Property Control in the Headlines

By Leslie Normandin

There have been quite a few news stories in recent months regarding missing property and alleged purchase card abuse at the University of California's (UC) Los Alamos National Laboratory (LANL).

We share with LANL an abiding dedication to science. And like other U.S. national laboratories, we are funded by DOE. Nearly all the equipment and materials used at SLAC are U.S. government property.

This requires that we all practice due diligence in the use, protection, accountability, and disposition of property in our possession.

Not Immune from an Audit

In January, auditors from the Inspector General's Office were here for an entrance meeting to kick off an audit of sensitive property. They are currently conducting this same audit at the UC Labs. SLAC provided the auditors with a list of data items they requested. They were also given a tour of Receiving and Salvage.

Remember it is very important to immediately report missing, stolen or damaged property to Laboratory Safeguards and Security. Contact Rick Yeager, Ext. 5333. After hours, call the Main Gate, Ext. 2551. A security officer will take your report, and Property Control will receive a copy of the report.

The auditors will be looking very closely at our procedures and processes from the moment an item is ordered, whether on a Purchase Order, purchase card or contract, and follow it through the system. They will be checking that all paperwork is in order, including signatures on new equipment purchases.

The audit will include a physical sample of sensitive property. For

example, auditors will check that the location and custodian match what is in our property database. They will also look at the disposal process. Is it all-inclusive—what we call 'cradle to grave'?

What You Can Do

You can query the database from the BIS Web page under Property (<https://www-bis.slac.stanford.edu/slaonly/bin/assets.asp>) to see what property is currently assigned to you. If there are any changes, you can submit an on-line transfer or update.

It is important, regardless of the cost of equipment, to ensure that government property is labeled.

Equipment worth over \$300 requires a bar coded property label.

Equipment worth under \$300 gets marked with a government property label.

It is your responsibility to notify Property Control when you move or transfer equipment. If you use your purchase card to buy equipment, it is your responsibility to notify Property Control. Extra precautions should always be taken to protect computers, PDAs, cell phones and other similar items.

Remember that all equipment needs to go to Salvage for disposal (Bldg. 28, Ext. 2329). For any equipment that has been damaged, dismantled or is beyond economical repair and did not go to Salvage, please write a memo to Property Control detailing the specifics.

Contact: Leslie Normandin, Property Control, MS 85A, Ext. 4350, leslie@slac.stanford.edu

For more information on property procedures, see the Personal Property Management Guide at: http://www-group.slac.stanford.edu/pcd/property_management.html

The Interaction Point

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Send submissions to tip@slac.stanford.edu, or mail to TIP Editor, MS 58, Stanford Linear Accelerator Center, 2575 Sand Hill Road, Menlo Park, CA 94025.

TIP is available online at: <http://www2.slac.stanford.edu/tip/>