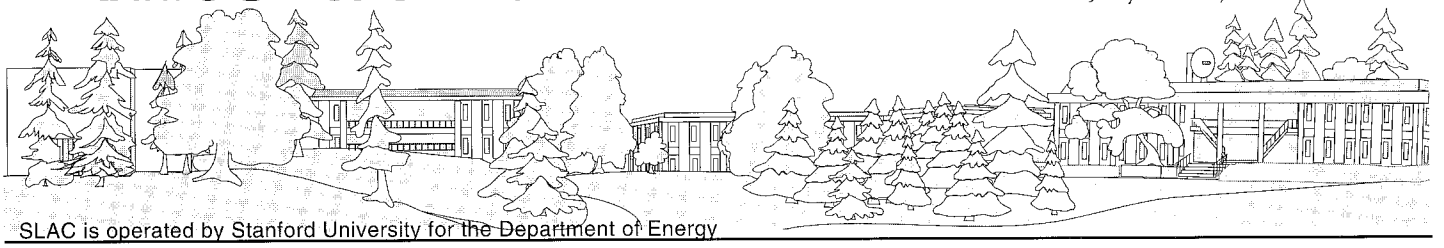
The Interaction Point

Events and Happenings in the SLAC Community
July 2001, Vol. 12 No. 6



SLAC is operated by Stanford University for the Department of Energy

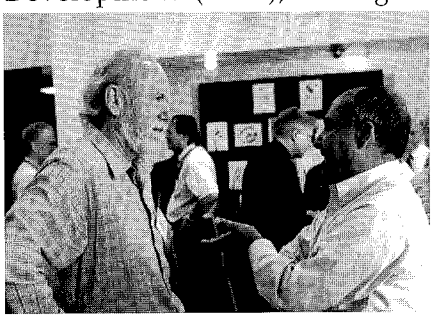
An Important Time for High-Energy Physics

AS JONATHAN DORFAN OUTLINED in his *Interaction Point* Director's Column in May, the DOE High Energy Physics Advisory Panel (HEPAP) visited SLAC on May 23rd and 24th. This was one of many DOE laboratory stops they will make to gather input toward the challenging goal of long-range planning for US High Energy Physics (HEP) programs.

Dorfan welcomed the panel to SLAC at the start of the two-day visit stating, "We are on the cusp of major discoveries in this field." He stressed the importance of experimental as well as theoretical research efforts. Outlining such physics drivers as the origin of Mass, Flavor, Dark Matter, and Dark Energy, Dorfan emphasized the need for balance among the laboratories doing such research—in other words, global planning.

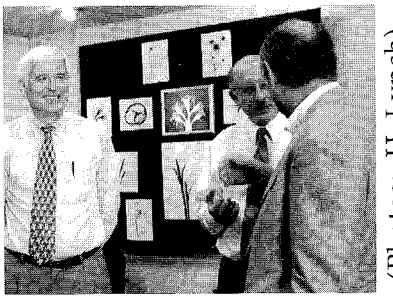
Just as the historical complementarity of electron and proton machines laid the foundations of the Standard Model, a frontier facility such as an electron positron linear collider would serve as an essential complement to the Large Hadron Collider (LHC), thereby providing an even larger discovery reach. SLAC has helped to develop this research direction through its past and present projects and anticipates playing a central role in the construction and operation of a 500 GeV center-of-mass Linear Collider, independent of its location or technology. Dorfan ended his talk with a suggestion that we all be bold, since "conservative planning is a recipe for mediocrity."

SLAC was allotted about five hours to make presentations over the two days in the areas of the Next Linear Collider (NLC), the B Factory (PEP-II and *BABAR*), GLAST, and Advanced Accelerator Research and Development (R&D), among other topics. Invited senior scientists George Trilling of LBNL, and Sidney Drell and Burton Richter of SLAC shared perspectives.



The HEPAP Meeting provided valuable time for colleagues to have informal discussions.

Drell acknowledged he was giving "the perspective from the grandfather, you understand" and encouraged the panel to choose a path "consistent with the United States remaining among the world leaders in this field of fundamental science." He called out the key elements of a world-class program: a diverse and dynamic research effort, vigorous studies to master the technologies for future machines, and significant participation at the HEP frontier, namely the LHC at CERN. Drell emphasized the need for consensus building, calling upon the HEP field to do a better job in explaining to other scientific fields why this proposed new facility (the linear collider) is so important to us. "It is time to commit to the next major step forward," he concluded, referring to the last major endorsement of high energy physics, the Superconducting Super Collider (SSC) over seven years ago. Echoing the sense of urgency relayed by the previous speakers, Drell called upon the Advisory Panel to take full and immediate advantage of the excellent opportunity presented by the proposed NLC.



(Photos: H. Lynch)

Lab Director Jonathan Dorfan (center) chats with HEPAP participants betweeen sessions.

Richter outlined possible scenarios for the next twenty years saying, "The subpanel has to lay out a course to preserve the vitality of the program." He pointed out that the linear collider is the only Big Machine that could start construction in the middle of this decade and that Japanese and European physicists are already committed to it as the next facility. He endorsed R&D efforts on muon systems, the Very Large Hadron Collider (VLHC), and advanced electronic accelerators, and said upgrades will be needed in programs such as the SLAC B Factory if their vitality is to be retained until the linear collider turns on.

The twenty-person HEPAP subpanel will report their findings and recommendations to the DOE and National Science Foundation (NSF) in the fall of 2001 after they conclude their nationwide meetings.

–Janice Dabney

Space Crunch—Help is on the Way

–Jonathan Dorfan

OUR USER COMMUNITY HAS grown dramatically in the past five years. Today, more than 3000 researchers from roughly 25 countries work at SLAC. This growth reflects the exciting research opportunities at our Laboratory. However, it has placed additional stress on our staff working on user intake and orientation, experimental support and training, housing, and international services. In some cases we have added extra staff – but some areas remain understaffed. The physical infrastructure in areas such as parking, office space and meeting space are stretched to their limit.

The problem with insufficient offices and meeting rooms is most acute and is exacerbated by the fact that some of our older, trailer-type buildings need to be retired. The problem is different for each of our two user communities. The SSRL users need short-term space on a rotating basis reflecting the short duration (days to at most a few weeks) of their experiments. The high energy physics user groups commit to multi-year experiments (*BaBar* and GLAST will likely last ten more years) and station large fractions of their research groups at SLAC. They need permanently assigned space, and lots of it.

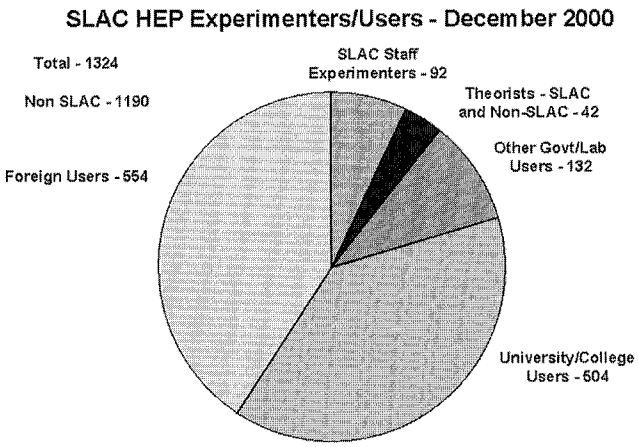


Figure 1: The demographics of the high energy physics users.

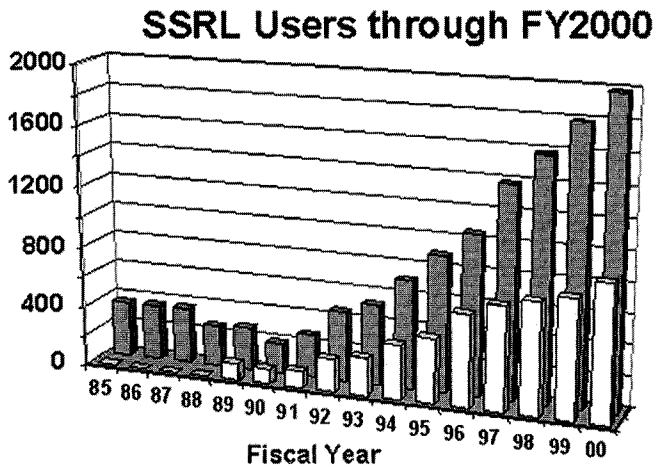


Figure 2: The historical growth of the SSRL user population. The dark bars represent all the users who do their science at SSRL. The light bars represent those users who work exclusively at SSRL.

The Research Office Building (ROB) currently under construction next to the A&E Building will greatly alleviate the shortage of permanently assignable space and allow us to begin the process of retiring aged trailers. The ROB, paid for by DOE funds, will be ready for occupation in late December 2001. It will house 150 people, all from *BaBar*, of which 75% will be users and 25% will be SLAC staff. The vast majority of the occupants of the ROB will be relocating from Building 280; the rest will come from the Central Lab. While not yet finalized, the space vacated in Building 280 will likely be taken over by the NLC and GLAST groups. If NLC moves from its present home in SLC City, we will be able to retire the outlying buildings in that cluster. The ROB will alleviate overcrowding for our high energy physics program and provide much-needed expansion space.

The ROB will also provide relief in the area of large meeting rooms and conference rooms. The building will have one large meeting room (2500 square feet, or half the size of the Training Center) and three smaller conference rooms. The large room will be especially helpful for staging reviews and large-scale meetings, which often get broken down into smaller, but still sizeable, sub-groups.

The need for additional short-term space for the SSRL program remains unsolved at this time and efforts are underway to seek solutions.

Behavior-Based Safety Process Underway

(Photos: L. Williams)

(l-r) START Steering Committee: Lovetta Dunn of OHP; Dave Toews, Mike Smith, Raimond Cuadrado, and Barry Webb, all of SEM; and John Turek, ES&H Safety Officer. Not pictured: Anthony Acosta (SEM), Jim Dayton (OHP).

SAFETY STARTS WITH US!" This is the premise that underlies the behavior-based safety process at SLAC. The goal is to bring people's knowledge of their jobs and working conditions into a communication loop to improve SLAC's health and safety on the job. In the behavior-based safety process, employees, the United Stanford Workers, and SLAC management work together to identify and remove barriers to a safe work environment.

A simple but very practical application of the behavior-based safety process is to work with employees to find out what tool should be used to perform a job safely, and then to use the process to obtain that tool. A broader-range example would be an employee noticing that he or she is at-risk for hearing loss when working in noisy rooms. The worker might suggest to the people in the process that hearing protection, such as earplugs, be placed immediately outside doors of noisy rooms. Then, through the process, the suggestion is able to reach the right SLAC department or standing committee to make the idea a reality!

(l-r) PAWS Steering Committee, all of MFD: Mike Zurawel, Janet King, and Terry McCaffrey. Not pictured: Al Suarez.

Phase I of the project, called START for "Safety Towards Avoiding Risk Today," was initiated in Operational Health Physics (OHP) in the ES&H Division and the Site Engineering and Maintenance (SEM) Department in the Technical Division (TD). Some employees in those departments gathered together to form a Steering Committee and "Observers" for the process. Ronald Anderson, an auto mechanic specialist and a START Observer in the Transportation section of SEM, says that he has noticed a distinct increase in safety awareness since the program started. Phil Brunner, Lead of the Carpentry Shop in SEM has a high regard for his co-workers. His goals as a START Observer are to help his co-workers work safely and to give a helping hand whenever needed.

Two years ago, John Turek, Safety Engineer in ES&H, initiated behavior-based safety processes at SLAC after evaluating several different DOE incident prevention programs. The SLAC process adds a distinct blend of employee, Union, and line supervisor involvement for confidential identification of unsafe conditions. The conditions are reviewed by the process steering committee with recommendations provided to line management, SLAC safety committees, or ES&H for corrective action. Thanks to the success and support of the employees in Phase I of the SLAC process, Phase II, called PAWS for "Prevent Accidents, Work Safe," was started on March 27th in TD's Mechanical Fabrication Department (MFD).

–Larissa Williams and John Turek

Call for EPAC Proposals

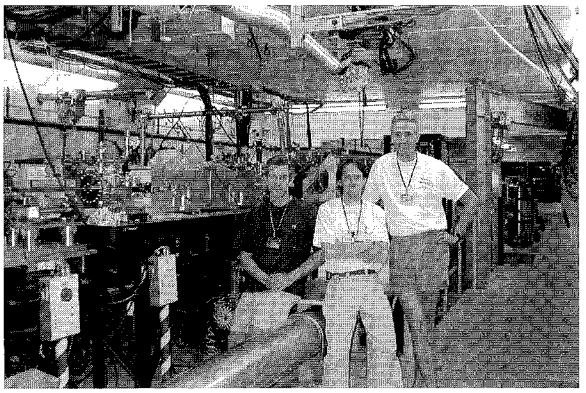
THE EXPERIMENTAL PROGRAM ADVISORY COMMITTEE (EPAC) advises the Director on the selection of experiments for the high energy physics program. The next EPAC meeting will be held September 24 and 25. Proposals and Letters of Intent should be sent to the EPAC Secretary (Charles Young, MS 96, or young@slac.stanford.edu) no later than August 24. You can find more information on EPAC at `http://www.slac.stanford.edu/grp/rd/epac/index.htm`.

–Charlie Young

Labor Pool Says "Thanks"

ROBBIE ROBINSON AND BILL Brooks would like to express their appreciation to all SLAC departments for their cooperation with SEM's Labor Pool over the past year. All departments have willingly complied with the Labor Pool's request that materials being moved be correctly labeled and packed in boxes. This insures that proper care is given during relocation of SLAC staff members and materials. The Labor Pool welcomes the opportunity to serve you.

The Wave of the Future: SLAC Experimenters Pioneer Plasma



(l-r) Brent Blue, Patrick Muggli, and Mark Hogan at the FFTB Focal Point.

IT HAS BEEN SAID that the history of science is the history of scientific instruments; that advances come when the potentials of new instruments are embraced to look in new directions. During the last two years here at SLAC, the E157/E162 Collaboration has broken new ground in the quest to probe nature's smallest scales by accelerating and focusing electrons in a fundamentally new way. These experiments have used electrostatic waves in "plasmas," the ionized gases found in fluorescent light tubes, to give particles from the SLAC two-mile linac an extra kick to higher energy while simultaneously focusing them as a collimated beam. So energetic is this plasma-wave acceleration process, that this method may someday enable us to reach energies a hundred or more times higher than the existing linac, but in the same length. These exciting experiments have been mounted by a diverse group of accelerator, laser, and plasma researchers.

Although the concept of a "plasma-wave accelerator" has been around for over 20 years and small-scale experiments have demonstrated the principle in short, millimeter and centimeter-long plasmas, the E157 experiment is the first to use long plasmas to obtain energy gains of interest to accelerator builders. The acceleration chamber containing the plasma is in fact the same length as a typical fluorescent light tube, about 1 1/2 meters. The energy increase per meter of electrons in these first experiments has already been measured to be about five to ten times higher than in the copper accelerator cavities of the SLAC linac. Unlike metallic cavities that suffer electric breakdown (sparking) at high fields, plasmas have no corresponding field limit since they are already ionized.

The plasma acceleration process explored in E157 begins with the 28 GeV electron beam from the linac. Roughly one millimeter-long bunches, each containing about twenty billion electrons, are delivered through the beam switchyard at a rate of 1 or 10 Hz to the Final Focus Test Beam Facility (FFTB). "We use SLAC's high quality beam to both power the plasma accelerating wave and provide a few test particles to get accelerated by it," said Mark Hogan. The "plasma accelerator cell" is a 1.4 meter-long oven containing lithium vapor at 3×10^{15} atoms per cubic centimeter, which was installed in a drift space of the FFTB transport line. To create the plasma, an ultraviolet laser pulse of 100 millijoules per square centimeter is used to ionize a one millimeter-wide column lengthwise through the lithium vapor just prior to the bunch's arrival.

Plasma densities of about 2×10^{14} electron-ion pairs per cubic centimeter are used in these experiments. The key to particle acceleration in a plasma is to produce a charge separation of the positively-charged lithium ions and negative electrons, and hence a local electric field, which travels as a wave through the plasma. In E157 the method for generating a traveling electrostatic wave in the plasma is analogous to a boat creating a wake in the water. The incoming electron bunch repels the plasma electrons since they have the same negative charge. The heavy lithium ions remain and provide a focusing force to the beam. The plasma electrons later try to flow back in where the ions are, just as water rushes in behind a moving boat. The water in the wake then sloshes back and forth in waves following the boat. Particles making up the tail of the bunch experience the plasma wake and "surf" on the strong electric fields, gaining energy very quickly. As Patrick Muggli, from USC, commented "I always thought of a 30 GeV beam as being really stiff and difficult to move, but the fields in these plasmas are so tremendous that the SLAC beam can be significantly accelerated and even pushed sideways in just centimeters!"

Precise diagnostic techniques were essential for measuring plasma effects on beam particles. To determine the energy gained by electrons from the plasma wake, a dipole magnet was used to bend the beam after the plasma region. Higher energy particles are bent less by the dipole than lower energy ones, and the beam ends up being spread transversely according to energy. Passing this spread bunch through an aerogel cell, the emitted Cerenkov radiation was then time-

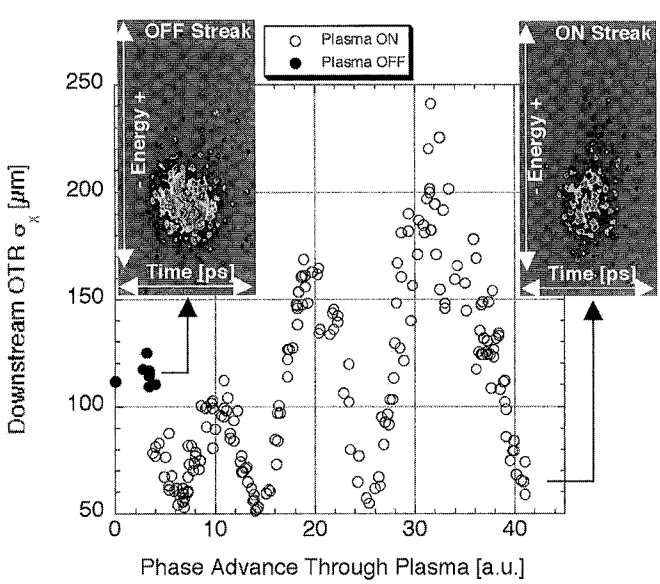


Figure 1: Betatron Oscillations and Acceleration

Acceleration and Focusing

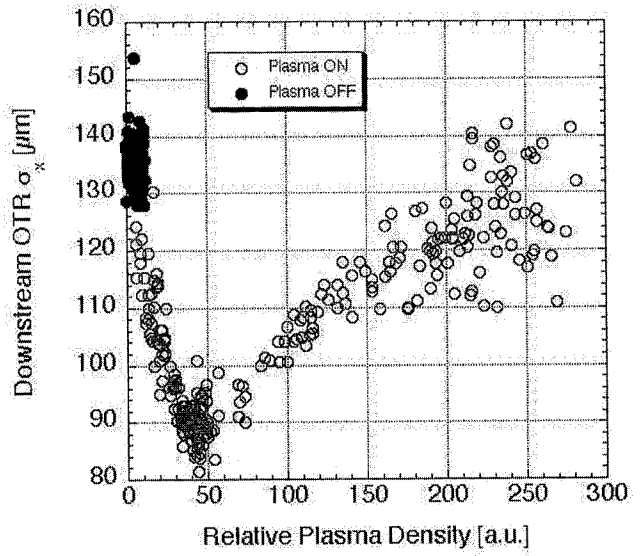


Figure 2: Positron Focusing

resolved in a "streak camera" in which light is recorded along a charge-coupled device (CCD) used in digital cameras according to when it arrives.

Transverse focusing of the beam is determined by measuring the beam profile before and after the plasma. To do this, the radiant spot of optical transition radiation (OTR), caused by the beam intercepting thin titanium foils inserted in the beamline, is imaged. The beams are only about a tenth of a millimeter wide requiring high-resolution imaging, and Figure 1 (left) shows the variations in transverse beam size seen in the experiment. It also shows the 16 picosecond "streak" images of the bunch in which early light from the bunch's head is at left and light from the tail is on the right. When the plasma is on at resonant density, a few tail particles, which gained about 125 MeV, are seen above the lower energy beam core.

The dramatic plasma acceleration and focusing effects seen in electron beams encouraged the collaboration to propose a new experiment, E162, to study the plasma acceleration and focusing of positrons (the antimatter of electrons, which are used in electron-positron colliders). To observe the more subtle effects produced by the positron beam–plasma interaction, the plasma was moved roughly 20 meters upstream to the focal point of the FFTB. The improved magnetic optics at the focal point will allow the collaboration to study matched beam propagation through a long plasma and build an imaging spectrometer to improve the acceleration measurements. The new experiment was approved and is performing three runs at the FFTB during the spring through fall of 2001. Figure 2 (above) shows a preliminary E162 finding of plasma focusing of positrons in the 1.4 meter-long lithium plasma. These

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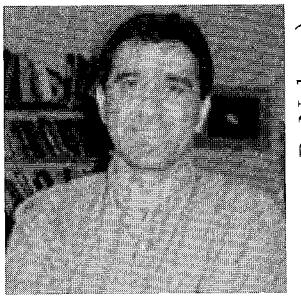
New Appointments for Rokni



(Photo: R. Nelson)

SAYED ROKNI WAS APPOINTED Head of Radiation Physics effective June 1st by ES&H Division Associate Director Ken Kase. Another appointment quickly followed from SLAC Director Jonathan Dorfan, naming Rokni as SLAC's Radiation Safety Officer (RSO), in which capacity he reports directly to Dorfan. He replaces Nisy Ipe, who recently left SLAC, in both of these important roles.

Rokni began his career at SLAC as an Engineering Physicist in 1989 in the Experimental Facilities Department (EFD), where he participated in the planning, construction and commissioning of the Final Focus Test Beam (FFTB). Prior to that time, he was a Research Associate for the University of Massachusetts, Amherst, working on the experimental nuclear physics program (PEGASYS) and the NE-11 collaboration at SLAC, as well as on experiments at the MIT Bates Linear Accelerator. Rokni earned his PhD in Physics from Utah State while working for 5 years at Los Alamos National Laboratory on his thesis project. He began his physics curriculum at the Pars College in Tehran, Iran where he got his BS degree. A staff member of Radiation Physics for almost 10 years, Rokni has served as Assistant Department Head for the past 2 years. He is well known for his work ethic and his strong contributions to many SLAC projects, including NLC, LCLS and improvements in Radiation Safety systems.

Rokni continued working on research projects after transferring to Radiation Physics and has collaborated on End Station A (ESA) and FFTB experiments. He has initiated several collaborations with Japanese Radiation Physicists to further the understanding of neutron production and attenuation. He achieved a professional certification from the American Board of Health Physics, and was subsequently selected by Nisy Ipe to serve as her Deputy. As his reputation grew, Rokni was asked to serve on many design and safety review committees.

Rokni enjoys a close relationship with his parents and siblings. They all welcomed his wife, Azita, into the family when the two were married last year. Rokni is well liked and respected by his colleagues in the Radiation Physics Department and the SLAC community. It is certain that his group will continue to show strong professional growth under Rokni's leadership.

–Ted Fieguth

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Employee Recognition Awards: "World Class People Make a World Class Laboratory"

(Photo: SU Visual Arts)

The awardees, joined by Jonathan Dorfan and Steve Williams, are (in alphabetical order): Neal Adams, Ron Akre, Jim Allan, Terry Anderson, Terry Ash, Al Baker, Greg Bologoff, Kathy Burrows, Stephanie Carlson, Janice Dabney, Eduardo do Cuoto e Silva, Wanda Gorecki, Gail Gudahl, Jean Hubbard, Roosevelt Hutchinson, Ray Larsen, Ziba Mahdavi, Leslie Normandin, Anna Pacheco, Mary Parish, Roslind Pennacchi, Hector Prado, Helen Quinn, Jane Rochester, Angie Seymour, Todd Slater, Marty Sorensen, Cherrill Spencer, Susan Witebsky, Nadine Wright, Rick Yeager, Tracy Yott. Not pictured: Cherrill Spencer, Ray Larsen.

THE FIRST ANNUAL SLAC EMPLOYEE Recognition Awards was held at the Stanford University Faculty Club on June 19th to honor 32 SLAC employees. These awardees were nominated and selected by their peers for their extraordinary efforts in serving the SLAC community and making SLAC a better place to work.

After a luncheon, Jonathan Dorfan presented each recipient with a crystal "Globee," SLAC's version of an Oscar or an Emmy. This globe and the certificate presented conveyed the award's theme: "World Class People Make A World Class Laboratory."

"It was a wonderful occasion," remarked Carmella Huser, Employee Relations Manager. She shared some of the comments on the nominating ballots, including: "He is always willing to lend a hand and a word of encouragement to anyone." "She is a real team player and contributes to high staff morale." "For twenty years, she has shown us nothing but love, respect, and courtesy." "People like him make our visitors' lives easy, contribute to their effectiveness and give SLAC a good name."

–Teri Peterson

Cafeteria Prices Increased

THE SLAC CAFETERIA, which is operated by the Guckenheimer Corporation, has enjoyed stable prices for a number of years. This stability was made possible by the terms of the contract with Guckenheimer which requires SLAC approval of any price increases and which provides for an operating subsidy (up to a negotiated maximum) to be paid to Guckenheimer if the cafeteria operation fails to break even. The maximum annual subsidy is set at the beginning of each fiscal year and the amount actually paid has been steadily increasing for several years.

The time has come when we must raise prices to more adequately cover the costs of operating the cafeteria and to ensure that Guckenheimer has an opportunity to earn a fair profit. Consequently, beginning June 1st, food prices at the Cafeteria were increased by an average of 15%. This level of price increase was determined as necessary and fair based on a survey of the prices charged by local food service providers for similar items, the amount of the annual shortfall in revenue needed to cover costs, and the amount of subsidy SLAC can reasonably afford to pay. It should be noted, however, that even with this price increase the SLAC Cafeteria is still a bargain when compared to the prices charged by the local competition for breakfast and lunch faire.

–Jerry Jobe

Energy Management Update

SLAC NOW HAS AN Energy Management website. You may visit it by starting from the SLAC home page and clicking on the "Working at SLAC" link and then going to the "Energy Management" page. Included is a link to an LBNL page entitled "Today's Supply of and Demand for Electricity in California," which graphically displays real-time statewide electrical consumption, forecast and capacity. There are also Energy Conservation Tips and a link to the PG&E home page. It displays California ISO's real-time emergency warning alerts, which occur when the available "reserve capacity" in California drops below certain levels. When Stage 2 or Stage 3 emergency alerts are announced (reserves are less than 5% and 1. 5%, respectively), all Federal facilities are required to rapidly reduce power consumption by shutting down electrical loads such as non-essential cooling systems, lighting, elevators, etc. SLAC is committed to comply with this requirement.

The SEM department continues compiling, evaluating economic criteria, and prioritizing energy conservation proposals from SLAC staff. Some examples are: many employees would like to see reduction of lighting in the SLC arc tunnels, which currently have minimal activity; Al Baker and Tom Graul, of the Accelerator Department, proposed installing photovoltaic solar panels on the Klystron Gallery roof to power the gallery lighting and the PPS batteries; A&E building occupants came up with generic and building-specific energy conservation tips.

Please—continue to implement simple no-cost or low-cost energy conservation measures, as they noticeably save kWs and therefore money for SLAC. Submit your ideas/proposals to Luda Fieguth, x3422, lcantor@SLAC.Stanford.edu or to Burl Skaggs, x2245, burl@SLAC.Stanford.edu or through the Energy Management website.

–Luda Fieguth

Wave of the Future

(continued from Page 5)

results follow the first-ever observation of plasma focusing of positrons reported by the E150 Plasma Lens Collaboration last year in three millimeter-long, hydrogen and nitrogen plasmas (see *The Interaction Point*, June 2000).

It is hoped that novel particle acceleration and focusing techniques such as these will continue to open new windows for us on nature's intricate workings at the subatomic scale. The development of high-energy particle accelerators requires the talents and contributions of many people. The members of the E157 and E162 Collaborations express their sincere gratitude to the entire SLAC workforce whose daily efforts have helped make these experiments successful.

–Mark Hogan

Physical Review Online Archive (PROLA) Complete

"GREETINGS ALL," CHIRPED the mass e-mail sent to physics libraries in every academic outpost and outback. "The final 27,000 or so articles covering 1893-1957 were added to PROLA moments ago. This means that PROLA is essentially complete..."

The message had the air of "one small step for mankind" for librarians and physicists familiar with the evolving and sometimes chaotic world of online serials searching.

As of May 14, all American Physical Society (APS) material from 1893-1997, with few exceptions, is now available from a computer screen. A PROLA mirror site was added on June 7, hosted by the Cornell University Library to ensure better connectivity and round-the-clock access to PROLA subscribers.

The PROLA project is, however, far from finished. APS has an agreement with the Library of Congress to provide a long-term repository for PROLA files. Future plans also call for links to citing articles and more linking between articles. There will also be an option to download lower resolution PDF's for more universal and equitable access for those who lack the latest computer hardware.

Access the Physical Review Online Archive at `http://prola.aps.org`. The Cornell mirror site is available at `http://prola.library.cornell.edu/`.

–Lesley Wolf

Annual SLAC Commencement

35th Annual Stanford Commencement Tours of SLAC: A host of volunteer guides toured family and friends of Stanford graduates around the lab following Terry Schalk's (UC Santa Cruz) lectures on campus. Pictured (l-r): Bebo White (SCS), Lance Dixon (Theory Group), Jack Fry (ESH), Norma Kisman (PAO), Franz-Josef Decker (AD), Nina Stolar (PAO), Julia Thom (Stanford U), Fred Murphy (BSD), Steve Sekula (U of Wisconsin, Madison), Darnell Clay (PAO), Jose Martinez (Mountain View HS), Mark Long (PAO), Greg Bologoff (BSD) and Dak Baltazar (ESD).

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

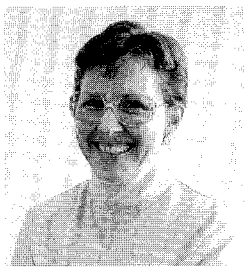
A Good Web is a Clean Web

I OFTEN NOTICE MULTIPLE versions of the same file on the SLAC web, usually in the same directory. For example, an author might revise the main page on their site (`index.html`) but keep the old version, after renaming to something like "`index-old.html`." During the development process, keeping backups is a good idea. However, if the old page remains on the web site it will eventually appear in our search index. And, if the file is located in public web space (viewable from off-site), it will also be indexed by any number of off-site search tools. Therefore, someone searching for information may retrieve the old page rather than the current page and receive misinformation. There are several ways you can eliminate clutter in your web space.

1. **Hide the files.** Put files you don't want searched in a subdirectory named "archive" or "_private," which is a directory created automatically by FrontPage. Web server administrators use a "robots.txt" file to disallow indexing of these named subdirectories.
2. **Move offline.** If you want to keep copies of old files, move them off the web server. Use FTP, TransArc, or even your web browser to make a local copy of files for backup.
3. **Use development space.** On Unix, your public space (located in your public html directory) is not indexed. On NT, web sites located on `www-user.slac.stanford.edu` are not indexed. These webs are development space—once the new web pages are developed and tested, move them to the real web server.

Happy cleaning!

Snakes and Shadows



OPERATING SAFETY COMMITTEE members are continually addressing how to strengthen communications. We are pleased to have been notified of at least three issues in the past month. Tapping other resources on site, we were able to move ahead on all issues:

- People sometimes deliberately run over critters (snakes, lizards, etc.) on the Gallery Road rather than trying to avoid hitting them. Both Security and Environmental Protection & Restoration folk confirmed the importance of protecting Stanford wildlife and are doing a further check on any policy statements issued in the past. The *QuickNews* editor also assisted by including it in a recent weekly column.
- A pedestrian/auto "blind" entryway exists off of the Bldg. 50 parking lot near the Sector 30 guardshack. With an additional suggestion from an OSC member, Security has submitted a request to move the stop sign closer to the Sector 30 road and to mount a mirror to assist both drivers and pedestrians.
- Drivers with the morning sun on their windshields may not see pedestrians walking in the shade of the Loop Road who step out to cross the road. An article in the SLAC *Bulletin Board* will address the concern about morning sun glare and pedestrians walking on SLAC roads.

So next time you think your voice doesn't matter, think again!

–Janice Dabney
Chair, Operating Safety Committee

Milestones

RETIRED
Hendry, Nancy, DO, 6/30/01

PROFESSIONAL CERTIFICATION
Fieguth, Luda, SEM, awarded Certified Energy Management (CEM) title by Association of Energy Engineers, for passing examination, 4/4/01

AWARDS
Wethington, Pauline, Public Affairs, Service Recognition, Student Transition Academic Retention Services (STARS) Program 2001, De Anza College

CITIZENSHIP AWARDED
Remerata, Gary, Mail Services, sworn in as a US citizen on 6/28/01

Email milestones to tip@slac.stanford.edu. The *TIP* website, `http://www.slac.stanford.edu/pubs/tip/tip.html` has expanded Milestone coverage! You may submit items to this website online.

Work Safe, Work Smart

Two injuries involving days away from work have been reported since the last update. The dates of injury are 5/14/01 and 6/14/01 according to Sharon Haynes, Workers' Compensation Coordinator. Because the last injury involving days away from work occurred on 4/12/01, SLAC's record number of days between claims remains at 184 days.