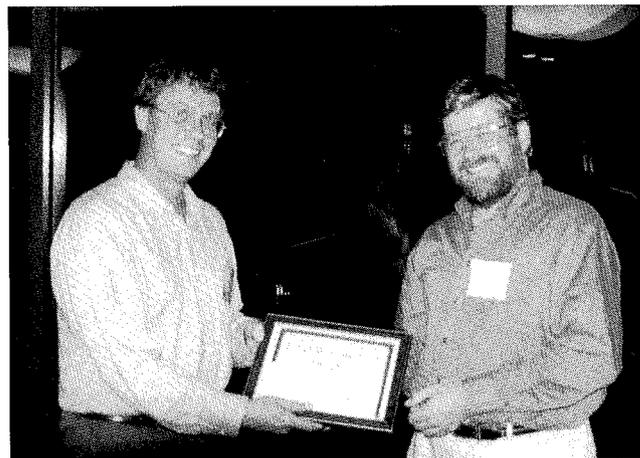


SSRL Users Showcase Success

THE 27TH ANNUAL SSRL Users' Meeting last month highlighted recent achievements and advancements in science and technology generated by research done at the Synchrotron Lab. Pat Dehmer, Director of the DOE Office of Basic Energy Sciences, commented on "the good BES budget news" and the favorable review by the Basic Energy Sciences Advisory Committee (BESAC) panel on the linac coherent light source (LCLS) conceptual design.

After SLAC Director Jonathan Dorfman welcomed participants, SSRL Associate Director Keith Hodgson gave an overview of achievements and activities for the past year. Jo Stöhr's presentation on the first five LCLS experiments was greeted with excitement, in anticipation of the potential of that machine.

The second session was devoted to X-Ray Materials Science with talks on x-ray imaging techniques and state-of-the-art photoemission studies. Katharina Baur (SSRL) discussed the research studies underway to analyze trace contamination on the surface of practical silicon wafers using the technique of Total Reflection X-Ray Fluorescence (TXRF). Several semiconductor companies are involved in this research



(Photos: D. Dungan)

The Farrel W. Lytle Award was presented to Roger Prince (ExxonMobil) at the Users' Meeting dinner. Prince was selected for being an "outstanding industrial scientist making important technical and scientific discoveries using synchrotron radiation and being remarkably effective at fostering collaborations between industrial and academic users and SSRL staff." Graham George (SSRL) made the presentation and went down an amusing laundry list of Prince's experimental sample interests from sulfur in fuels to bee pollen.



Herman Winick (pictured with his wife Renee) received the prestigious United States Department of Energy Distinguished Associate Award. The honor was jointly presented to Winick by Pat Dehmer and Bill Oosterhuis during the Users' Meeting. The citation commends Winick for "exemplary service to the Department of Energy and the world community in promoting this technology across disciplinary and geographical boundaries over a period of many years." The award had been a well-kept secret and Winick was visibly surprised and touched.

effort aimed at bringing full wafers for multipoint analysis at detection limits better than $1E8$ atoms/cm.

Patrick Cramer (Stanford U.) gave the first talk in the Biological Science session, presenting details on breakthroughs in solving the structure and unraveling the function of RNA polymerase II. Peter Kuhn (SSRL) discussed macromolecular crystallography at SSRL in the post genome sequencing era and Ninian Blackburn (Oregon Graduate Inst.) ended the session with a talk on XAS studies of metallochaperones.

The next session was devoted to talks on SPEAR by SSRL staff: Cecile Limborg presented information on SPEAR2, Tom Elioff spoke about SPEAR3, Tom Rabedeau updated information on beam line developments, then Rabedeau and Stöhr spoke about new beam lines.

The Environmental Science session started off with Anders Nilsson, SSRL's most recent faculty

(Continued on Page 2)

Director's Corner



by Jonathan Dorfan

SLAC enables and supports the research of a diverse, international community of scientists in high-energy physics, accelerator physics, structural molecular biology, solid-state physics, material-, environmental- and chemical-sciences. Scientists propose experiments or facilities at our site and the Laboratory decides whether to bring the proposals to scientific fruition using a process of peer review. Scientific peers of the proponents review proposals and make recommendations to the Laboratory regarding the scientific merit of the proposals.

Experimental proposals in high-energy physics are reviewed by the Experimental Program Advisory Committee (EPAC), composed of twelve scientists and chaired by Hugh Montgomery of Fermilab. Proposals to SSRL are reviewed by the SSRL Proposal Review Panel (PRP), a committee of ten scientists chaired by Russell Chianelli from the University of Texas-El Paso. A sub-panel within the PRP, the SSRL Structural Molecular Biology Advisory Panel (SMBAP), is separately convened annually to fulfill the peer review requirements of the National Institutes of Health funded program.

This past month EPAC met to consider four proposals and one letter of intent. Three of the proposals concerned an expansion of the fixed target program in End Station A (ESA). The proponents proposed that we create a new secondary beam at SLAC, a source of intense, high-energy, polarized photons. These would be produced when the primary 50 GeV polarized electron beam impinges on a very thin diamond target, thereby producing polarized

photons in excess of 40 GeV. Such a source would be unique—nowhere else in the world does such a facility exist. Three experiments were proposed for this new facility and EPAC recommended that SLAC approve all three, which I have done. Each of these experiments will involve a 2-3 month run in ESA. The most likely schedule would be to run one each in the years 2003, 2004 and 2005. Thus the ESA program, which would have ended in 2002 with the running of E158, will enjoy extended vitality.

The fourth proposal involved a follow-on of the already successful E-157 program, using a plasma to accelerate an electron beam in the Final Focus Test Beam area. The proponents propose improving the measurement apparatus while at the same time extending the program to allow the measurement of acceleration of a positron beam. EPAC recommended approval of the experiment. More discussion of these approved experiments will be featured in an upcoming *Interaction Point* article.

EPAC also considered a letter of intent that the Laboratory build, in IR12 of PEP, a small, low-energy electron storage ring to collide with the PEP-II positron ring. EPAC members were convinced that such a ring could be built without affecting the operation of the main PEP-II program. EPAC encouraged the proponents to examine the physics motivations in a more detailed manner. Accordingly, SLAC will host a workshop in early Spring 2001 to stimulate further development of this idea.

At SSRL, the next PRP meeting to consider proposals for beam time is scheduled for mid-January, 2001 and, if history is any indicator, the light source will once again be oversubscribed. In conclusion, our HEP and light source programs look very positive. We can all take pride in SLAC's role at the forefront of basic research.

SSRL Users Showcase Success

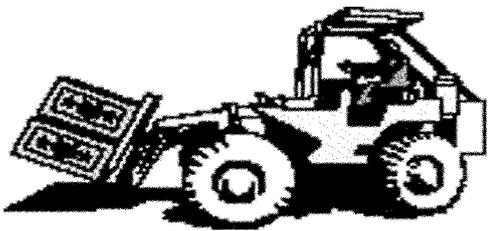
(Continued)

appointment, discussing Chemical Bonding at Surfaces. Pat Allen from Livermore followed with a presentation on how synchrotron-based actinide XAS studies have been applied to the Yucca Mountain cleanup effort. Other sessions were devoted to talks by young scientists and to highlights of the workshops organized to explore opportunities in new technologies and beam line instrumentation.

Bruce Clemens, Chair of the SSRL Users' Organization Executive Committee, gave a status

update on the committee's activities this past year, most notably, the very successful effort by the user community in communicating to their political representatives the importance of the science being funded by the DOE.

The Users' Meeting was organized by co-chairs Paul Foster (UCSF/Exelixis) and Jan Lüning (SSRL). More information can be found at <http://www-ssrl.slac.stanford.edu/conferences/ssrl27/>.



Research Office Building Construction

THE RESEARCH OFFICE BUILDING [ROB, and no puns, please] groundbreaking is scheduled to take place in early 2001 and folks at SLAC have already started to see some changes in preparation for construction. The A&E parking lot will be reconfigured in December to provide 17 new spaces. Some trees will be relocated to clear the space for the new building.

Karen Stidd, the Stanford Campus Arborist, and Robert Murphy, the Campus Grounds Supervisor, performed an evaluation of trees within the construction zone. Those that have a good potential for survival will be relocated; those that are unlikely to survive relocation (either due to their size or condition) will be replaced at a two for one or better ratio. If any of the relocated trees should happen to fail, they will be replaced with new trees as soon as possible since the ROB project team is committed to preserving the

greenery of the main quad area at SLAC.

While the ROB was sited with considerable attention to existing trees, nonetheless, two memorial trees, Hugh Steckol's Magnolia and Gerry Fischer's Coast Live Oak, will have to be moved.

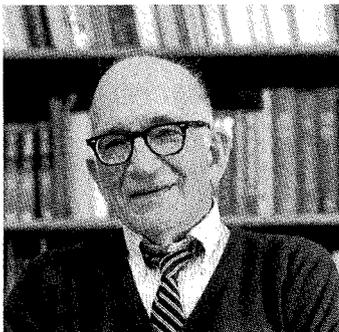
One tree relocation method is to dig a deep, wide ditch around the entire tree and then remove the root ball with a giant clamshell shovel. The root ball is covered with burlap to protect the roots and the tree is placed on a flat bed truck and moved to the new location, which has been prepared with the original soil and carefully leveled. The trees are then watered by hand for the first two years to minimize shock.

Construction is never tidy, but according to Roz Pennacchi, the ROB project team is researching all the available options for protecting the trees and minimizing the impact of the new building.

The Light at the End of Our Tunnel

for Sid Drell, on the occasion of being awarded the Enrico Fermi Award

*I am watching a film about California and its wonders.
A scientist explores a deep pit in the center of a Giant Sequoia Redwood.
He turns off his headlamp halfway down and sees the sunlight far above
As a focused view of where he will return. He believes himself a steward
Of the habitat, searching these inner walls to understand, preserve.*



*The physicist sees how this universe came to be, how it
Shudders in response to those inventions of man
Used for vengeful acts and blind reaches for power.
He guides us through dark passageways with vision:
Arms control, testing of weapons, the stewardship of stockpiles.*

*The existence of shadows
Does not discourage him from reaching.
The light enters from a point that's still to come,
And he knows he must keep climbing.*

—Janice Dabney

***** excerpted from the White House Announcement

The Fermi Award, the government's oldest science and technology award, dates back to 1956. It honors the memory of Enrico Fermi, leader of the group of scientists who, on December 2, 1942, achieved the first self-sustained, controlled nuclear reaction at the University of Chicago. Among the first recipients were physicists John von Neumann, Ernest O. Lawrence, Hans Bethe, Edward Teller and Robert Oppenheimer.

As an arms control specialist, Sidney Drell has been an advisor to the federal government on national security and defense technical issues. He is a founding member of the prestigious group of scientific advisors known as JASON. As a high-energy physicist, he has carried out important theoretical work in quantum electrodynamics and helped guide long-range planning of national accelerator laboratories.

SLAC Race Y2K

ON OCTOBER 26TH, SLAC held the 29th annual race event. Usually called the "Run, Walk, 'n Roll," this year the event was reduced to a drenched run and squishy walk due to pouring rain before, during, and after the event. For the skater's protection, the "roll" event was cancelled. No one on the committee remembers a wetter event. Ironically, the event date was moved from November to October to avoid rain! The 30th event may be moved up to September 2001 to avoid bad weather or we may change the event to the Run, Walk, 'n Row.

Despite the poor conditions, there were 47 runners, 18 registered walkers, many volunteers, and even a few spectators. SSRL's Ashley Deacon was the overall male winner, finishing in just 22:06 minutes (a 5:47min/mile pace), the fastest time since 1992. Considering the race conditions and his story, that time is amazing. Deacon started working at SSRL just over 12 months ago and weighed just over 260 lbs, unable to jog the 1/2 mile loop around his local park. Aided by the California weather (he moved here from upstate NY), he took up regular exercise including cycling to work each day. As his fitness improved, he started jogging. In November 1999, he saw the SLAC Run flyers and set a goal to compete in the 2000 event. Since that time he has lost over 80 lbs and has gradually increased his jogging. He is now competing in local 10K running events. Congratulations to Deacon!

The first overall winners received a \$25 gift certificate to a local sporting goods store. All category winners received a 1st place rosette.



1st Overall Male	Ashley Deacon (SSRL)	22:06
1st Overall Female	Micki DeCamara (EPR)	27:11
Under 30 Male	Brendan Murphy (AD)	24:51
Under 30 Female	Kari Van Tassel (AD)	29:13
30 - 39 Male	Knut Skarpaas (RD)	23:39
30 - 39 Female	Gudrun Hiller (THP)	29:46
40 - 49 Male	Michael DiSalvo (ESD)	22:47
40 - 49 Female	Karen Fant (NLC)	30:51
50 -59 Male	Bobby McKee (NLC)	22:43
50 - 59 Female	Helen Quinn (THP)	37:44
Over 60 Male	Bob Gex (Retired)	50:44

For more information about the SLAC race, go to the website at www-project.slac.stanford.edu/slacrace/.

-Ruth McDunn

SLAC Merchandise: Past, Present & Future

SLAC TEE SHIRTS AND other types of merchandise continue to be popular with our employees, retirees and visitors. In fact, these items are so popular that individual departments are now creating their own artwork and printing shirts for specific groups and specific occasions. Here's a brief history of the tee shirt saga at the Lab and a look at some future possibilities.

In the past, a SLAC volunteer took prepaid orders for tee shirts, sweat suits and jackets. Goods were distributed just before the holidays. When Bryan Harris, the hardworking volunteer, gave up the job after ten years of duty, P.A. Moore arranged for the Stanford Bookstore to take orders, sell merchandise and keep the inventory. That process worked for two years, until the Bookstore management changed. At that point, P.A. Moore ordered the merchandise from a local distributor, took prepaid orders, and sold the remaining stock out of her office.

In the meantime, numerous departments have designed their own artwork and ordered shirts for their groups, such as BaBar and SSRL. With such groups having their own specially designed shirts, there is reduced interest in the generic shirt and sales have

declined. The only two entities who have SLAC tee shirts available right now are Human Resources (Brenda Warren x2355), with Family Day shirts, and the Race Committee, with Ruth McDunn (x2014) holding a supply of tee shirts and tank tops. Andrea Chan (x3524) has a small supply of *BaBar* polo shirts.

Enter a new idea. Doug Kreitz in BSD has been investigating a relationship with Land's End. In this scenario, SLAC would provide the clothing company with approved SLAC artwork. Customers can then go to the Land's End website, order merchandise, and request the SLAC artwork (for which they will be charged a fee). It may be necessary to have a minimum order on merchandise, so some coordination may be required to bundle orders. This option is still in the discussion stages and would be mainly for high-end merchandise, like shirts or jackets (not tee shirts). Contact Doug Kreitz (x4550) if you have ideas about this new scenario.

We'll keep you posted on the continuing saga of SLAC tee shirts and other merchandise, and in the meantime, if you have suggestions, be sure to pass them on to any of the above people.



Water-Water Everywhere: Roof and Drain Maintenance a Priority



QUALITY OF LIFE CAN be measured in many ways. While Site Engineering and Maintenance (SEM) may not seem glamorous, we think that secure roofs and clear drains add considerably to peace of mind and improved working conditions. So as we move into the wet season, here's what's happening in roof and drain maintenance.

Many of our roofs are well beyond their lifetimes since our buildings go back over 30 years. Some roofs were poorly constructed and are beyond the point of economical repair. Roofs are expensive, as those of you who are homeowners will attest. For example, the removal and replacement of the Central Lab Annex roof is estimated at over \$300K and that is only one of many that need maintenance.

Analyzing the service requests that came in last winter, we prioritized roofs for replacement and repair. Since there was no funding for replacement, we decided to use spray-on foam to address our worst offenders. The first rain of this season gave us mixed results.

The majority of roofs repaired this way were better than last year, and there were fewer leaks. We were able to repair about fifteen roofs for this season instead of waiting another year for funding to replace just one. I'd like to ask that you continue to put in service requests for leaks and we will continue to patch the best we can. This data is important to justify and prioritize the replacement projects currently proposed.

Now let's move to drain maintenance, which occurs behind the scenes and is rarely noticed. Over the years topsoil has migrated into these channels to a

depth of several feet. The result is that water backs up and changes direction, causing slides and overflows in some areas. We have reversed the direction of flow from the hills south of the Linac to that of the original design, opened up passages for water away from the hill above Interaction Region 2, cleaned miles of drainage channel along various roads, and worked toward completion of a drain improvement project at the Master Substation. We have much more to do; the border between SLAC and the adjacent Portola Valley horse farm property will be our next priority to reduce flooding in their barns and paddocks.

Interconnection of drains to the storm drain system from other than rainwater sources is an area of environmental and regulatory concern. The past several years have included a significant amount of work to redirect the discharges from cooling towers, tunnel drains, process overflows/discharges and the secondary containment of potentially hazardous materials. The goal is to eliminate all sources of material from the storm drain system other than what falls from the sky as rain. The materials causing problems include mud and silt, low conductivity water and cooling tower water, plus any water that travels through our buildings or housings on the way to the storm drains. This project will continue for the next few years. I encourage all of you to watch for any improper drainage and report it promptly. It could be your office, lab or work area that might be flooded.

—Burl Skaggs



SLAC Holiday Party

THE ANNUAL SLAC HOLIDAY party will be held on Tuesday, December 19. If you want to help plan this party, hurry because the committee is already at work. Contact Lynn Thanash (x2265, email lthana@slac.stanford.edu) if you wish to lend a helping hand!

SLAC employee Bernie Culver (l) joined 14 others from May 30 to June 10 for a hike through the "Haute Provence" area of Southern France. The ladies met their English guides at the railway station in Nice where they boarded a train into the mountains to start their 80-mile trek. They walked between 8-13 miles a day for ten days, staying nightly at French auberges where they sampled the local wine and cuisine and visited with the natives. Bernie says, "If you love the French countryside, this is the way to experience it!"

Computer Account Procedures for SLAC Employees Who Terminate

BELOW IS A SUMMARY of the procedures that SCS will be implementing in January 2001 for computer accounts of SLAC employees who terminate.

Those continuing association with SLAC:

The use of SLAC computing resources is intended for work related to SLAC business. Therefore, a SLAC employee who terminates, but will continue association with SLAC in another capacity, needs to be:

- ◆ Sponsored by either a Principal Investigator or a Spokesperson of a SLAC research activity; and registered with SLAC User Organization as a SLAC User or with SSRL User Organization as a SSRL User, or

- ◆ Sponsored by a SLAC Sponsor who is a department/group leader or a faculty member, and registered as a 'Department Associate' with BSD-Entry.

Before the termination date, the employee should register with the appropriate organization. In this case, the computer account remains open. As the privileges associated with the account may no longer be appropriate, they will need to be reviewed by the supervisor and changed as necessary. Periodically, the association with SLAC will need to be re-affirmed by the Sponsor.

Those not continuing association with SLAC:

When SCS knows of the pending change of status, an e-mail will be sent out to:

- ◆ the SLAC employee
- ◆ the employee's supervisor
- ◆ the employee's department computer czar
- ◆ the SCS HelpDesk

notifying them that if no request for account ownership transfer is made, then the account will be:

1. Disabled for login the day after termination (i.e., no "login" is allowed for the account). The home directory of the account will still be accessible, though

the files will be in read-only mode.

2. One month after the termination date, the account will be deleted. The publicly-readable areas of the home directory will be kept permanently in a 'morgue' with read-only access. The entire home directory (including e-mail) can be restored from backup for up to one year.

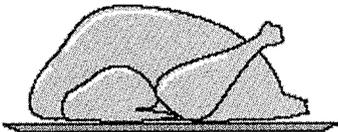
This procedure meets several needs. Since abandoned accounts are security risks, they are now deleted one month after the SLAC employee terminates. As many physics users may keep scientific work in publicly-readable areas of their home directories, these files will be kept in the 'morgue' if future access is needed even though the account no longer exists. The change of location from normal home directory space to the 'morgue' will ensure that dependencies on the old location will be discovered and fixed. Home directory files that are not publicly readable (including e-mail) will not be kept in the 'morgue'. After one year, these data cannot be restored.

If a supervisor needs to keep the account active, he/she needs to assume responsibility for the account by requesting a transfer of ownership at SCS. A similar set of procedures for SLAC Users with a longer timetable is being discussed with SLUO, and more information will be forthcoming.

We understand that there will be many adjustments needed during implementation of these procedures. There will be e-mail notifications sent to concerned parties before changes are made to an account.

This article is a summary; further details will be listed in the December issue of the *SLAC Bulletin* and on the web at <http://www2.slac.stanford.edu/instdatabase/procedures/computer-accounts/account-delete.htm>. You are welcome to give us feedback.

-SCS



Support the Annual Holiday Food Drive

WANT TO LOSE A few pounds during the holidays? You can do a good deed by dropping a few pounds of food into the Second Harvest Food Bank. Leave your non-perishable items in the donation barrels located in the following places: the second floor lobby of the A&E Building; the third floor lobby of Bldg. 137; the Cafeteria; the third floor lounge of the Computer Building; the first floor lobby of Central Lab; the Building 120 users lobby; and the first floor of Bldg. 24.

A special incentive this year, which will make it

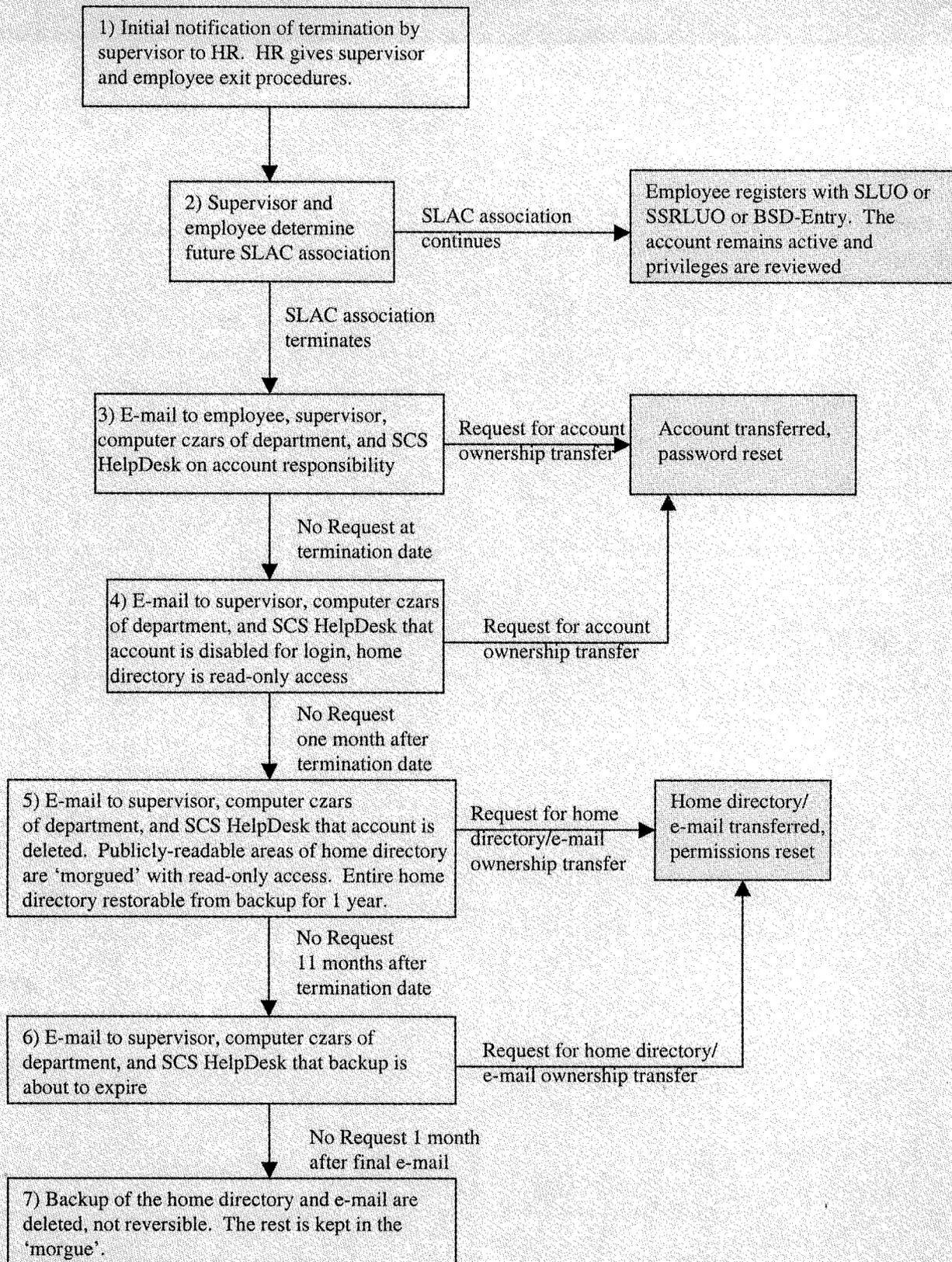
even easier to donate, involves the use of volunteers stationed at the Main Gate and the Alpine Gate on Friday, December 8 from 6:30am to 9:00am. Just drive in, drop off your donation and feel good all day.

Food items that are especially useful are canned goods, powdered milk, canned meats, cereal, peanut butter, soups and canned fruit. Checks are welcome, payable to *Second Harvest Food Bank*.

Volunteers wanting to help can contact Dave Dungan (x2008) or Stephanie Carlson (x2033).

Computer Account Procedures for SLAC Employees who Terminate

Revised 11/10/00





DURING HALLOWEEN WEEK I attended the 7th Annual InterLab Conference, held at Los Alamos National Laboratory. This conference is for DOE webmasters and web developers. The four main themes for this year's conference were web design, databases, security and knowledge management. Mike Ninness (Adobe), one of the four keynote speakers, enthusiastically presented many great tips for creating and optimizing web graphics using Photoshop and its new built-in product ImageReady.

Several presentations were very applicable to the web at SLAC. For example, the folks at the National Renewable Energy Laboratory (NREL) described their experience using the Content Classification Engine (CCE), an add-on to the Infoseek search engine (which we use at SLAC). This product allows web developers to create "Yahoo-like" portals to their web content. Take a look at the search tool for the State of Minnesota website (<http://search.state.mn.us/>) for an example of this technology in use. Their search page includes the standard search box and a set of categories and subcategories that the developers are able to designate and organize. Each time the search engine indexes the site, new listings may be found under each category and then displayed under the appropriate category—automatically! Another nice feature is that the developer has the ability to mark certain links as priority, so they will always appear at the top of the display. Click on the Arts and Humanities link and look for the red stars to the left of the listing. These are the priority links. I will be investigating our use of CCE at SLAC.

For more information about this conference, go to the conference agenda (<http://lanldb1.lanl.gov/conf/i2k.nsf/AllDocsUniqueID/ABMS-4KLRBS>). Streaming media presentations and links to other materials should be online by the end of the year.

Don't Leave Safety Up to Dam Luck



A FEW SAFETY-MINDED colleagues shared this photo with me recently, and it is indeed worth a thousand words. However, the message is equally engaging:

"Even if you were born to do a job, it doesn't necessarily mean that you're going to automatically do it safely...Remember that no matter how many times you've done a job before, be sure to think the whole thing through before you start. You've carefully thought out all the angles. You've done it a thousand times. It comes naturally to you. You know what you're doing. It's what you've been trained to do your whole life. Nothing could possibly go wrong, right??? Think again."

As we approach our holiday break and lab shutdown, let's help each other stay healthy. Stop a minute before you perform that routine task or step down those stairs without holding the handrail. You're all busy as beavers, but we don't want you to end up like this one!



—Janice Dabney,
Chair
Operating Safety

Milestones

Retired

Sandoval, Gus, Klystron, 8/31/00
Nowag, Judy, MFD, 10/16/00
Saltzberg, Alan, Purchasing, 11/10/00

Prizes

Drell, Sidney, Deputy Director Emeritus, Enrico Fermi Award, November 2000 (see Page 3)
Winick, Herman, SSRL, DOE Distinguished Associate Award, October 2000 (see Page 1)

Do you have an article you would like published in TIP? Just email tip@slac.stanford.edu.

January-February TIP

THE NEXT ISSUE OF *The Interaction Point* will be a combined January-February issue, and will be distributed the first week of February 2001.

Work Safe, Work Smart

An injury involving days away from work occurred on 10/20/00 according to Sharon Haynes, Worker's Compensation Coordinator. The number of calendar days between then and the last injury of 9/11/00 is 39 days. SLAC's record number of days between claims involving days away from work remains at 184 days.