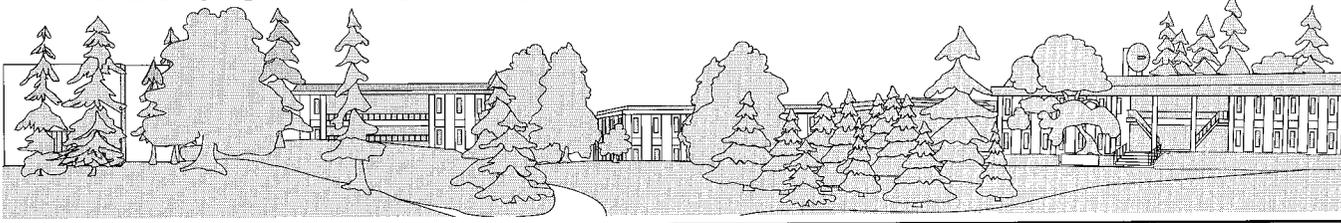


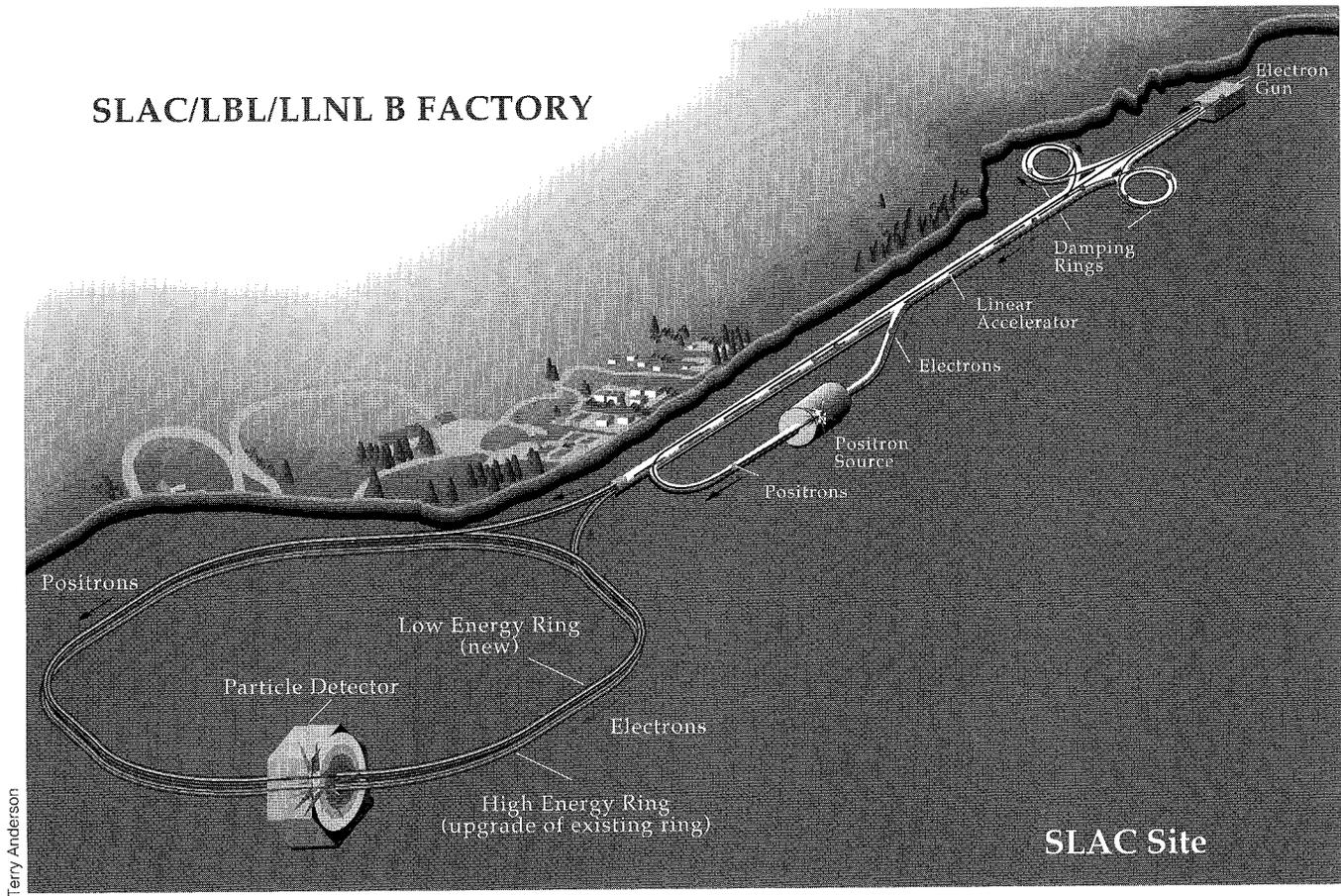
# The Interaction Point

Events and Happenings  
in the SLAC Community  
March 1994, Vol. 5, No. 3



## B FACTORY OFF TO GREAT START

### SLAC/LBL/LLNL B FACTORY



Terry Anderson

SLAC Site

### by Sarah Morisseau

SLAC IS A-BUZZ with preparations for the *B* Factory, not the least of which is the recent decision to make PEP-II a formal division of SLAC.

Director Burton Richter announced the decision in a February 17 memo to the directorate. Jonathan Dorfan, project manager of the *B* Factory, is now the Associate Director of PEP-II. "It is my intention that this organization

structure will persist through the commissioning phase of the project (one to two years after turn-on) at which time the organization will be restructured," Richter said in the memo. The PEP-II Detector Project is a part of the Research Division, which David Leith directs.

The memo also states that an "interlaboratory coordinating committee" has been established to keep the directors of SLAC, Lawrence Berkeley Laboratory,

and Lawrence Livermore National Laboratory informed of the *B* Factory's progress. Dorfan (or his designee), Bill Barletta of LBL, and Tony Chargin of LLNL are members of the committee.

"We're off to a great start," Dorfan says. "The three labs are working very well together on the machine, and the detector collaboration looks good, too."

Currently, there are eight nations participating in the detector

See **PEP-II**, page 2

# LIBRARY, PUBLICATIONS ENTER NEW ERA

DURING THE LAST YEAR it was hard for most of us to imagine that anything good could come out of the cancellation of the SSC. But the demise of the Texas particle physics lab has provided SLAC with the skills of many extraordinary physicists, engineers, and professional staff. One of these is Pat Kreitz, who has quickly assumed her new responsibilities as Manager of the SLAC Library and Publications Office. She is delighted to be joining two impressive departments that are strongly service oriented.

Pat brings to SLAC a breadth and depth of professional experience. Since 1989, as Manager of Library and Information Services at the SSC, she has concentrated on building, with her staff, a state-of-the-art research library. The value of the services provided was reflected in use statistics that doubled yearly, even when controlled for annual population growth.

Although recently a resident of the Lone Star State, Pat is no stranger to the Bay Area. From

1979–1989, Pat worked at the UC Berkeley Library. Initially a Reference Librarian, she rose quickly to become Head of General Reference Services for the graduate library. Pat's on-the-job experiences are complemented by an active role in professional activities within regional consortia and the American Libraries Association. Additionally, Pat's educational background includes graduate degrees from the UC Berkeley School of Library and Information Studies and from the UC Davis Department of History.

Currently, the SLAC Library is one of the world's leaders in providing electronic access to HEP preprints. The Publications Office is making some exciting innovations in electronic information delivery as well. One of Pat's two primary goals will be to ensure that her staff have the resources they need to continue to improve electronic access. A second challenge she faces is to look at users' needs within the life cycle of SLAC's scholarly and institutional



Pat Kreitz

information production. She wishes to ensure that the access, production, and dissemination processes are integrated and made as efficient as possible for both internal and external users. Pat invites interested users to help her and the Library Committee develop a service vision to meet this challenge. She can be reached at ext. 2411.

—Robin Chandler

## **PEP-II** *Continued from page 1*

collaboration: Canada, China, France, Germany, Italy, Russia, the United Kingdom, and the United States. Dorfan speculates that more countries will join in June, when the 200-page letter of intent from the collaboration is due. A final engineering proposal will be submitted to the lab by the end of the year.

The third meeting of the collaboration will take place in Paris at the end of March. Collaboration meetings are held every six weeks where the participating physicists consolidate the work they are each doing separately.

President Clinton's budget proposal for FY95 includes \$44 million for the B Factory. Because the B Factory was awarded \$36 million this year, Clinton's proposal would give the project 45 percent of its total funding in just two years. "If it holds up in Congress, we'll be in great shape," Dorfan says.

A building is being constructed to house the key people of the project; it will be placed in a yet-undecided location by the end of the summer. The magnets from the old PEP ring are being dismantled, and the tunnel should be cleaned out in nine months or a year.

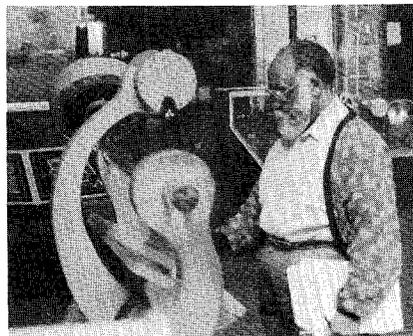
## Welcome Guests and New Employees

Hideki Aoyagi, Accelerator; Sabine Bassen, SSRL; Ulrich Becker, Klystron; Thomas Gwise, Environment, Safety, & Health; Nativitateo Halafihi, Personnel; Shari Harper, Purchasing; Natasha Kelley, Purchasing; Douglas Kreitz, Business Services; Patricia Kreitz, Library; Nguyen Nguyen, Facilities; John Rees, B Factory; Craig Scott, Property Control; Stephen McNeil, Property Control; Katsunobu Oide, Experimental Group I; Karl Young, SCS.

# Teachers Visit Exploratorium

THE SAN FRANCISCO Exploratorium was the site of a follow up meeting for teachers who participated in SLAC's Particles and Interactions workshop last summer. Twice during the academic year, teachers from past workshops gather to share lesson plans, ideas for hands-on activities, and resource information pertaining to teaching physics in high schools or community colleges.

On this occasion teachers had the Exploratorium to themselves, and played with exhibits before the museum officially opened. Later in the day they participated in discussions about classroom applications. Teachers enjoyed the opportunity to talk with SLAC physicists Helen Quinn, Willy Langeveld, and Marvin Weinstein. Exploratorium Director Thomas Humprey gave a presentation on the strengths of interactions, using beta decay as an example.



P.A. Moore

*Al Robeson, from Fremont High School, studies the exhibit Visible Effects of the Invisible, which uses kerosene within a resonating air column to make visible the nodes and antinodes of the vibration.*

The next meeting of the teachers will be in late April. Any SLAC personnel who want to participate in these education meetings are invited to attend. Contact P.A. Moore at the Education Office, ext. 3826, for further information.

—P.A. Moore

## Correction to "SSRL E-Mail Solution"

IT IS NOT TRUE THAT the e-mail address of SSRL employees must take the form: **name@slacvm**. If you are not sure of the person's e-mail address, look it up in the binlist database. For example, on SLACVM you can use the command **binlist <name>** or in a UNIX shell, the command **person <name>**; type the person's name for **<name>**. Binlist will tell you the e-mail address for that person. For example, if you type: **binlist cantwell**, binlist responds with the following information: Cantwell, Katherine; Mail Stop 69; X3191; Bldg: 137; Rm: 310; Grp: SSR; Send e-mail to: **cantwell@slac.stanford.edu**.

Unless you are certain of someone's e-mail address at SLAC, it is not necessarily safe to assume that the VM id you knew for them in the past before generic mail routing, nor the address SLACVM will work. It is best to look up the address in binlist.

—Ilse Vinson

# Medical Department's New Health Educator

THE MEDICAL DEPARTMENT has a new Health Educator. Sylvia Ong comes to us from Intevac, EO Sensors Division in Palo Alto where she developed, implemented, and coordinated an Employee Wellness Program, Employee Safety Incentive Program, and Ergonomic Program. Prior to that, she developed and implemented various health education programs at Lockheed Missiles and Space Corporation. Sylvia also holds certification in Emergency Response Team Training.

Sylvia's training includes an Associate Degree in Business Management at Rose State University in Oklahoma followed by a BS in Health Science from San Jose State University with a concentration in



Sylvia Ong

Occupational/Community Health Education.

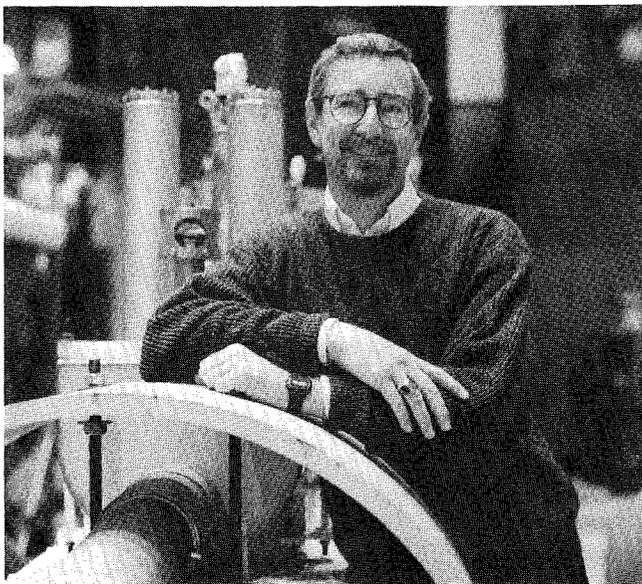
Sylvia came to Health Education through her desire to gain weight. She looked around for guidance, but sensible healthy

information and alternatives were hard to find. A nutrition class seemed the logical way to obtain the information she needed, and the rest is history.

Sylvia brings new and exciting ideas to SLAC and will launch her own Wellness Program before long. Watch for the new program and let her know your interests and needs by completing the survey questionnaire that was on the reverse of the March *Wellness Newsletter*. Sylvia's hours are 8 AM to 3:30 PM, Tuesdays and Wednesdays, and 8 AM to 1 PM on Thursdays in the Medical Department. For questions and information call ext. 4588.

—Virginia Arazone

# Remembering Bill Ash



ON MARCH 6 BILL ASH DIED after a brief, intense struggle with cancer. At a memorial service in Pief's Grove on March 12 Bill's family, colleagues, and friends spoke of the ways Bill touched their lives.

Bill headed the group that built the superconducting final focus for the SLD, having earlier managed the contract with the firm in Japan that built the solenoidal coil for this large detector. He came to SLAC in 1972 to work on the polarized target for the spin-structure experiments in End Station A. In 1976 he joined the group that built and ran the SLAC side of the MAC detector at the PEP storage ring. He served as editor of the *Beam Line* from 1982 to 1985 and published newsletters for PEP, SLC, and SLD.

*Marty Breidenbach remembers:*

Bill was my closest colleague and friend at SLAC. We spent a lot of time in each other's office, and there will be no one like him at SLAC.

Bill had a unique combination of technical skills, people skills and wit. These technical and people skills helped Bill lead major projects, and the wit—outrageous puns to trenchant observations on the human condition—helped smooth and lubricate everything he did.

I knew Bill a bit in the early years at SLAC—he was with the Spectrometer Facilities Group in ESA and then with MAC at PEP (its formal name was Big MAC, which of course he coined), but we never really worked together until Bill joined SLD in '83 or '84. Bill's first big project was the SLD coil—100 tons of aluminum, glass, and epoxy. Bill was the physicist responsible for uniting the design, getting it built by Mitsubishi in Japan, getting it here, and finally overseeing its installation and commissioning.

That project turned out to be a simple warm-up for the next one—Bill managed the design and construction of the final focus triplets for SLC. These projects seem simple when they are wrapped up in their stainless steel cans: you pour in the helium, and they don't quench too often—but they are not so simple. There were problems which were technical and there were problems which were style, and Bill had the skills and wit to keep things going, to help people work together, and to make the project a success.

Bill was literate and he genuinely knew how to write and communicate. These are very valuable skills, particularly among a batch of scientists and engineers. It was these skills, in addition to his good sense, that attracted the attention of the SLAC directorate. About a year ago, Bill agreed to become an Assistant to the Director. We in SLD were delighted last October when Bill decided to come back to physics full time. Bill took on the leadership of the SLD Vertex Detector Upgrade, a difficult and technically demanding project at a time with very tight budgets. He made the presentation for the project to the EPAC with his usual clean delivery and wit.

*Rene Donaldson remembers:*

Those of us who were fortunate enough to have known Bill Ash have lost someone who stood at the center of our daily world—unassumingly and sometimes, I think, not really aware of the position he occupied in our lives. We remember him as a man of extraordinary inner grace, whose character revealed inherent gentleness, intellectual depth, personal integrity, humor, great kindness, and, above all, the conviction that we must treat one another with kindness, dignity, and respect—though when righteous anger is called for, we should have the courage to stand up and declare it.

*Nan Phinney remembers:*

When the SLD detector was first installed in 1991, the SLC performance had been disappointing and a steering committee was formed to plan the accelerator program and guide the necessary improvements. Bill Ash was the SLD representative on that committee and I worked with him closely for the last three years. Having a calm, reasonable buffer between the accelerator and the experiment helped keep us all working together towards a common goal. Bill was a key part of the success story that led us from the dark days of 1990 to 50,000 polarized Zs in 1993 and important physics results.

During this period, there were a lot of DOE and other committees at SLAC to review our performance. Bill was usually involved with these presentations, and we worked together on what often felt like life or death situations. We spent many SLAC dinners together making jokes and being silly. Those dinners will be a lot duller without Bill's sly humor. He was a joy to work with and a very special friend.

## Storage Ring Blues

*(A tribute, in uncertain meter and rhyme,  
To the problems of large storage-ring design.)*

There are three vicious demons, an ugly crew,  
Who are called Eta, Beta, and Delta Nu.

Beta's too big, Delta Nu is too small,  
And Eta shouldn't matter at all,  
But it does, you see, and all three conspire  
To keep luminosity from going much higher.

With PEP's sister, PETRA, things are the same.  
The ugly triumvirate's a mutual bane.

John Rees, PEP's Aedile, not one to scare,  
Has traced these three to their very lair.

When the beams cross, they disrupt one another.  
Push it too hard and they never recover.  
Delta Nu is the number whose value is set  
By the size of the current when this limit is met.  
There are hundreds of billions of charges, of course,  
And they push on each other with non-linear force.  
So no one can figure how big it will be.  
You must build the machine before you can see.  
Delta Nu, it was hoped, would be point 0 six,  
but it's just point 0 two, and there isn't a fix.  
As Nature would have it, this factor is paired,  
So the luminosity is down by about three squared.

Next we have Beta, from whose value is found  
How hard we can focus without losing ground.  
The more it decreases, the harder we squeeze.  
We's like to make it as small as we please.  
But make it small here and it gets bigger there,  
So this must be done with very great care.  
At present, in PEP, Beta's higher by two  
From where it should be when tuning is through.

Momentum changes are very small things,  
But distort the orbits in all storage rings.  
If Eta is zero, the effect goes away,  
And this is the case in all rings today.  
A little distortion, though not understood,  
Might just, after all, do PEP some good.

These three factors have made a serious dent:  
Luminosity is down to just four percent  
Of the value for L that everyone felt  
Scaling from small rings, like SPEAR, should have  
spelt.

Playing with Beta and Eta may bring  
A doubling or trebling to this storage ring.  
But even without this, there is no distress,  
for the goal is a guide, not a measure of success.

And PETRA and PEP are running okay,  
And nothing is standing in either's way  
Of doing the job they set out to do,  
Not Eta, not Beta, and not Delta Nu.

—Bill Ash, 1981



## ACCESS TO INFORMATION

### Video teleconferencing room update

VIDEO CONFERENCE USERS have experienced some difficulties lately, particularly in connecting with all conference participants. The difficulties were largely due to a not entirely smooth transition from the SSC to NERSC for conference connection services. NERSC services are not fully operational. Also, a minimum of 24 hours advance notice is required for scheduling conference facilities.

If you experience difficulties during your video conference, please ask your conference leader to contact the person at the Computing Help Desk. If the Help Desk person cannot resolve the difficulty, they will request assistance from the appropriate Telecommunications person. Please designate a conference leader with whom the Help Desk or Telecommunications staff person can attempt to resolve the problem. Also keep in mind that we can only correct locally caused problems or work with NERSC to resolve connection problems. Remote participants need to work with their site support organizations to resolve problems at their locations.

As we stated in the June 1993 *Interaction Point* article "Video Conferencing Center Now Open," before you can schedule a conference you need to first coordinate your conference with the people offsite that you wish to conference with. After you have coordinated with offsite participants, contact the SCS Help Desk at ext. 4357 (HELP) or send e-mail to **servdesk** to schedule the conference. Allow at least 24 hours between requesting the Help Desk to schedule the conference and the time of the conference.

You might find it helpful to contact the leaders of the offsite participants in your conference a day or so before the conference to ensure that they are still planning on participating. We have seen a number of cases where the SLAC party establishes a connection, but one or more of the other participants don't connect from their end.

—I. Vinson

## Model of Efficiency

# Plating Shop & Rinse Water Treatment Plant

"SLAC IS WAY AHEAD of everyone else when it comes to treating wastewater," reports Norm Domingo, the wastewater inspector from South Bayside System Authority who inspects SLAC. And that is why he recently asked if he could invite his colleagues for a tour of SLAC to show the others how one facility has created an exemplary model which others could follow. SLAC agreed to host the tour and a group of wastewater inspectors, who have nicknamed themselves the "PIGs" (short for Peninsula Inspectors Group), came to SLAC on March 3rd.

The tour began in the Plating Shop, where metal parts are finished to exacting specifications to meet the demanding needs of research projects as well as to meet the ongoing needs to maintain the accelerator. Many applications require parts that must be plated with copper, nickel, silver, or gold. The Plating Shop handles all of this with ease.

Ali Farvid, SLAC's chemical engineer who supervises the Plating Shop, showed the inspectors around the operation. He explained that the process begins with thoroughly washing and rinsing the parts. As he described this process, Farvid showed the group of Wastewater Inspectors the many large baths of liquids used in the plating process. Some of the baths contain soap solutions, strong chemicals, or acids for washing, while others contain plating solutions. There are also several large baths of plain water for rinsing parts after cleaning and plating.

After the parts are thoroughly cleaned in the different cleaning



Ruth McDunn

*Plating Shop supervisor Ali Farvid, reaching over baths of plating solutions, explains how the Plating Shop operates to a group of visiting wastewater inspectors.*

solutions, they are rinsed in water. A single part will usually go through many cycles of cleaning, rinsing and plating. Therefore, the plating process generates large volumes of wastewater. The rinse water oftentimes contains toxic chemicals and metal residues which SLAC must remove from the water before the water reaches the public wastewater system. If such toxic chemicals were allowed to enter the public wastewater system, they could kill the organisms that are used to biologically treat sewage and the public wastewater facility would be brought to its knees.

To prevent such a tragedy, the rinse water is sent to the Rinse Water Treatment Plant. George Laxson, who designed and oversees the Rinse Water Treatment Plant, explained to the wastewater inspectors how the wastewater is treated to remove toxic substances. When the water in the rinse baths becomes too concentrated with waste substances, it is released to the Rinse

Water Treatment Plant where it is treated before joining the public waste water system. According to Lexson, "The Rinse Water Treatment Plant may treat as much as 7000 gallons of wastewater from the Plating Shop on a given day."

The PIGs gave SLAC very high marks for the efficiency with which toxic metals and chemicals are removed from the wastewater. The PIGs felt that SLAC's Plating Shop and Rinse Water Treatment Plant should serve as models of excellence for other facilities.

The local wastewater inspectors model industry program is being done on a totally informal basis. However, it is patterned after an emerging program which has not yet been formalized by the Environmental Protection Agency (EPA).

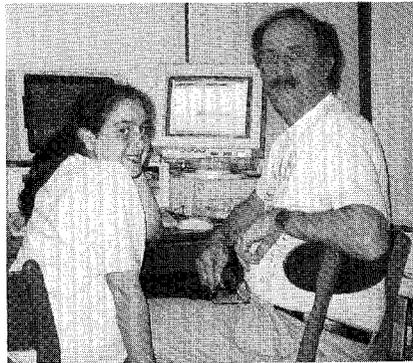
Hats off to the folks in SLAC's Plating Shop and Rinse Water Treatment Plant for running a great operation!

—Jack LaVelle and Melinda Saltzberg

# Take Our Daughters To Work April 28

"TAKE OUR DAUGHTERS to Work Day," planned for April 28, is a special event in which participants go with their parents to work instead of going to school for one day. The program was begun by the Ms. Foundation, which expects to have over two million participants world-wide this year. SLAC's event, sponsored by the Women's Interchange at SLAC (WIS), is designed to introduce young women to SLAC and to help them expand their career aspirations. It is designed to encourage, inspire, and introduce adolescent girls to the workplace. It will give them a chance to experience various careers firsthand by accompanying their mom or dad to his or her job.

Who is invited? Girls ages 9 through 15. Why girls? Research reveals that adolescent girls generally have less exposure to and



*Mitzi Schleicher is excited about coming to work with her dad, Max Schleicher of the Payroll department.*

awareness of career options than adolescent boys.

Visiting a parent's work place will increase a girl's awareness of some of the options that will be open to her in the future. That should help her to make informed career choices.

What will they do at SLAC? The day will be very busy. The girls will be taken to the auditorium by 8:30 AM to hear a panel of guest speakers and then take a tour of SLAC. They will then be provided with lunch. After lunch, parents will pick the girls up and show them the parent's work area. There the girls will see the kind of work their parent does, and in many cases they will have an opportunity to work alongside their parent. At 3:00 PM, they will return to the auditorium to hear additional speakers. Parents will join the girls at 4:00 PM for wrap-up activities and for a group photo. The event will conclude at 4:30 PM.

WIS needs volunteers to help on the day of the event. If you can help, please call Evelyn Eldridge-Diaz, ext. 4128.

—Melinda Saltzberg

*SLAC Hispanic Employee Committee Sponsors*

## FIRST ANNUAL CINCO DE MAYO

THE SLAC HISPANIC Employee Committee (SHEC) is a new group for Hispanic employees at SLAC. According to coordinator Sammy Aranda, SHEC's goal is to encourage Hispanic employees to come together as a community and to share and preserve Hispanic culture and values with fellow

employees. This year SHEC presents its first annual Cinco de Mayo celebration on Thursday, May 5. This event will consist of entertainment by our own Al Pacheco's Salsa Band, Stanford's Mariachi Band and Folklorico Dancers, and authentic Mexican food, provided by El Molino catering. Sponsors of the event are SLAC, Coca Cola, and Frito-Lay.

Cinco de Mayo (Spanish for the 5th of May) commemorates a significant victory against France by the Mexican army in the Mexican revolution. On that day in 1862 the French army, after suffering the loss of more than a thousand men in a fierce battle at Puebla, Mexico, was driven back to the Mexican coastal town of Orizaba. This event is now celebrated with fiestas in Hispanic communities.



The event is slated to run from 3 to 7 PM. Tickets will be sold at various locations at SLAC. Advance tickets are \$8 per person, \$10 on the day of the celebration. The names of ticket sellers will be posted on bulletin boards prior to the event.

If you have questions regarding this event, please contact Frank Martinez at ext. 3504, Sammy Aranda at ext. 3189, or Sandra Cajal at ext. 4322. If you have any exciting ideas for Cinco de Mayo mail them to S. Cajal, MS 84.

—Sandra Cajal and Sammy Aranda



# Tax Filing Requirements for F and J Visa Holders

AT 1:30 PM ON WEDNESDAY, April 6, workshops will be presented for foreign students and scholars to review the latest rules applied by the Internal Revenue Service to F and J visa holders. These workshops will be presented at Bechtel International Center on the Stanford Campus.

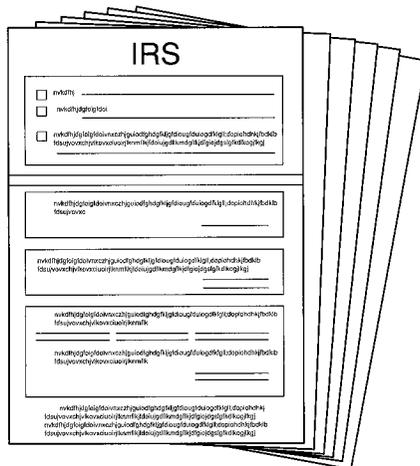
All F and J visa holders, including dependents, are now required to file a tax return whether or not their 1993 income was from US sources. A tax return must also be filed in cases where income is exempt under a tax treaty provision.

Tax forms and instruction booklets have been ordered and are expected to be available to workshop participants.

Assistance and forms may be obtained from one of the following IRS offices: 55 South Market Street,

Third Floor, San Jose, CA; or 1900 South Norfolk Street, #350, San Mateo, CA; or by calling 1-800-829-3676 for documents or 1-800-829-1040 for assistance from the taxpayer education coordinator.

—Ruth Thor Nelson



## Green Cards issued before 1978 to be renewed

THE US IMMIGRATION and Naturalization Service has re-issued its earlier plan to replace the old I-151 version of the permanent resident, or "green" card. Generally, I-151 cards were issued before 1978, when they were replaced by the still-valid I-551 cards.

Petitions for renewal are due by October 20, 1994.

Copies of form I-90, which together with the \$70 processing fee are to be submitted to the INS, are available from the International Services Office in Room 240 of the A&E Building. Applicants who cannot afford to pay the \$70 processing fee may request a fee waiver.

I-90 forms may also be requested by calling the INS at 1-800-755-0777.

If you are unsure if you hold an I-151 or an I-551 green card, you may want to send an enlarged photocopy of your card to the International Services Offices at MS 11, and they will tell you which card you hold.

Also, SLAC employees who have or will become a naturalized citizen of the US, are urged to bring their naturalization certificate or US passport to Room 240 of the A&E Building to document their new status in their personnel record.

—Ruth Thor Nelson

All meetings are held in the Orange Room, unless another location is listed. Larger meetings and conferences have a contact listed. Please notify the Public Affairs Office of any additions or changes by calling ext. 2204 or sending e-mail to nina@slac.

### April 4-8

SLD Week (TBA)

### April 6-7

DOE Program Review

### April 8

BES Collaboration Meeting  
U. of Texas, Dallas  
DOE B-Factory Review

### April 12, 9 AM

DOE GOCO-PA  
Managers Meeting

### April 18-22

APS General Meeting  
Crystal City, VA

### April 20-22

SU Alumni Assn. Course  
Auditorium

### April 20

IEEE Nuclear & Plasma  
Sciences Society Seminar  
M. Berndt

### April 21-27

Computing in High-Energy  
Physics/CHEP 94  
San Francisco  
M. Field, LBL

### April 23

IEEE Microwave Short  
Course  
Auditorium

### April 25-27

Annual REXX Symposium  
Boston, MA  
C. Dager

### April 25, 7 PM

OS/2 Users Meeting  
Auditorium

### April 28

Take Our Daughters  
to Work  
Auditorium/Site  
E. Eldridge-Diaz

### April 30

Science Teachers  
Workshop  
H. Quinn, P.A. Moore

EVENT CALENDAR: April 1994