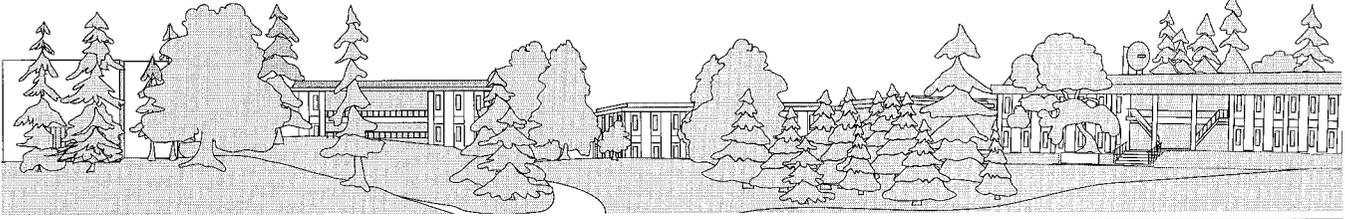


# The Interaction Point

Events and Happenings  
in the SLAC Community  
February 1994, Vol. 5, No. 2



## NEW ERA FOR TECHNICAL DIVISION



*Ewan Paterson*

**By Janice Dabney**

THE TECHNICAL DIVISION at SLAC has entered a new era, positioning itself to support the PEP-II project and utilizing the skills of its staff in new ways.

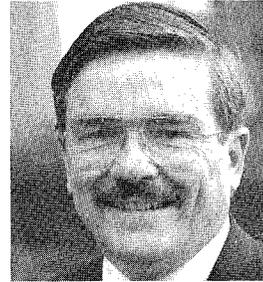
As of February 1, the Associate Director of this division, Kaye Lathrop, moved into the position of Associate Director at large, freeing him from the administrative duties he had addressed in his ten years of service and enabling him to assist the SLAC Director with special projects.

In Kaye's place, Ewan Paterson stepped into the role of Technical Division director, with his administrative assistant Kathy Asher. Dave Burke, Lowell Klaisner, and Greg Loew are now the key components of his management staff.

Lowell Klaisner will spend 90 percent of his time as Chief Engineer with PEP-II and 10 per-



*Dave Burke*



*Lowell Klaisner*



*Greg Loew*

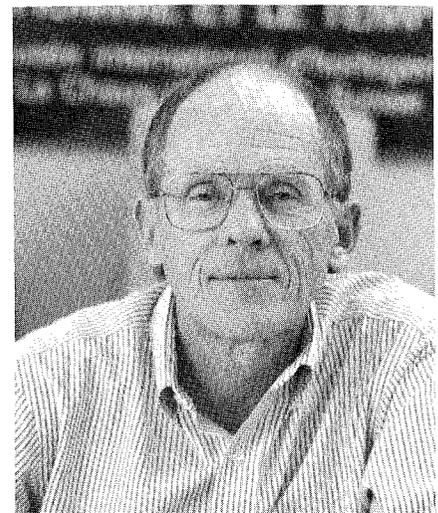
cent of his time in the Technical Division. He will coordinate two departments: Mechanical Fabrication and Mechanical Design. Ewan Paterson will directly manage three departments: Accelerator Department, Controls, and the Klystron Department. Greg Loew will add to his Deputy Division Director's duties by overseeing Power Conversion, Plant Engineering, and Metrology. Dave Burke joins the Technical Division as a new assistant director, coordinating the efforts of Accelerator Theory and Special Projects, the Final Focus Test Beam, and other NLC-related projects.

In order to provide more consolidation of support to ongoing operations, the Vacuum Group personnel have been integrated into the Accelerator Department and Mechanical Fabrication Department.

To strengthen our precision measurement capabilities, we have combined Survey and Alignment, Magnetic Measurements, and Quality Assurance into one department, the new Metrology Department under Robert Ruland.

SLAC has an international reputation for excellence in all of these areas and combining them under a common management will make their strong functions even stronger.

The Technical Division is challenged by the future and will continue to improve its excellent performance with the ongoing operations of SLC, NLC, and the End Station A programs while providing cost-effective, high quality support to PEP-II.



*Kaye Lathrop*

# NEW GROUP IN RESEARCH DIVISION



*Shown above are Group K members, left to right, back row: Steve Meyer, John Broeder, Gary Godfrey, Elliott Bloom, Ken Fairfield, Bill Tompkins; middle row: Lynn Cominsky, Han Wen, Andrew Lee, Bill Atwood, Linda Lee Evans; kneeling: Art Snyder, John Hanson.*

## By Elliott D. Bloom

THE RESEARCH DIVISION now has a new group—Group K. The mission of this group is half-time PEP-II and half-time particle astrophysics. This mixed mission is due partially to history and partially to the schizophrenic physics interests of the group's members.

Historically, many members of Group K were involved in the High Luminosity PEP upgrade, and the TPC/ $2\gamma$  detector physics program in the late 1980s. They have been long-time strong supporters of the PEP-II upgrade. After the end of the TPC/ $2\gamma$  program, group members took a major responsibility for the conceptual design of the PEP-II injec-

tion system and elements of the particle physics detector. Currently, Elliott Bloom is the PEP-II injection system manager, and Art Snyder is co-leader of the BaBar Detector simulation group. Other members of the group put in about half their time on PEP-II as well, with Gary Godfrey leading the injection diagnostics and instrumentation effort, and Bill Atwood heavily involved in the detector simulation effort. John Broeder is working on the injection beam line instrumentation, while Steve Meyer spends most of his time on the PEP-II database system.

The Particle Astrophysics program was originally begun by the SLAC Faculty and Directorate in 1991 through the efforts of Elliott

Bloom and SLAC Professor Richard Taylor. The Group K effort has focused on spaced-based particle astrophysics experiments, while Taylor has been more interested in ground-based gravitational wave detection experiments. The purpose of this program is to experimentally probe relativistic gravity. The group believes that only new data will facilitate the discoveries needed to fully integrate gravity with the rest of the fundamental forces currently studied in particle physics.

Group K now has two major activities in particle astrophysics. The first is a spaced-based x-ray mission designed to probe the near gravitational field of neutron stars and black hole candidates.

The x-ray experiment is called the Unconventional Stellar Aspect experiment, or USA for short. Basically, it consists of two very rugged multiwire proportional chambers sitting side by side. The field of view of the chambers is collimated (made parallel, or aligned) to a cone of 1.2 degrees normal to the thin window of the chamber. This collimation allows us to view one object at a time, without getting confused by signals from objects that are nearby in the sky. The chambers and associated collimators are mounted on a pointing system that precisely tracks stellar objects while the spacecraft orbits through space at about 5 miles/sec, 450 miles above the earth's surface. The x-ray detector counts the x-rays one-by-one as they arrive. The brightest objects we measure will put 20 kHz of x-rays into the detector, while the lowest go to a fraction of a Hz. In normal operating mode, we measure the energy of each photon to about 15% and time its arrival to within 4 microseconds.

*Continued on page 3*

The primary collaborator in the USA experiment is the Naval Research Laboratory (NRL) Space Science division in Washington, DC. Group K has been responsible for building the USA collimators and the detector and pointing system mechanical supports, or about one-third of the detector. Graduate students John Hanson and Han Wen, working with John Broeder and Gary Godfrey, made pivotal contributions to this effort. NRL has handled the rest of the hardware and electronics. Our work on the detector has been completed, and the pieces have been sent to NRL. They are very happy with the results. We are now focusing on flight software for the experiment. Ken Fairfield and Andrew Lee are doing this work. We are also preparing for data analysis. Lynn Cominsky, a visiting professor from Sonoma State University, has made the major contributions in this area, together with our graduate students.

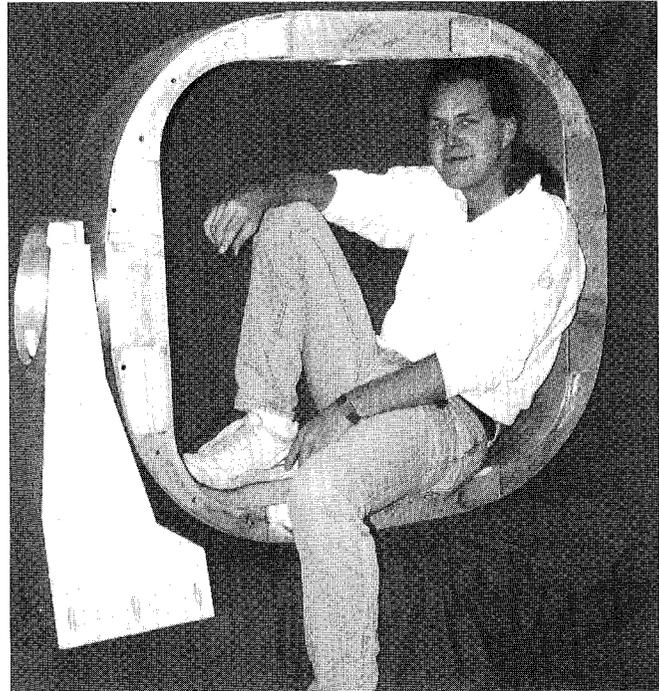
USA will be launched (using a Delta II rocket) as one of a group of five science

experiments on the Air Force satellite ARGOS in late 1995, administered by the Air Force Space Test Program (STP). It has been a plea-

sure working with the STP folks. They have given us considerable freedom in deciding how to build the experiment, with a minimum of paperwork. I am told by my space physics colleagues that this is very unlike NASA. The STP approach, coupled with a very fast schedule to launch after approval (five years), has allowed us to build a state-of-the-art x-ray

experiment for much less money than comparable x-ray experiments administered by NASA. Currently ARGOS is on schedule and budget after over three years since approval. We have less than two years to launch and are looking A-OK (and keeping our fingers crossed)!

Group K's second major particle astrophysics activity is called GLAST, or gamma-ray large area silicon telescope. The goal is to explore astronomical sources that emit gamma rays in the energy range 15 MeV to 1 TeV. This experiment will build on the exciting discoveries and results of the energetic gamma-ray experiment



Graduate student John Hanson sitting in the yolk that is part of the detector pointing system support for the USA experiment.

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**“The Air Force Space Test program approach has allowed us to build a state-of-the-art x-ray experiment for much less money than comparable x-ray experiments administered by NASA.”**

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telescope (EGRET) currently operating on the NASA satellite, the Compton gamma-ray observatory.

GLAST is now in an R&D stage exploring new technology for the next space-based gamma-ray telescope. GLAST will be made using 1990s particle physics technology.

To explore the new technical approach for GLAST, Group K is collaborating with Peter Michel-

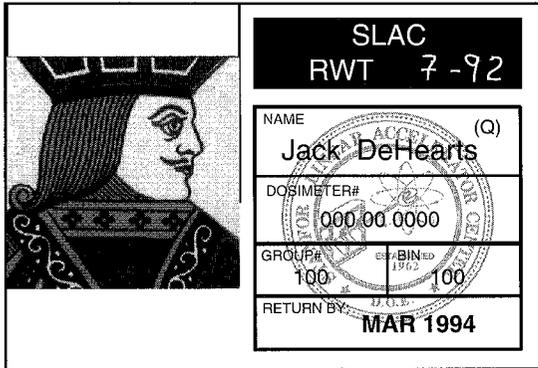
son's group in the Stanford physics department, and NRL. Bill Atwood is the project scientist and SLAC spokesman for the effort. The work is partially supported by SLAC and partially through a

NASA R&D contract. We are investigating ways to get GLAST into space as soon as possible—in ten years or less. As part of this strategy we propose launching a smaller-scale instrument, a GLAST

prototype, in a few years. Because of technology improvements, our prototype, about four percent of the full GLAST, will have approximately the capabilities of EGRET. If we are successful, such a device could continue the exciting work of EGRET after it has to shut down about two years from now, without a long wait for the full GLAST instrument to be in orbit.

# Everything You Always Wanted to Know About Dosimeter Badges\*

(\*But Were Afraid to Ask)



“BADGES? We don’t need no stinking badges!” may have worked for the bad guys in the classic movie *Treasure of the Sierra Madre*, but it doesn’t work at SLAC. Everyone who works at SLAC for more than thirty days must get a badge...a dosimeter badge that is.

A dosimeter badge records radiation exposure. After you exchange your dosimeter badge, your radiation dose is read from it to ensure that you haven’t been exposed to unsafe levels of radiation. Dosimeter badges are exchanged either once a year or four times a year, depending on the type of training that you have completed and the type of dosimeter badge that has been issued to you. In order to obtain a dosimeter badge, you must complete radiological training. Retraining is required every two years.

For those of you who may have had questions about your dosimeter badge but were afraid to ask, here are the answers to the top ten most frequently asked questions:

***How do I know when my radiological training or my dosimeter badge will expire?***

The dates are on your dosimeter badge. On the old style of dosimeter badge, the sticker on the top right indicates the type of

training that is required and the date that the training expires. The smaller sticker on the bottom right indicates when the badge expires and should be exchanged for a new one.

On the new style of dosimeter badge (available since October ‘93), the type of radiological

training required is indicated beneath the word *training* and the training expiration date is indicated beneath the word *expires*. The badge number is indicated beneath the word *dosimeter* and the date when the dosimeter badge expires and must be exchanged for a new one is to the right beneath the word *expires*.

***My training is about to expire—what should I do?***

Don’t panic! Contact the ES&H Training Team at ext. 2688 to register for radiological retraining. If you have a quarterly dosimeter badge you will need to take Radiological Worker Trainer (RWT) and if you have an annual dosimeter badge you will need to take General Employee Radiological Training (GERT).

***I have a new employee—do new employees need dosimeter badges?***

Everyone who works at SLAC for more than thirty days must receive radiological training and obtain a dosimeter badge. This policy applies to all SLAC employees, visitors, users, and subcontractors.

***I have a Ph.D. in physics—why do I need radiological training?***

Although you probably already know all about radiation, SLAC policy requires that everyone receive radiological training, experts and amateurs alike.

***I’ve completed radiological training—what do I do next?***

After you successfully complete radiological training, you will receive a SLAC Dosimeter Badge Request Form which has been signed by the instructor. You must complete and sign the form. If this is your first dosimeter badge, your supervisor must also sign the form. Your supervisor does not need to sign the form after you have been retrained. Take the completed form to the Dosimetry Office (Room 130, Building 24) between 1:30 PM and 4:15 PM, Monday through Friday to have your picture taken and to receive your dosimeter badge.

***Can I use my SLAC dosimeter badge at other DOE labs?***

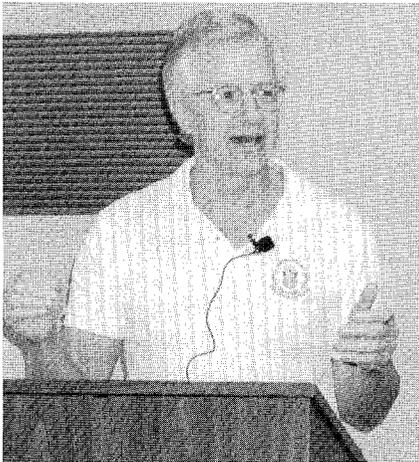
No, your SLAC dosimeter badge is not valid at other DOE labs. If you visit another lab, the core material from the radiological training you receive at SLAC should be acceptable but you will need to participate in their site-specific radiological safety program. You will need to check with that facility for details. Your SLAC dosimeter badge should not be taken to other DOE labs.

***I’ve seen the new dosimeter badges—how do I get one?***

You will get the new style of dosimeter badge the next time that you receive radiological training. If your training hasn’t expired yet,

*Continued on page 5*

# Awareness and prevention keys to avoid attack



Courtesy Cherrill Spencer

**JIM MATHER, FOUNDER OF** the California Karate Academy, was the featured speaker at a Women's Interchange at SLAC presentation on self defense. Mather teaches several courses in the martial arts and self defense.

In his talk, Mather placed a strong emphasis on prevention. He urged everyone to be constantly aware of their environment and habits and to look for areas of potential threat. "Be aware of the surrounding area and of possible escape routes," he said.

Mather also stressed the importance of advance planning—any time you drive, he says, you should "plan out your route so you don't drive in dangerous neighborhoods, be sure you have plenty of gas, and always lock your doors."

In case you do find yourself in a physically threatening situation, your first step should be to control the distance between yourself and the attacker. Do not let the attacker get near enough to reach you in one move. "Don't let someone get so close that you have to rely on blocking," he said. If possible, move so that there is an object (a car, for example) between you and the attacker.

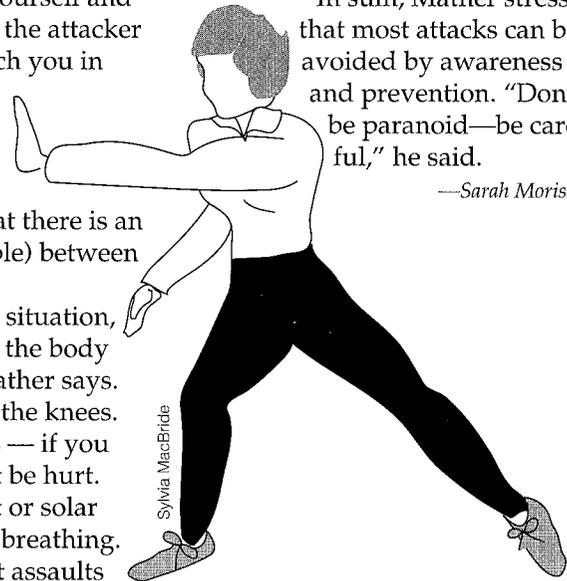
In a life-threatening situation, there are three areas of the body you should aim for, Mather says. First, move to take out the knees. Second, attack the eyes — if you can't be seen, you can't be hurt. Third, attack the throat or solar plexus to interrupt the breathing. Mather warned against assaults

that are designed to induce pain because the adrenaline in the attacker's body will numb the pain.

Mather also cautioned the audience never to attack someone unless you are in a life-threatening situation. "It is never against the law to defend yourself, but it is against the law to go beyond defending yourself," he said.

In sum, Mather stressed that most attacks can be avoided by awareness and prevention. "Don't be paranoid—be careful," he said.

—Sarah Morrisseau



Sylvia MacBride

*Continued from page 4*

but you want to exchange your old-style badge for the new style, just complete the SLAC Dosimeter Badge Request Form and take it, along with your old badge, to the Dosimetry Office during normal office hours. Your supervisor does not need to sign the form if you're just trading badges to get the new style of dosimeter badge.

## ***I lost my dosimeter badge—what should I do?***

Don't enter any controlled area until you obtain a new dosimeter badge. Obtain a SLAC Lost/Damaged Dosimeter Form from your department's group secretary. Fill

in the first section of the form with the personal information requested. Also complete and sign the second section of the form entitled Worker Statement. Have your supervisor complete and sign the Supervisor's Statement section. You must also complete the SLAC Dosimeter Badge Request Form (available from your department's group secretary) and have your supervisor sign it. Take the forms to the Dosimetry Office during normal office hours to replace your dosimeter badge.

## ***I accidentally put my dosimeter badge in the washing machine with my laundry—will it still work?***

Your dosimeter badge is probably unharmed (but clean!). You should take it to the Dosimetry Office to have it evaluated to make sure that it is OK.

## ***My badge broke—how do I get it fixed?***

Take the broken badge to the Dosimetry Office, and they will fix it for you. A few people have tried to repair their broken dosimeter badges in some very creative ways, including stapling, melting, and gluing. These methods haven't been successful and are not recommended.

—Jack LaVelle

## ATM arrives on site



Photo courtesy of Stanford Credit Union

Teresa Cervantes makes a lunchtime withdrawal at the new Stanford Federal Credit Union cash machine in Room 101 of the A&E Building. The ATM was installed on February 3 and is free for members of the Credit Union. The machine also accepts ATM cards from other major financial institutions, but a fee may apply. The machine does not accept deposits. For any questions about the Credit Union, or to start a Stanford Federal Credit Union account, please call 694-1000.

### SSRL E-MAIL SOLUTION

#### RECENT E-MAIL FAILURES

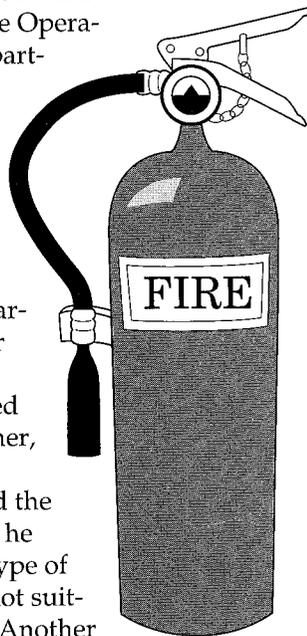
to people at SSRL are easy to explain. The VM designation that was dropped from e-mail addresses for SLAC employees is still necessary for any one working at SSRL. For instance, e-mail to Katherine Cantwell, of SSRL, should be sent to [cantwell@slacvm](mailto:cantwell@slacvm).

# FIRE EXTINGUISHER SAFETY

WHEN SHE ARRIVED at work one day, Terry Ash, of the Operational Health Physics Department, discovered that she couldn't turn off the engine of her car. Then she noticed smoke billowing out from under the hood. Opening the hood revealed sparks flying. Terry ran into the nearest building to call 911 for help. Meanwhile, a well-meaning passerby grabbed the nearest fire extinguisher, hoping to snuff out the sparks before they ignited the whole car. Unfortunately he had grabbed the wrong type of fire extinguisher; it was not suitable for an electrical fire. Another passerby noticed the mistake, and switched the wrong fire extinguisher with the right one. The sparks were promptly extinguished, and the car suffered little damage. This incident had a happy ending but it illustrates the importance of matching the correct type of fire extinguisher with the particular type of fire that you're fighting.

For this reason, only people who have completed fire extinguisher training may use fire extinguishers at SLAC. In the training class, you learn that there are three basic classes of fires:

- Class A: Ordinary combustibles such as wood, cloth, paper, rubber, and many plastics.
- Class B: Flammable liquids such as gasoline, oil, grease, tar, oil-based paint, lacquer, and flammable gas.
- Class C: Electrical equipment, including wiring, fuse boxes, circuit breakers, machinery,



and appliances.

All fire extinguishers are clearly labeled with an A, B, and/or C to indicate which type of fire they are designed to handle. The majority of fire extinguishers at SLAC are labeled "B-C" and can be used on Class B and C fires. There are also many multi-purpose fire extinguishers labeled "A-B-C" that can be used on all three classes of fires.

It is dangerous to use a fire extinguisher labeled only for Class A fires on a grease or electrical fire, since Class A fire extinguishers contain compressed water that can actually stimulate a fire instead of suppressing it. If the well-meaning person in the sparking car engine incident had used the fire extinguisher labeled "A," chances are that the result would have been costly repairs, or even personal injury.

Fire extinguisher training is held on-site once a month by the Palo Alto Fire Department. All personnel are encouraged to talk with their supervisor about taking this training. To sign up for fire extinguisher training, contact the ES&H Training Team at ext. 2688.

Knowing the right fire extinguisher to use for a specific type of fire can mean the difference between a minor incident and a major disaster.

—Jack LaVelle and Melinda Saltzberg

## Girls to visit on April 28



Terry Anderson

Ray Arnold shows his daughter Carolyn a graph in the Publications Department. All employees are invited to bring their daughters age 9 to 15 to work for one day on Thursday, April 28. Registration forms for the event will be showing up on your desks soon. For more information or to volunteer to help for "Take Our Daughters to Work Day" contact Evelyn Eldridge-Diaz at ext. 4128.

### **BLACK-AND-WHITE PROCESSING FREE NO LONGER**

THE PUBLICATIONS Department will now charge requestors for black-and-white photo processing, except when necessary to produce a SLAC PUB, TN, or REPORT. As is the case with color processing, requests for black-and-white processing will need an account code. All processing requires two working days. In the case of color, two working days are needed for each transaction from a negative—for example, to make transparencies and prints from the same negative requires four working days. Any rush fees will be charged to the requestor including rush work necessary for PUBS, TNS, or REPORTS.

# NOTICE

## Funding opportunities for technology transfer projects

SEVERAL SOURCES OF FUNDS for SLAC technical projects that have commercial potential will be the topic of a briefing in the Auditorium at 10 AM on Thursday, March 3. The presentation by SLAC's Office of Technology Transfer will focus on the types of projects sought, available and potential sources of funds, application procedures, selection processes, allowed contractual arrangements with industry, and project performance. Related issues that will also be addressed include SLAC patentable inventions and licensable software.

The primary focus will be on a \$200,000 block of quick-response money made available to SLAC this fiscal year to support small cooperative projects with industry. Categories of use and amounts allowed are:

- ◆ Small CRADA projects ≤ \$100,000 per project
- ◆ Personnel exchanges ≤ \$75,000 per project
- ◆ Technology maturation projects ≤ \$50,000 per project
- ◆ Technical assistance ≤ \$4,000 per 3-day project

(CRADA is a cooperative research and development agreement between the lab and industry.)

The DOE has established a program of providing each of its laboratories a specific amount of money for technology transfer projects. The quick-response money is meant to support small projects that appear and need immediate action. A larger sum will be made available at the beginning of next year for spin-off CRADA projects (defined as projects residing outside the mission of the DOE program office supporting the initial development of the technology).

In the future, periodic calls for possible collaborative projects will be issued to industry by SLAC—the first occurring within a month. Briefings will also be held for industry to explain SLAC research, technology, and capabilities, as well as the process for proposal evaluation and selection (now being established) within SLAC and the lab's approval cycle with the DOE.

Both the quick-response and spin-off funds are expected to grow over the next few years. So it will be worthwhile for all to become familiar with this newly funded program in order to do some long-range planning of potential projects. Additionally, at the briefing you may be able to identify opportunities for funding by the much larger, external programs that now support technology transfer work—programs such as the Small Business Technology Transfer (STTR), \$3 million; Advanced Technology Program (\$200 million); Technology Reinvestment Project (\$400 million); and others.

—Jim Simpson

# Guckenheimer award to Café



Photo courtesy of Sigrun Williams

The staff of the SLAC Café receiving the Standards and Safety Award. The award plaque hangs immediately inside the entrance to the food service area, and names all of the Café employees. Shown are, left to right: Tamara Johnson, Area Supervisor; Jesus Balderas, Pantry; Juvenil Moreno, Utility; Pilo Martinez, Grill Cook; Dave Levell, Chef; Pamela Washington, Cashier; Jackie York, Catering; Sigrun Williams, Manager.

IN EARLY FEBRUARY the SLAC Café employees received the Guckenheimer Standards and Safety Award. Guckenheimer Enterprises, Inc. operates the SLAC Café.

"We're very proud of the award," says Sigrun Williams, Food Service Manager of the Café.

The SLAC Café competed with nearly 90 other northern California Guckenheimer locations to receive the award. Mr. and Mrs. Ritchie, owners of Guckenheimer Enterprises, Inc., brought a cake to the award ceremony and also gave Sigrun a check to take the staff out to dinner.

The highly competitive award is given once each quarter. The Guckenheimer location that wins the distinction must meet all sanitation, safety, and menu standards; have a low employee turnover rate; submit its cash and paperwork on time; and properly train its employees.

Sigrun has been working for Guckenheimer for 10 years, two of which have been at SLAC. This is the first time she has won the award. She feels that the SLAC environment has contributed to her staff's success. "I instantly felt at home here," Sigrun says. "I think we all do—and it has brought out the best in us."

—Sarah Morrisseau

## Welcome guests and new employees

**Paul Bellomo**, Power Conversion; **Donatella Falciai**, Linear Detector; **Richard Fischer**, B Factory; **David Jeglum**, Plant Engineering; **Colin Jessop**, Experimental Group C; **Shuji Matsumoto**, Accelerator; **Masao Kuriki**, Experimental Group A; **Eric Lee**, Experimental Group E; **Yuri Nosochnikov**, Theory; **Massimo Placidi**, Linear Collider; **Eric Reuter**, Engineering; **Yves Roblin**, Experimental Group A; **Cary Salsberg**, Metrology; **Tsumoru Shintake**, Experimental Group I; **Bazil Tabachnik**, Plant Engineering; **Yiping Tan**, Experimental Group C; **Steve Virostek**, Accelerator; **Man Wang**, Experimental Group C; **Jianping Zheng**, Experimental Group C.

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.

### Mar 3

HEPAP Drell Subpanel  
Town Meeting  
J. Huth

### March 7–11

SLD Week (TBA)

### March 15

20–30 Year Service Awards  
Faculty Club

### March 16–18

SU Alumni Assn. Course  
Auditorium

### March 18

BES Collaboration Mtg.  
Colorado State U.

### March 22, 9 AM–3 PM

SUBB Mobile Blood Drive  
Auditorium Lobby

### March 28, 7 PM

OS/2 Users Meeting  
Auditorium

### March 28–31

Workshop on  $\gamma\text{-}\gamma$  Colliders  
Lawrence Berkeley Lab  
A. Sessler

### March 31, 8–4 PM

DOE PA Managers Meeting

### April 4–8

SLD Week (TBA)

### April 6–7

DOE Program Review

### April 8

BES Collaboration Meeting  
U. of Texas, Dallas

### April 20–22

SU Alumni Assn. Course  
Auditorium

### April 21–27

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

### April 23

IEEE Microwave Short  
Course  
Auditorium

### April 25, 7 PM

OS/2 Users Meeting  
Auditorium

### April 28

Take Our Daughters to Work  
E. Eldridge-Diaz

EVENT CALENDAR: March–April 1994