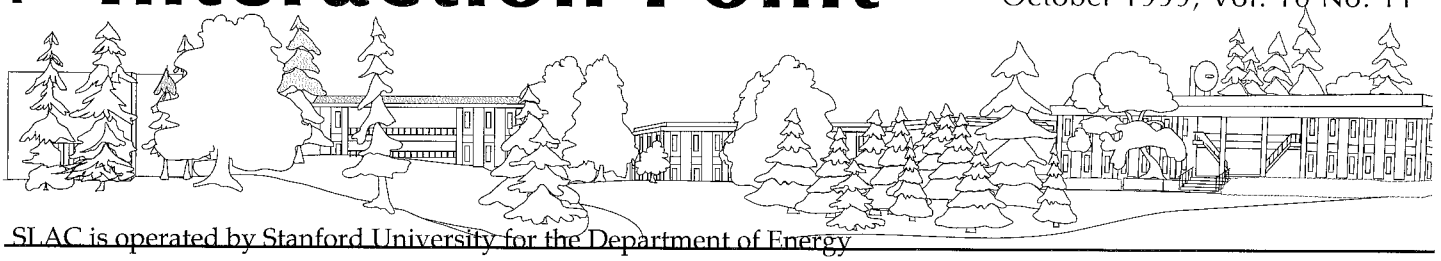
The Interaction Point

Events and Happenings
in the SLAC Community
October 1999, Vol. 10 No. 11

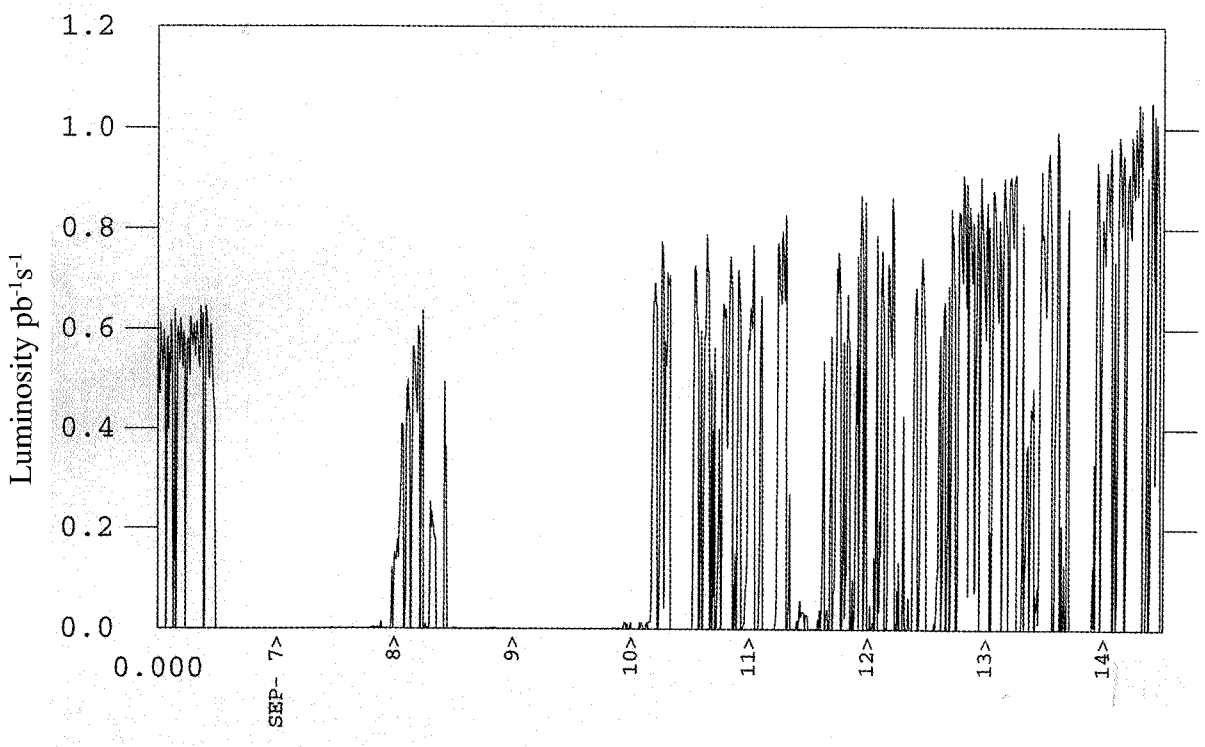


SLAC is operated by Stanford University for the Department of Energy

PEP-II Collider Achieves Record Luminosity

RECENTLY THE PEP-II COLLIDER ACHIEVED the highest luminosity ever reached by any electron-positron collider, 10^{33} events per square centimeter per second. Luminosity is a measure of the rate at which interesting events (production of B mesons in our case) occurs. The BABAR detector is successfully taking physics data at this level. The B Factory has now reached one-third of its design luminosity goal ($3x10^{33}$/cm2/sec). So far, the commissioning process is going well and congratulations to all for the fine work. The data being generated on B mesons should lead to a better understanding of CP violation and the Standard Model.

Tom Himel provided the graph below which illustrates the PEP-II luminosity from September 6 through 14, 1999.



PEP-II Luminosity from September 6-14, 1999. Note the steady increase to a peak of 1.05 picobarns^{-1}second^{-1}.

New Boson Discovered at SLAC

Boson sits atop "The Rock" in front of the A&E Bldg., while owner Wes Craddock stands close by.

A NEW BOSON HAS BEEN discovered at the Stanford Linear Accelerator Center this year. It is larger than any similar particle previously detected, now 7.5-kg and growing. This is thought to be even heavier than the Higgs Boson. It was identified as a boson when it was observed that it only spins in complete circles. This Boson is often observed as a charged particle, and can be found frequently in an excited state.

He will certainly be studied more closely at SLAC. Besides its other unusual characteristics, this Boson is covered with fur! It is likely to be seen at other locations around SLAC in the future.

Boson is a purebred Keeshond, a fine and furry breed that originated in the Netherlands. The Keeshond has a history of being a mascot for noble causes. A Keeshond was on the original seal of the city of Amsterdam, and was the symbol of the patriots of the Netherlands during political upheavals in the eighteenth century. Boson is just a puppy now, four months old, and will grow to about 40-45 pounds over the next year. He is the offspring of many of the finest champions of his breed. He and his owners Wes and Carla Craddock are honored to lend his image to SLAC as a bright, alert and friendly mascot to the laboratory.

–Carla Craddock

Email Notification of Announcements

AS SLAC MOVES TOWARD MORE electronic transmission of fast-breaking news, announcements are posted on the Home Page. But sometimes we forget, or don't have time, to check the Home Page. There is now a new service in which you can get email notification whenever an announcement is posted to the Web.

To subscribe, send email to majordomo@slac.stanford.edu and include in the body of your email message the following text: *subscribe slac-ann.* Members of this list will receive email with the title and URL for each announcement as it is approved. (Many email applications will display the URL as a link directly to the text of the announcement.)

–P.A. Moore

Another Mark Mystery Unravels...

LAST MONTH'S ISSUE OF *The Interaction Point* featured an article about the various MARK accelerators and detectors at Stanford University and at SLAC. After the article appeared, it was pointed out to SLAC Archives by Marty Breidenbach (who is certainly in a position to know!) that we had failed to note one of the more intriguing mysteries about MARK, relating to the MARK I and MARK II detectors at SLAC.

Although now known as the MARK I detector, it appears that during its entire working life (1973-1977), this detector went by the name of "The SLAC-LBL Magnetic Detector." This is the moniker found on all of its design documentation, and in most of the related SLAC publications which the SLAC-LBL Collaboration generated during the same period.

However, sometime during the development of a next-generation magnetic detector for SPEAR, the detector under development was designated "MARK II," and the original detector began to be referred to as "MARK I."

The name transition period appears to have taken place in 1976-1977. In Burton Richter's Nobel Laureate lecture, "From the Psi to Charm—The Experiments of 1975 and 1976"(delivered December 11, 1976 and published in 1977), for example, the detector is referred to both as "the SLAC-LBL magnetic detector" and as "the MARK I magnetic detector."

Making matters even more interesting, last month the Archives found an early drawing for the MARK II detector that refers to it as "The SPEAR Magnetic Detector II."

–Jean Marie Deken

Advice to Travelers About Y2K

WHEN SLAC SHUTS DOWN OVER the holiday period, many people may be travelling. Here's some advice from the State Department's Bureau of Consular Affairs about being abroad during New Year's.

In preparation for possible Y2K disruptions in important services, the Bureau recommends that individuals learn as much as possible beforehand about the regions of the world they plan to visit. U.S. embassies and consulates have announced their readiness to provide emergency consular services to U.S. citizens in trouble abroad, and currently provide updated country-by-country Y2K guidance through the State Department Bureau of Consular Affairs web site at http://travel.state.gov.

The Bureau has also issued a Y2K Worldwide Notice, recommending specific items for travelers, which are listed here.

- Consult your airline, cruise line, tour operator, hotel, and travel agent about contingency plans in the event of unforeseen Y2K-related delays, cancellations, or disruptions.
- Obtain written confirmation of reservations.
- Consider purchasing trip cancellation insurance.
- Anticipate possible delays in flights overseas. Give yourself plenty of time if your travel itinerary includes connecting flights.
- Make sure that you have essential possessions such as passports, medications, eye glasses, and emergency telephone numbers for your destination and home in your carry-on baggage. Your supply of medications should be sufficient to last for the anticipated duration of travel.
- Consult your insurance companies to ascertain whether your insurance policies cover Y2K-related problems, including health and accident coverage abroad.

The Bureau of Consular Affairs offers a comprehensive overview of Y2K concerns at http://travel.stat.gov.y2kca.html.

–Ruth Nelson

Topper Helps Stanford's Audit Department Win Award

(l-r) Ziba Mahdavi and Frank Topper are shown with the "voting" units.

THANKS IN LARGE PART TO the involvement and planning by Frank Topper of SLAC's Business Services Division (BSD), the National Association of College and University Business Officers (NACUBO) recently awarded Stanford University's Internal Audit Department $7,500 for a key process improvement initiative.

Topper facilitated the group process which ultimately improved the way the Internal Audit Department identified various risks (operational, financial, compliance, etc.) to the university, developed a means to deal with them early on, and found better ways to resolve conflicts and improve communications.

Specifically, Topper worked with Internal Audit on instituting a Risk and Control Self-Assessment (RCSA) program to rapidly focus limited staff resources on risk issues for the university. The technique utilized involved each participant using a remote control unit to "vote" on the unit's business objectives and processes. Once the results from this voting were tallied, participants could discuss risks and control issues and devise action plans to address the issues. One RSCA session generated $250,000 - $500,000 in cost avoidance, and another reduced 1,000 hours of auditor work to 100 hours.

Topper has utilized this same "voting" technology here at SLAC over the past two years. Many of the SLAC groups he has worked with confirm that using the system helps them come to consensus early on issues such as departmental goals, process improvement, strategic planning, improving internal workgroup communications, and team building.

Dieter Walz, who was in a group that used the "voting" system, commented, "I can't believe what we accomplished in three hours. I thought we would be fighting for days. It's really impressive." Contact Topper at x3024 for a demo.

–Doug Kreitz

Business Expo a Success

THE MENLO PARK CHAMBER OF Commerce recently held its eighth annual Business Expo at SLAC. There were 36 vendors showing off their companies (and their great food) to the 500 or so participants.

Visitors were greeted at the welcome table by members of the Menlo Park Chamber of Commerce and by Nisy Ipe, on behalf of SLAC. She encouraged folks to view the Visitor Center and learn something about our science. One visitor, after encountering docent Willy Langeveld, dubbed him "Cosmic Willy" after hearing an explanation about the cosmic ray detector.

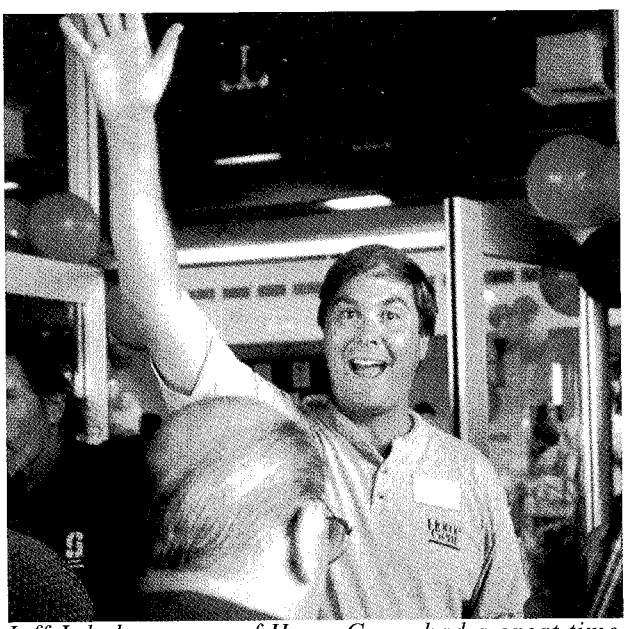
Previously the Expo has been held in locations near downtown Menlo, so coming to SLAC was a bit different. "I liked it because the Chamber had a chance to meet an entirely new group of people," said Ron Derenzi, manager of the Menlo Park branch of Bank of the West. "It's all about building relationships in the community."

SLAC's Director Jonathan Dorfan sent invitations to our surrounding neighbors, which may have accounted for some of the new faces we saw. "This is a great event for SLAC and I think we should do it again next year," said Dorfan. He and Renee Dorfan were at the event the entire time, mixing and mingling with staff members, community leaders and neighbors.

–P.A. Moore

Bob Supp, the President of the Board of Directors for the Menlo Park Chamber of Commerce, introduces SLAC Director Jonathan Dorfan to the crowd. Dorfan welcomed the audience of about 500 people.

Pictured here is the team from Left Bank restaurant on Santa Cruz Avenue in Menlo Park. Their salmon and scallop appetizer was a very popular item and got rave reviews.

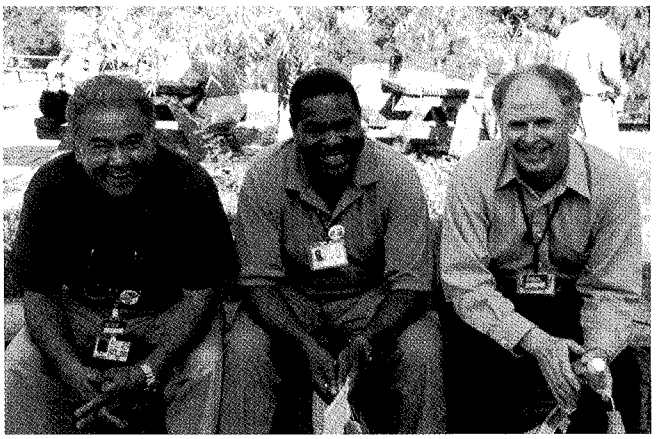


Jeff Jahnke, owner of Home Gear, had a great time at the Expo. "Hey, these techies talk my language!" Jahnke sells and installs home electronic equipment.

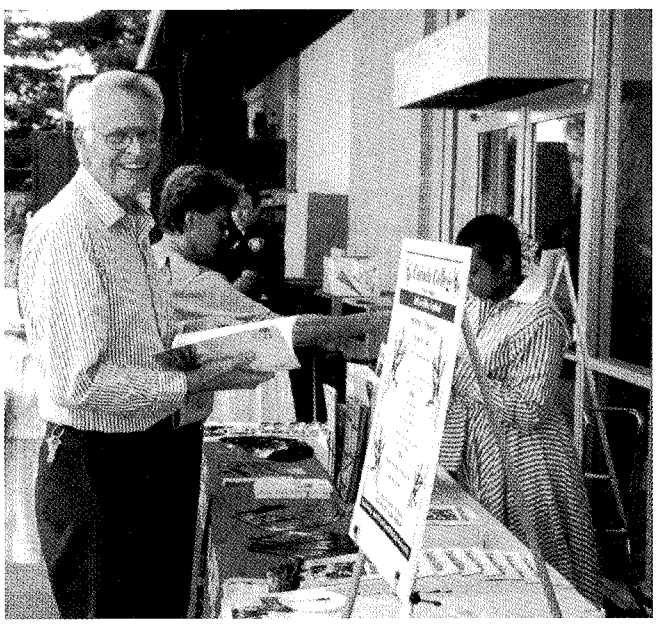
(Photos: P.A. Moore)

Business Expo a Success

(Continued)



Here are three of the men who helped behind the scenes setting up and tearing down Expo equipment: (l to r) Ray Ynegas, Herbert McIntye and Greg Bologoff. When the photographer requested that they do the "see no evil, hear no evil, speak no evil" routine, it got a big laugh.



Finn Halbo is checking out the Cañada College exhibit, "looking for a German class," he said. Halbo has some free time now that he has almost finished supervising the move of staff members into the new director's suite in the Central Lab.

Larsen Receives 1999 Richard F. Shea Distinguished Member Award

ON AUGUST 31, THE IEEE Nuclear and Plasma Science Society announced that Ray Larsen, Assistant Director, Electrical Support, Technical Division was the 1999 recipient of the Richard F. Shea Distinguished Member award. The award is granted to an individual who exhibits both technical excellence and extraordinary leadership. It is named for Dick Shea, founder and lifetime member of the Nuclear and Plasma Science Society and the award's first recipient. Dick continued interest in his field even in his mid-80s, and continued his Society involvement as NPSS Historian. He spent most of his career at General Electric and was author of a widely used electromagnetics textbook.

Larsen's IEEE involvement began with the old IRE (Institute of Radio Engineers, now merged with IEEE) as an undergraduate student at University of British Columbia, and continues now with his involvement in professional ethics and as NPSS Conference Policy Committee cochairman. He has been Society president and also started the continuing education programs. Early on, Larsen served the Quebec section as secretary and then Vice President while working at the Defence Research Board of Canada.

Larsen arrived at SLAC in 1962, before construction of the present campus, and between 1962 and 1987 served in posts from design engineer to Head of the Electronics Department. At that time it included a Detector Electronics R&D group, Controls, Power Conversion, an Electronics Fabrication and PC Board shop, and the Computer-aided Design centralized system for SLAC. In 1988 Larsen founded and was President and CEO of Analytek in Sunnyvale, a manufacturer of a modular gigabit speed digitizer product line for R&D that was spun off from chip developments for SLD. The company was sold to an institutional investor in 1995, and Larsen returned to SLAC to work on the PEP-II project as Systems Engineer. He was promoted to Assistant Director, Technical Division in 1997, at which time he also assumed responsibility as the NLC Deputy Project Director for Electrical Systems.

Ray Larsen represents SLAC's finest. We congratulate him on this well-deserved award.

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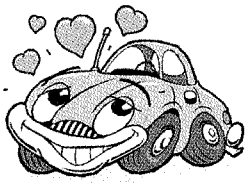
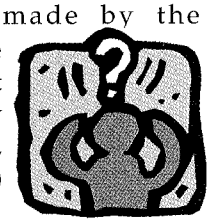
Squeaky Wheels and Creative Minds, Please Step Forward



THE RECENT DOE VALIDATION REVIEW (Phase II) of SLAC's Integrated Safety Management System (ISMS) was very supportive toward the efforts being made by the Operating Safety Committee (OSC) to "lend an ear" throughout the year to the SLAC community in the areas of environmental, safety, and health (ES&H) concerns.



We are motivated, propelled, and justified in our existence when you speak up! There were no responses to my invitation in the last column to volunteer safety ideas for a future TIP issue. But I refuse to take this silence as an indication that no one has an original idea at SLAC! Our reputation as a high-energy physics lab was built on creativity, vision, and persistence. Let's try bringing those attributes to the field of ES&H in our daily work routines. You don't have to be a safety professional to come up with a good idea about how your workplace could be safer.

You can reach OSC members through various methods: the ES&H Web page enables you to drill down to the member listing at http://www.slac.stanford.edu/esh/slaconly/oscmem.html and you can then click on the name of one of your division representatives (or any OSC member, for that matter) to send an e-mail. In this way, and through the SLAC directory, you can also obtain the phone extension and call a specific person. Even better, set up a 20-minute meeting at their office or work area to introduce yourself, even if you don't have a safety concern at that moment. You can also contact Janice Dabney, the OSC chair (dabney@slac.stanford.edu; ext. 3603) to express your concerns or get the names of members who work in your area.

Help us to do an even better job by putting faces and voices behind the many names in the SLAC directory. We can't speak for you unless you speak for yourself.

–Janice Dabney
OSC Chair

SLAC Laser-Alignment System History Remembered

THE SEPTEMBER *TIP* FEATURE ON the new SLAC postage stamp prompted a bit of reminiscing by Ray Larsen, who writes: "... Enjoyed the note in the September *TIP* about the stamp and the Laser Alignment System. With regard to those who worked on it, there were also a few engineering types involved, at least one of whom is still here!

I designed the detector electronics to precisely locate the position of the Fresnel lenses as they were dropped into the end of each 40 foot girder's light pipe. This consisted of a photomultiplier scanned across the image plate up at the Injector end of the machine, electronics to detect the focussed cross-shaped image, scanner mechanics mounted on the endplate, and yes, a pen plotter to record the image on a papaer graph! I believe the alignment resolution requirement was something under 1mm in X and Y. I don't know if or when that electronics was replaced, but it served for more than 20 years.

I think I remember one trouble call during that time. Joe Spranza was the mechanical engineer who designed and built the scanner mechanics and other actuators; he now runs a medical instruments company in Grass Valley. John Kieffer, who retired from SLAC to a ranch in Montana a few years ago, was our extremely versatile and able technician. We all spent many a happy hour in the pitch blackness of an abandoned railroad tunnel up in Brisbane mothering (fathering?) the quarter-mile-long prototype test section into a working instrument.

This work took place while we were housed in M1 on the campus, as the first building at SLAC was still under construction. I wrote a Tech Note, "A Photomultiplier Phase-Sensitive Detector for the Optical Alignment System," SLAC-TN-64-42, dated May 1964. (Probably not available on Amazon.com.)

PS: There were no integrated circuits or micros in the design; they hadn't been invented yet! "

–Ray Larsen
Technical Division

SLAC FleaMarket

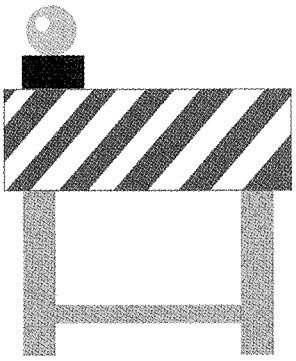
DOES THE SLAC FLEAMARKET REALLY work? "Yes!" says Janice Dabney. Dabney met a co-worker in her building by selling a patchwork quilt online via the SLAC FleaMarket. In addition, she purchased a VCR and cabinet from people selling on the FleaMarket. A quick look at the SLAC Home Page tells you how many ads are currently posted. Ads run for one week and are renewable. So, if you are still walking around posting paper on all of the SLAC notice boards (and forgetting to take them down), now's the time to change how you advertise, and go online at www.slac.stanford.edu/slac/fleamarket/slaconly.

What's Happening in the Main Quad?

AS YOU MAY HAVE NOTICED, Facilities is working hard to improve the Main Quad paths and lighting. These items have been mentioned in the past safety stand downs as areas of concern. Originally, the work was to be completed this summer.

However, we discovered that contractors were exceptionally busy with many construction projects competing for their time. In fact, SLAC had only four general contractors on the "bid walk" for this project and of those, only one proposal was submitted. Since we needed a minimum of two bids to proceed with construction, and it was necessary to complete construction before the rainy season, it was decided to divide the project into phases.

Crews are now converting the steps between the Central Lab and the Test Lab into a ramp that conforms to ADA (Americans with Disabilities Act) requirements. That work requires jack hammering out the old concrete, installing forms and rebar, compacting the soil and base rock, pouring concrete, installing handrails, and restoring the grass.



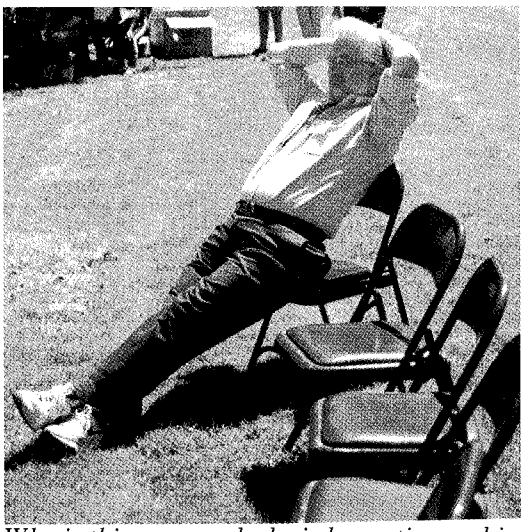
Those irrigation ditches that you see are really trenches for underground conduit with wire for a new lighting system. This work involves removing the existing lighting fixtures, trenching, laying new conduits and installing 19 new lighting fixtures on concrete bases. The new fixtures will be 12 feet high and light the pathways in compliance with modern safety standards. This work is scheduled for completion in mid-October.

The final phase of the Main Quad construction will be rerouting of some pathways around the cork oak trees and repaving of most existing paths to improve safety and wheelchair accessibility. This part of the project is scheduled for next spring.

Any questions about the Main Quad construction can be directed to Luda Cantor at x 3422.

–Luda Cantor

"Recumbant" DNA



Who is this man, and why is he resting on his laurels?

Year 2000 Holiday Dates

THE DATES FOR OBSERVANCE OF the designated University holidays in 2000 are as follows:

New Year's Day	Friday	December 31, 1999
Martin Luther King Day	Monday	January 17, 2000
Presidents' Day	Monday	February 21, 2000
Memorial Day	Monday	May 29, 2000
Independence Day	Tuesday	July 4, 2000
Labor Day	Monday	September 4, 2000
Thanksgiving	Thursday	November 23, 2000
	Friday	November 24, 2000
Christmas	Monday	December 25, 2000
	Tuesday	December 26, 2000
New Year's Day (2001)	Monday	January 1, 2001

Birthday Holiday*

*The birthday holiday may be taken on the employee's birthday or any other work day mutually agreed upon by the supervisor and the employee that falls within 365 days following the employee's birthday.

–Lee Lyon

News from the Web Information Manager
Ruth McDunn, mcdunn@slac

Lepton-Photon Webcasts

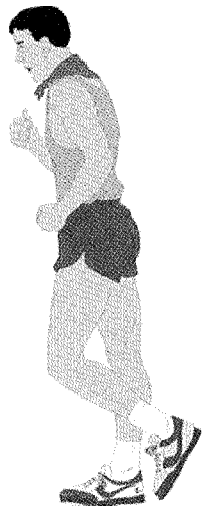
As you know, the 19th International Symposium on Lepton and Photon Interactions at High Energies was held at Stanford University this past August. Many folks at SLAC were involved in organizing and running this workshop. The web added another dimension to the Symposium this year. If you check the web site (lp99.slac.stanford.edu), you can view all the presentations via streaming media webcasts. Portable Document Format (PDF) versions of the presentation slides are also available. To view these files, you will need to download free browser plug-ins (RealPlayer and Acrobat Reader). Details are found on the streaming media web page (lp99.slac.stanford.edu/streaming-media/). SLAC's fast internet connection facilitates viewing the webcasts, but the streaming media technology makes it possible to use this technology on slower connections. Providing the presentations in this format certainly has made this information available to a much wider audience.

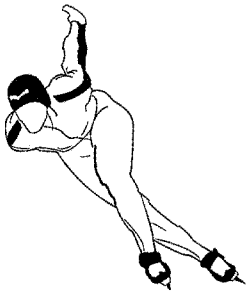
–Ruth McDunn

28th Annual SLAC Run, Walk, 'n Roll

"Okay, this is not part of my job, but I'm on the committee," says Ruth McDunn. For those interested, this event will be held at noon on November 4, 1999, with the start line on the south side of the Sector 30 linac road. The run and roll events are about 3.1 miles long, the walk about 2 miles. Pads and a helmet are required to participate in the roll event, which will be cancelled if the pavement is wet. The T-shirt design is still under development. Keep an eye on the web site (www-project.slac.stanford.edu/slacrace/) for future developments, including online shirt and lunch orders.

–Ruth McDunn





Work Safe, Work Smart

As of 9/15/99, there have been no injuries involving days away from work reported since 7/20/99, according to Sharon Haynes, Worker's Compensation Coordinator. The number of days between occurrences is 57 days. SLAC's record number of days between claims remains at 150 days.

SLAC Milestones

AWARDS
Larsen, Ray, Shea Award (see story, p. 5)
Topper, Frank, Internal Audit Award (see story, p. 3)

RETIRED
Coward, David, EC, 9/16/99
Limon, Santiago, BSD, 8/31/99

DECEASED
Harris, Clarence "Slim," age 80, retired 1984, died 9/5/99
Martin, Richard, MD, 9/7/99

Do you have a milestone you would like published in TIP? Email tip@slac.stanford.edu to have it included.