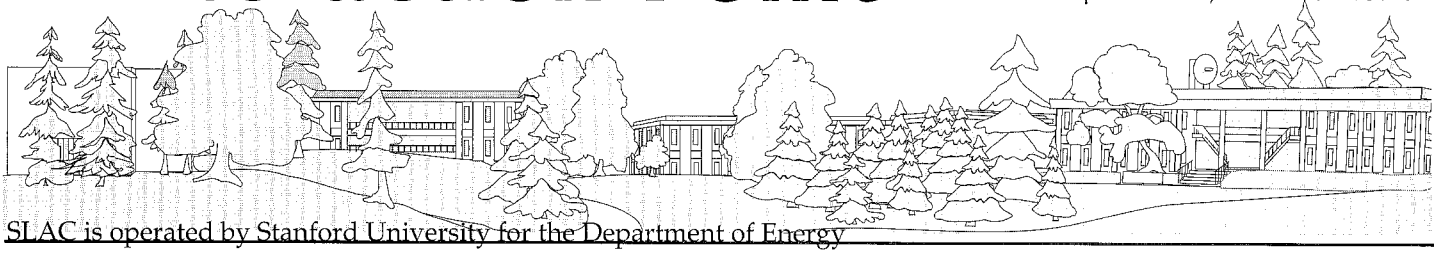
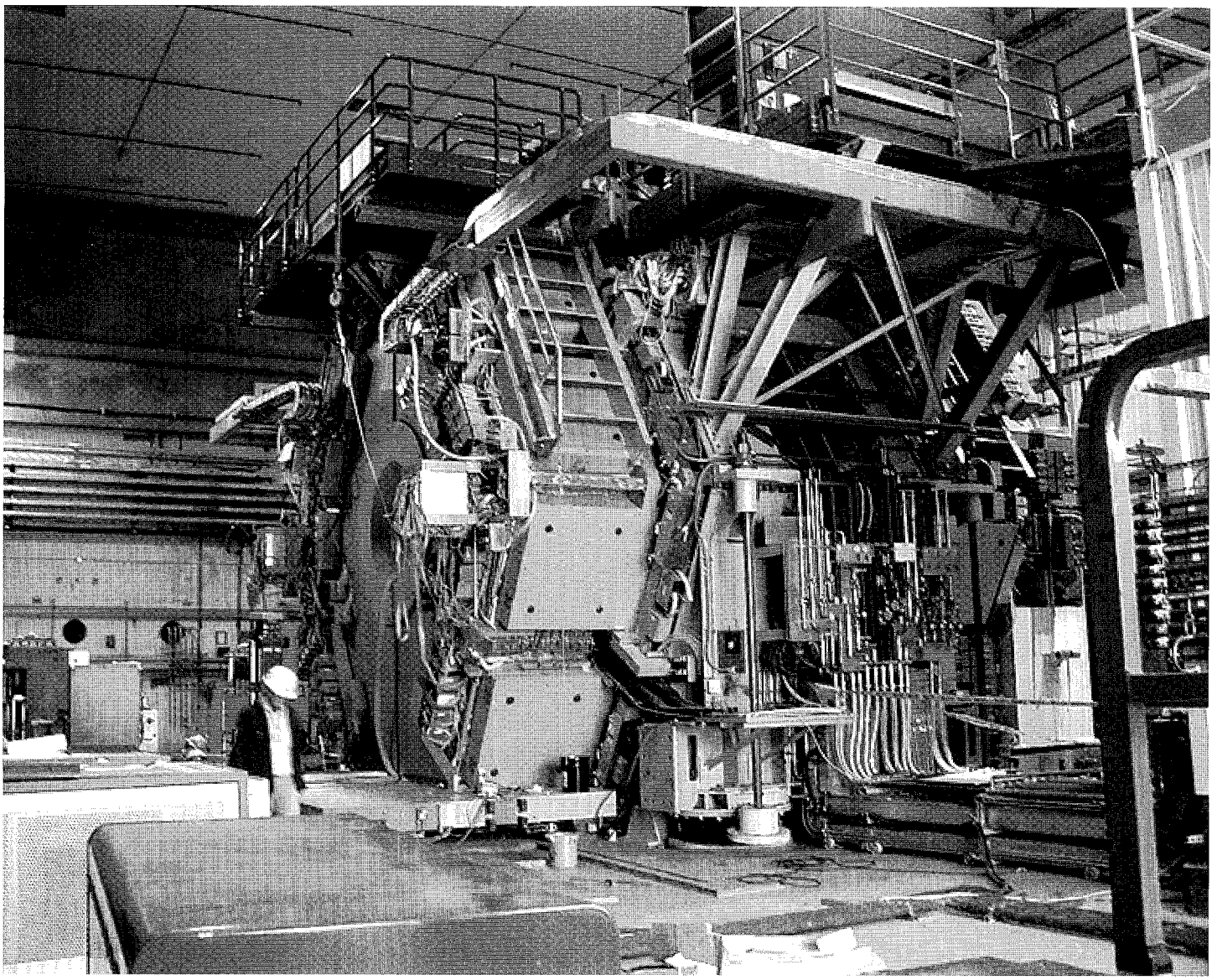
The Interaction Point

Events and Happenings
in the SLAC Community
April 1999, Vol. 10 No. 4



SLAC is operated by Stanford University for the Department of Energy

BaBar Detector Rolls into Place



(Photo Courtesy of H. Lynch)

Over the weekend of March 13-14 the 2,000 tonne (metric ton) BaBar Detector with its 200 tonne Electronics Room was moved from the assembly area onto the PEP-II beam line in IR-2. The move, which took two days to complete, was accomplished by pulling the Detector with the Electronics Room in tow at a rate of 2 inches per minute. By Sunday evening the Detector was in its final location within a few thousandths of an inch. On Wednesday, March 17, the Detector was lowered onto its earthquake isolators, where final preparations will be made for the beam turn-on.

PEP-II Commissioning Update

DATELINE: MARCH 1, 1999

THE WINTER RUN ENDED February 22 when the installation of *BaBar* started. PEP-II expects to start running again with *BaBar* on May 7.

Thanks again to all for a most exciting and productive run. I would especially like to thank our visitors for their very active participation: Albert Hofmann, Witold Kozanecki, Alex Lumpkin, Massimo Placidi, and Bruno Zotter.

The background detectors located around the interaction region were used over the past year to study the backgrounds from both beams and to predict the radiation levels expected when the *BaBar* Detector is in place. Various background reduction techniques were tried including trajectory steering in the interaction region, energy and betatron collimators, and vacuum pressure changes in the interaction region and the ring arcs. In general the backgrounds are higher than expected but low enough so that *BaBar* can start data taking after an initial beam scrubbing period.

The following information represents a brief look at the various system status reports as of March 1, 1999..

The Low Energy Ring (LER) current was raised to 1171 mA on February 22. We believe this is a world's record stored current for a positron beam. During the run, the LER accumulated an additional 133 ampere-hours for a total for 153. The interaction region beta functions were adjusted to be near the design values and the chromaticities were adjusted to be linear and positive. The current is limited by concerns of: (1) six adjacent bellows in one arc which show an unusual increase in temperature with beam current of about 40 degrees F on the hottest one; and, (2) a nonlinear rise in vacuum pressure in the straight sections due most likely to multipactoring electrons. Both of these effects depend on the number of bunches in the ring. The LER arc vacuum pressure is scrubbing at a steady rate but is slowed by several leaks. The transverse, longitudinal, RF low level, and the "woofer" link feedbacks were made fully operational.

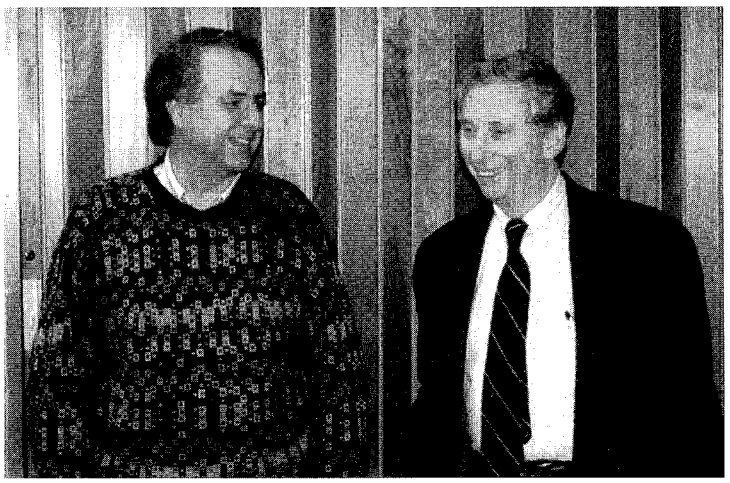
The High Energy Ring (HER) integrated current is now near 115 ampere-hours. The transverse, longitudinal, RF low level, and the "woofer" link feedbacks were made fully operational.

Collisions: During this winter run we collided beams for a total of eight days. Various bunch trains were collided. The 1571 bunch pattern has the design bunch spacing of every other RF bucket. All of the bunch trains had "ion" gaps of about 10% of the ring. A 1048 bunch train with a 40% gap was not stable for single beam effects in LER. The bunch injection controller was successfully tested. This controller selectively picks which bunches are to be filled so that the single bunch currents around the ring are all the same within a few percent. A level filling pattern will help stabilize beam-beam effects over a bunch train.

Many beam-beam scans were done with the aim of reducing the interaction point beam sizes. A vertical "cap-sigma y" of 8.6 microns was achieved, with the design value of 6.8 microns. The measured horizontal sizes were very near the design value of 157 microns. The peak luminosity obtained was 5.2 x $10^{32}/cm^2/sec$ with 786 bunches (with 354 mA in the HER and 681 mA in the LER). The largest currents collided were 1007 mA in the LER and 251 mA in the HER in 1048 bunches.

–John Seeman

HEPAP At SLAC



A meeting of the High Energy Physics Advisory Panel was held at SLAC in early March. Among the participants were (l) Blas Cabrera, professor and chair of the Physics Department, Stanford University, talking above with Fermilab Director John Peoples (r). HEPAP is a 17-member board that meets at various DOE labs around the country to review the national programs and determine priorities for future projects.

Work Safe, Work Smart

The last injury involving days away from work was reported on 2/10/99, according to Sharon Haynes, Worker's Compensation Coordinator. There were 14 calendar days since the last incident on 1/27/99. SLAC's record number of days between claims involving days away from work remains at 150 days.

Witherell Named New Director of FermiLab

Mike Witherell has been named as the new director of FermiLab, taking over for John Peoples who will be stepping down on July 1. Witherell is well known to SLAC, since he chairs the High Energy Physics Advisory Panel. He is currently a professor of physics at UC Santa Barbara.

What's the Best Way to Get to LA?

RICH DOMINIAK, FROM THE SLAC Library, is busy training for California AIDS Ride 6. On June 6, 1999, he'll be one of 2,600 people riding their bicycles 560 miles over 7 days from San Francisco to Los Angeles to raise money for the San Francisco AIDS Foundation. See `http://www.best.com/~richdom/aidsride/` for more information. "Any pledge, small or large, is welcome," Rich says.

FactinOs

Successful March Blood Drive
The Stanford Medical School Blood Center conducts mobile blood drives at SLAC quarterly. We had 65 people presenting themselves for donations at the March blood drive - a very good turnout considering this is cold and flu season! The next blood drive is scheduled for Thursday, June 3. Mark your calendar today!

Upcoming 20- and 30-Year Service Awards
This year's annual service awards for staff members with 20 and 30 years at the laboratory will take place on Thursday, April 15. Invitations have gone out from Personnel for an evening at the Stanford Faculty Club. If you have not responded, please contact Susan Lucas (x2265 or `slucas@slac.stanford.edu`) by April 9th. Highlights will follow in the next issue of The Interaction Point.

Earth Day: Sustainability
The theme for Earth Day 1999 is "Sustainability." Kirk Stoddard (x3801) has arranged some activities at the lab on Thursday, April 22. The theme for Earth Day 2000 will be "Energy," a very appropriate topic for the Department of Energy Labs.

Walking Group
Wellness Coordinator Manuel Hipol (ext. 4588) is organizing the walkers. On Mondays and Wednesdays this group leaves from the Sector 30 Gate at Noon. Bring your dosimeter badge to enjoy walks on the backside of the lab. If this motivates you to get out and about at noon time, please give him a call or just join in.

Ambassadors to the Community
The Stanford Commencement tours of SLAC are scheduled for Saturday, June 12. This is the first call for volunteers. If you make this an annual tradition, please mark your calendar. If you are interested in volunteering to lead one of these tours, contact Nina Stolar (x2282 or see `http://www.slac.stan-ford.edu/grp/pao/ambassador.html`).

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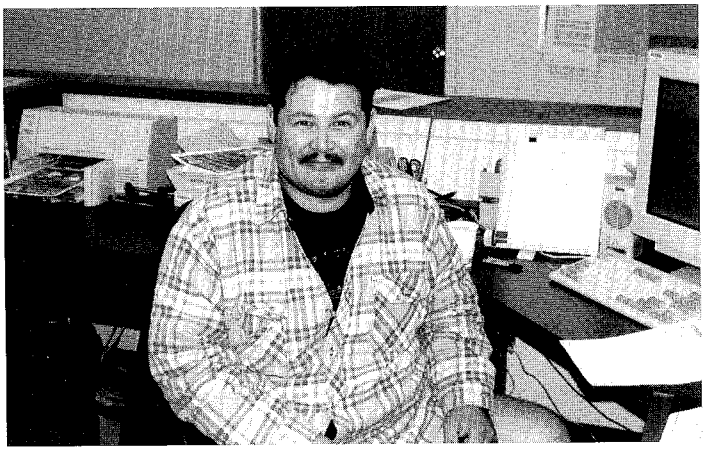
Meet Nick Arias



TEN YEARS AGO, Nick Arias became a permanent SLAC employee after working for a year as a contractor in Document Control (back when it was in Plant Engineering). Then, in July 1998 Nick became an Administrative Associate IV in the NLC Group. Big change...

As Nick puts it, "I literally learned the job in Document Control from the ground up." Those were the days of offset printing, then duplicating copiers; punch cards to electronic ECAD systems; paper Mechanical Design drawings to online images available on the web. During these evolutions, Nick learned to fix and repair many of the machines which performed the operations. And as progress moved Document Control into the electronic era, Nick learned about the software controlling these operations.

His natural enthusiasm, cheerful attitude, and love of learning how to do anything SLAC needed done in his area made him not only a valuable asset, it earned him a positive reputation. People knew they could count on him to get the job done, even if it meant learning how to do an operation during the job.

About a year ago, an administrative position opened in NLC reporting to Robbin Nixon. Several people encouraged Nick to apply, even though this might not have seemed a traditional career path from his job in Document Control. Nick was the successful candidate, and began working in NLC using some of the tools he had acquired in Document Control.

Now Nick is comfortable working in Excel and using various Adobe applications (which allow him to view, edit, print, and electronically send both pictures and documents over the web). He is also learning the art of web authoring, as well as database management. In the NLC project these are valuable skills, since many of the documents produced during the Conceptual Design Phase need to be compiled, organized, and made available electronically for participants from various institutions.

Nick is also beginning to perform some computer system administration for the NLC Group. He is proud of his reputation in the area of testing software and hardware, then either helping–or learning how to–fix it. "If you can't break it, you don't learn how to fix it," he contends. He enjoys the troubleshooting aspect of administration and likes to spend some of his free time "hanging out" with the computer resource group.

Eventually Nick sees himself obtaining a degree in Computer Science, and working in system administration and/or programming. Considering his growth over the past ten years, this is absolutely possible. And, here's to ten more years!

–Teri Peterson

What To Do With Those Extra Safety Discussion Issues

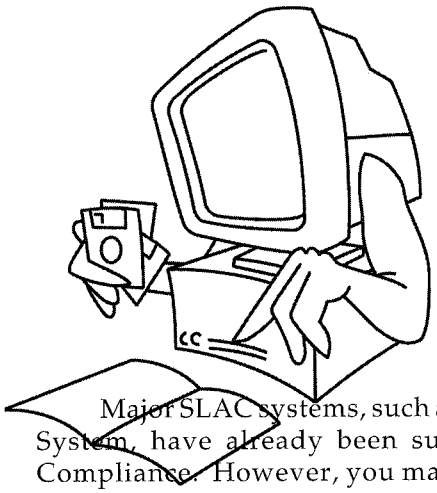
THANKS TO YOUR ENERGETIC input from last month's safety discussions, we have a good "snapshot" of what the SLAC population currently feels is important in the safety, environment and health arenas. As in past years, a few discussion leaders did not have the heart to narrow their group's issues to two and, therefore, submitted all issues. The good news is that participants were fully involved for two hours in envisioning how to make our workplace healthier, safer, and more environmentally aware.

The safety discussion process restrains discussion groups to two issues only in order to maintain a manageable and, therefore, more useful database. The goal is <u>not</u> to make anyone keep quiet on safety! Discussion leaders were asked to tell their groups that any issues over the quantity of two could be routed to any or all of these resources: Division Safety Coordinator, Department Safety Coordinator, and Operating Safety Committee.

The diversity of issues which are raised on this site is matched only by the diversity of avenues we can take toward resolution. The Operating Safety Committee (see members list at `http://www.slac.stanford.edu/esh/slaconly/oscmem.html`) exists to address your general safety concerns. We can also help to redirect questions to pertinent citizen committees or experts in ES&H. So, don't put Issues 3 through 10 in mothballs for next year's safety discussions–give us a chance to help, now and throughout the year!

–Janice Dabney
Chair, OSC

Y2K Readiness at SLAC Depends on You



ARE YOU RESPONSIBLE FOR a computer? Do you supervise someone who uses a computer? If so, in the official words of Stanford University you are a "duly deputized member of the Y2K team" and it is your job to take appropriate steps to prevent disruption in your areas of responsibility.

Major SLAC systems, such as the Business Information System, have already been successfully tested for Y2K Compliance. However, you may be responsible for one of the hundreds of SLAC computers that are certain to misbehave in some way early in the next millennium. Remember that problems can be caused by the computer hardware, the operating system or the applications software.

Sun machines running Sun OS 4.1, IBM machines running AIX 3.2.5 and PCs running Windows 3.1 are among the systems that are not Y2K compliant. It may not be necessary to replace or upgrade these machines if you can ensure that the tasks they perform (for example acting solely as an X Terminal) are insensitive to the date.

SLAC's Computer Services are ready to help with hardware compliance determination and to offer sources for checking application and operating system compliance.

For completeness, here is a definition of Y2K conformity: Year 2000 conformity shall mean that neither performance nor functionality is affected by dates prior to, during, and after the year 2000.

There are four rules in particular which computers must recognize:

Rule 1:
No value for current date will cause any interruption in operation.

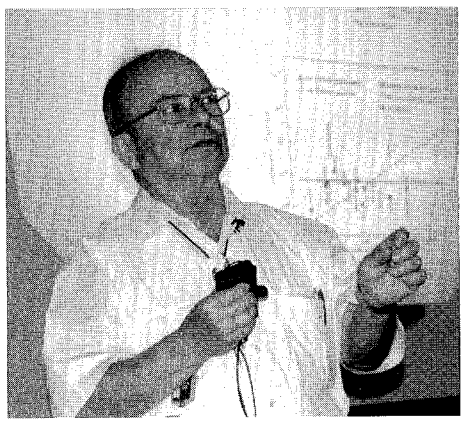
Rule 2:
Date-based functionality must behave consistently for dates prior to, during, and after year 2000.

Rule 3:
In all interfaces and data storage, the century in any date must be specified either explicitly or by unambiguous algorithms or inferencing rules.

Rule 4:
Year 2000 must be recognized as a leap year.

Future issues of *The Interaction Point* and other news channels will carry more information about SLAC's Y2K readiness to keep staff and users informed. In the meantime, if you wish more detailed information, contact John Weisskopf at x3188 or point your browser to: `http://www2.slac.stanford.edu/comp/y2k/y2k.html` .

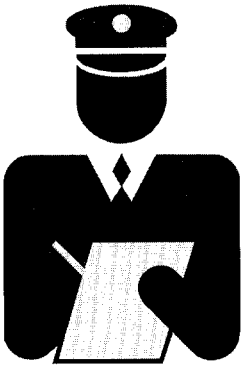
W.K.H. Panofsky Celebrates 80th Birthday



MOST PEOPLE WHO KNOW him thought that Pief would not slow down after retiring as Director of SLAC 15 years ago, and they were right. He will celebrate his 80th birthday on April 24, 1999. Although he no longer manages the laboratory, he has been an active leader in national security and arms control studies through the National Academy of Sciences. These activities include studies for the US Government and meetings with colleagues around the world to improve understanding on issues of arms control. He has also worked to advance scientific collaboration internationally, including both China and Russia. May his upcoming years be equally exciting!

Physics for the Classroom

Several local community college teachers have been working on a DOE-funded project with SLAC physicist Helen Quinn to develop physics lab activities for their classrooms. Pictured above (l-r) are Willy Langeveld, SLAC physicist; Eric Harpell, from Los Positas Community College; and Sue Wang, from Foothill Community College. The teachers will design web pages and use computational tools for teaching physics.



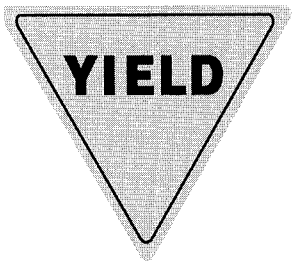
SLAC's Traffic Control Program

ONE OF THE RESULTS of the site-wide ES&H safety discussion meetings held annually for the past three years was the identified need for a more formal traffic control program at SLAC. People complained of cars speeding around the site, ignoring stop signs, and parking illegally, especially in red zones or in spaces designated for "government vehicles only." The traffic control program was first implemented in 1996, and addressed the concern that SLAC streets needed to be safer for everyone on the site. An updated Traffic Control Program was issued March 2nd, and primarily clarified administrative details. All vehicles, including bicycles and rollerblades, are covered under this program.

The reissued Traffic Control Program also serves as a reminder to register your vehicle if you have not already done so. Registration stickers may be obtained at trailer 206 between the hours of 8:00 AM - 5:00 PM Monday through Friday. As part of the program, mandatory vehicle registration was implemented for regular employees, users, contractors, and temporary workers. This not only gives Security help in traffic control and the ability to contact the owner/driver in case of an incident involving his or her vehicle in a parking lot; it is also used to provide more rapid access to the site during non-business hours. In the case of emergencies, rescue personnel can more easily identify the possible location of people who may be trapped in a collapsed or burning building.

Since the implementation of the Traffic Control Program, the average speed on site has dropped and there are only a few repeat violators in the area of speeding. According to Rick Yeager, there is normally eight months to a year between offenses. Citations remain on file for 90 days on parking violations and 180 days for moving violations. The difference is that a moving violation can be life threatening by offenders speeding or running stop signs. There is an appeals process and recently this was put to the test. On the 10th of March, a moving violation was issued to a bicyclist for improperly operating his bicycle on the south side of the Gallery. This was appealed and Yeager investigated. He determined that the area where the bicyclist received the violation should, if fact, not be posted for no operation of bicycles, walkers, joggers, etc. Since the roadway between Sector 30 and the entrance to the Power Conversion Building complex is marked for two way operation, it was determined that the road is wide enough for two vehicles to pass safely. The citation was removed from the employee's record and the signage was changed to reflect the new rules.

Safety is everyone's concern. Yeager requests that if you see a potential problem that could turn into a safety concern, please let Security know. Examples of this are a stop sign that is missing or is not located in the proper place for drivers to react; an area that has a lot of pedestrian traffic but no crosswalk, or bad lighting. You may shortly see some improvements in signage and striping as a result of a recently-completed study. Look for more publicity as this program gets implemented.



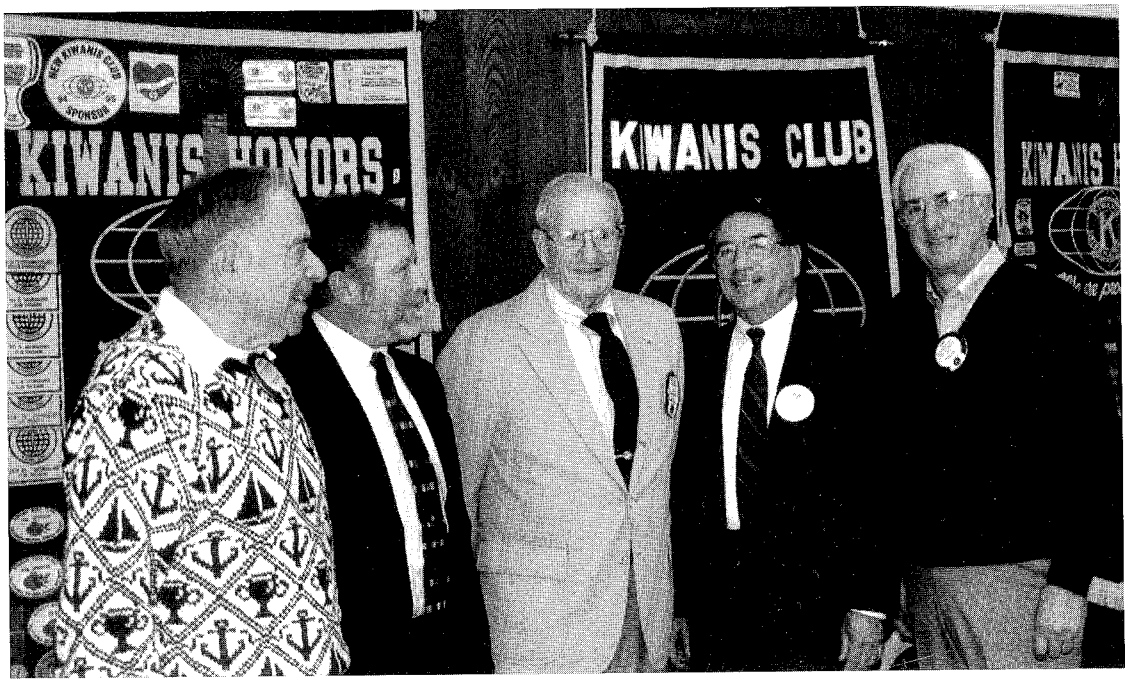
Take Our Daughters To Work Day

NATIONAL TAKE OUR DAUGHTERS to Work Day is Thursday, April 22, and SLAC will open its doors to sons and daughters of staff and users. Girls in the age group of 9 through 16 are invited to register for the event. Enrollment is limited so preference will be given to first-time attendees in the younger age groups. Boys are welcome on site with their parents, but will not be part of the formal activities.

Morning activities include tours, demonstrations, and a guessing game. During the game, similar to "What's My Line," girls will have to decide who on the panel of speakers belongs to which occupation, such as engineer, physicist or administrator.

In the afternoon, girls and their parents are invited to visit work locations of the panelists. There will also be a variety of "open house" activities where demonstrations will occur. Boys are welcome to attend the afternoon open house activities.

Registration forms will be sent to department heads and group administrators, so check with your group administrator first. Forms are also available online at `www-project.slac.stanford.edu/todtw/1999.htm` or you can pick up a hard copy in the Personnel Office. Direct questions to Bernie Lighthouse at x2358.



Peter Rosen, Associate Director for High Energy and Nuclear Physics for the DOE, was in the Bay Area recently for HEPAP and laboratory program reviews. He took time from his busy schedule for some community relations. Rosen (second from right) is pictured here with members of the Menlo Park Kiwanis Club, where he spoke about the DOE as a science agency. His message to the community was that DOE is among the top five federal agencies in basic science research, and he outlined major physics experiments, such as the B-Factory, which would be coming online in the near future. (l-r) Morris Oppenheim (Kiwanis past president), David Treacy (DOE-SLAC Site Office), Ed Brandle (Kiwanis president), Peter Rosen (DOE), and Dick Hafenrichter (Kiwanis Division 34 Lieutenant Governor).

Behavioral Based Safety Assessment

A Behavioral Based Safety Assessment was conducted at SLAC in December 1998. The Assessment was conducted to determine how employees within four departments perceive the safety culture and related management systems. The intent was to determine the possibility of implementing an employee-driven accident reduction program within the four departments that were surveyed. A similar behavioral safety-based process has been linked to the reduction of injuries and illnesses at other Department of Energy (DOE) sites.

Operational Health Physics, Plant Engineering (Mechanical Utilities, Plant Maintenance), and the Facilities Office were chosen to participate based on the fact that they had a higher number of injury incidences than other SLAC departments, which is not surprising due to the nature of their jobs (trade groups tend to have a higher number of incidents). There were three parts to the Behavioral Safety Assessment: a safety survey, focus group meetings, and an analysis of data from SLAC accidents. Complete details on the results of the Assessment can be found at `http:\\www.slac.stanford.edu/esh/`.

For the period of January through September 1997, SLAC was ranked number 21 out of 28 in the Injury and Illness Ranking of Research Contractors on the Injury and Property Damage Summary. The report provides statistical data on the safety performance of the DOE and the various DOE sites. During the same period of time in 1996, SLAC was ranked number 30 out of the 31 sites. Although our ranking has dropped, so have those of the other DOE sites. The goal is to reduce incidences further by a more structured behavioral accident prevention program. Complete statistics are available at the following URL: `http://tis.eh.doe.gov/docs/oipds/main.html`.

This behavioral based safety process can be used as a tool for reduction of injuries and illnesses within a work environment based on an employee peer-to peer observation and communication model; in other words, employees talking to employees and taking personal responsibility to improve safety thus reducing injuries and illnesses.

According to John Turek, SHA Safety Engineer, "We know where we want to be, now the question is which path are we going to take to get there. I believe that Behavior Based Safety is the best path."

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

SLAC Flea Market

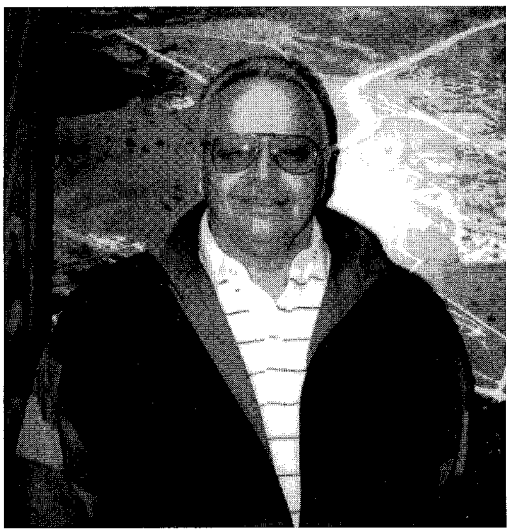
Do you have stuff to sell, rent, or give away? Do you need volunteers for an event? Are you looking for just the right "thing" and can't find it anywhere? Use the SLAC Flea Market to advertise to the SLAC community.

The Flea Market page is located at `http://www.slac.stanford.edu/slac/fleamarket/slaconly/`. There is a link to it from the home pages under "Working at SLAC - General - FleaMarket." The page can only be viewed from SLAC computers. Ads are posted for one week. If you want the ad removed prior to its expiration date, contact Walter Kaye (boo@slac.stanford.edu, ext. 4983) or myself (mcdunn@slac.stanford.edu, ext. 2014) and one of us will take care of it.

The submission form is located at `http://www.slac.stanford.edu/slac/fleamarket/slaconly/forms.html`. Please read the posting guidelines before using this automated system. Ads are reviewed for appropriateness before they are posted.

–Ruth McDunn
`http://www.slac.stanford.edu/~mcdunn/mcdunn.html`

Petty Cash Driver Retires



DON STILES, THE PETTY Cash Driver, will retire in mid-April. Many of you know Don as the fellow who has cheerfully been providing the petty cash pickup and delivery services lab-wide. In his ten years of service, there has not been one complaint. Given the lab culture, this is a strong vote of confidence!

Don has been an outstanding lab employee. He is a warm person and has made many friends throughout the lab. The characteristics that make him successful are his good nature, reliability, and commitment to individuals. When Don said, " it'll be there," people could rely on his word. He will be missed.

The demand for SLAC's Petty Cash Pick Up Service has diminshed substantially with the increased use of the purchase cards. Effective with the retirement of Don Stiles (on April 16, 1999), the Petty Cash Pick Up Service will be discontinued.

This does not affect the Petty Cash window; the hours remain 9 - 10 AM and 2:15 - 3:15 PM.

–J. Hubbard

SLAC Milestones

RETIRED
Brenner, Barbara, SCS, 3/5/99
Vinson, Ilse, SCS, 3/12/99
Keicher, Al, RD, 3/31/99

DECEASED
Stanley-Duffy, Louise, Retired, Electronics Dept., 3/7/99
Wiik, Bjoern, DESY, 2/26/99

AWARDS

Riordan, Michael, Guggenheim Fellowship, for his continuing work on a historical study of "the rise and fall of the Superconducting Super Collider."

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