

# The Interaction Point

Events and Happenings  
in the SLAC Community  
September 1996 Vol. 7 No. 6



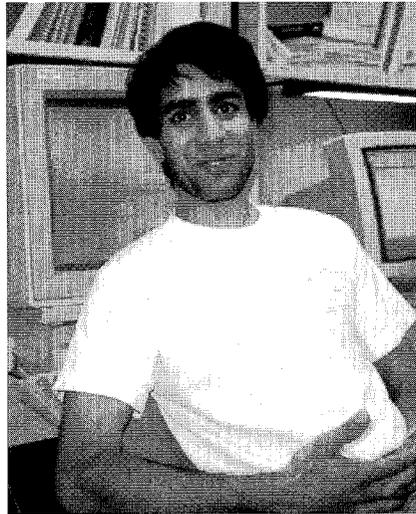
## Gill Donates Bone Marrow

by Penny Nichols

BONE MARROW DONOR Mandeep Gill was recently hobbling around for about a week after giving 1.3 liters of bone marrow for an international donation. The recipient is a 48-year-old male with acute leukemia and without this infusion of bone marrow would have a much more limited, and perhaps negligible, chance of recovery.

Gill is a Berkeley graduate student doing research at SLAC with his advisor Stanley Brodsky. Gill joined the National Marrow Donor Program last year when he heard there was a severe shortage of certain ethnic groups represented in the national database.

Why did he sign up to give bone marrow? "I would be sacrificing very little compared to what the recipient is going through, and I would certainly hope that someone would do the same for me if I needed it," said Gill.



P. A. Moore

*Relaxing at his desk, Mandeep Gill muses philosophically about the larger meaning of donating bone marrow.*

Many tests are done to determine compatibility, and initially there is only a one in several million chance of a fit between any two people. The marrow extraction process takes about 40

minutes and is done under general anesthesia. Aspiration needles inserted into the interior of the pelvis through its iliac crest located in the lower back withdraw the marrow. The donor's marrow completely replaces itself within a few weeks.

The extracted marrow was immediately refrigerated in a chilled container and flown overseas to the transplant center. It must be transfused within 48 hours to be effective. Gill's Web site gives more details about the entire process: <http://www-leland.stanford.edu/~msgill/marrow.html>

"I was pretty tired for a couple weeks after the donation, but now I am riding my bike again, so I'm okay. But it will be a month until I find out if the transplant was successful," said Gill.

For more information about being a bone marrow donor, contact the Stanford NMDP Coordinator Diane Hill at 723-5532, or Gill at [msgill@leland.stanford.edu](mailto:msgill@leland.stanford.edu).



## Your Calendar for Family Day

by Karen McClenahan

ARE YOU READY for fun? If not, get ready because Family Day will take place on Saturday, September 7, from 10 a.m.-4 p.m. This SLAC-sponsored day of activities for all ages will feature lunch with a new menu of barbecued chicken sandwiches, hot

dogs/sausages, and assorted side dishes. For kids, activities include a train ride, carnival booths, and clown and magic shows. For adults we will have a 28-foot climbing mountain, a joust game (picture American Gladiators), music by request all day, and much, much more! Be sure to register your volleyball team with

Ron Barrett x3339 for the tournament. The whole family can look forward to tours of SLAC and the new Visitor Center. Everyone is invited to join in the fun!

Check out our Web page at <http://www.slac.stanford.edu/~reb/family.html> and the Family Day flyers for more information and T-shirt order forms.

## "Ask Terry"



P. A. Moore

HAVE A DOSIMETER QUESTION? A picture ID question? Ask Terry Ash at x4569 or drop by her office in Building 24, Room 130. She issues photo IDs and dosimeters Monday–Friday from 1:30 p.m.–4:30 p.m. For staff who are updating their GERT training, all you have to do is mail the dosimeter request form with the appropriate signatures, and Terry will mail your updated dosimeter. The dosimeter allows a person into the restricted areas of the site, and a radiological training program is required. The SLAC picture ID or your Stanford ID will allow you on site after hours and weekends. You can also check out the OHP Web page at <http://www.slac.stanford.edu/esh/dosimetry/dosimetry.html>.

## Who's the oldest of them all...

DO YOU HAVE an old SLAC parking sticker on your car? We want to identify the oldest sticker still in use. Send your name, the sticker number, and year acquired to [tip@slac.stanford.edu](mailto:tip@slac.stanford.edu) (or Vickie Flynn, MS 20). We will contact the one with the oldest sticker for an article in a future issue of *The Interaction Point!*

# State of SLAC: Science and Safety

by P. A. Moore

IN HIS ANNUAL State of SLAC talk on August 1, Director Burton Richter outlined the budget issues facing SLAC for fiscal year 1997 that begins October 1, but used the majority of the time to talk about safety issues and scientific accomplishments. A videotape of the Director's talk is available in the SLAC library.

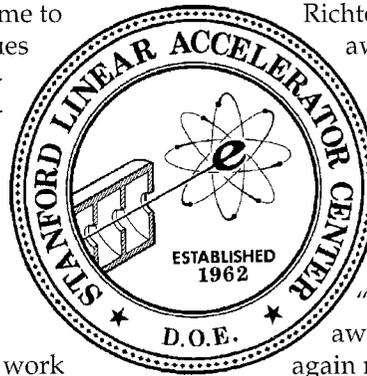
"Let's get the bad news out of the way first," said Richter, announcing that the work force will be reduced by 25 full-time equivalent workers and that accelerator operations will be cut from nine months to seven months. In addition, some projects would be deferred.

"The budget numbers are based on the present situation. They can change, but I don't expect big changes," according to Richter.

The remainder of the All Hands meeting concentrated on SLAC events over the past year, scientific accomplishments in synchrotron and high energy physics, and other announcements.

Richter reviewed the safety awareness sessions that took place in March. After outlining actions taken as a result of those meetings, he emphasized his "Work Safe, Work Smart" motto. "We will have safety awareness meetings again next year to see what has changed, but each of us is responsible for our own safety," he emphasized.

On August 5, the Personnel Office distributed a memo outlining the details of voluntary layoffs and voluntary reduction in time. Contact the Personnel Office if you did not receive a copy or if you have any questions.



## DOE Says "No" to Net Sex

by Bill Johnson

NEARLY 100 EMPLOYEES at a federally funded laboratory were disciplined for using their work computers to access sexually explicit Internet sites, according to a news article by the Associated Press dated December 15, 1995. Pacific Northwest National Laboratory suspended 21 workers who used the sites most frequently. Another 77 workers received written reprimands.

According to the PNNL spokesperson, most of the scanning of adult bulletin boards occurred on workers' own time but still violated company policy against using work computers for personal use.

The Department of Energy's position on use of government

resources was restated by Archer L. Durham, Assistant Secretary for Human Resources and Administration, in a "Message for All Department Employees" dated February 16, 1996:

"As public servants we are expected to hold ourselves to the highest standards of behavior and stewardship. As managers and supervisors, we should remind our employees of the risks associated with inappropriate use of official time and Government equipment. . . Our policy of zero tolerance for the inappropriate use of the internet should be clearly understood and followed by all."

(cont'd. on page 6)

# NLC Test Accelerator Starts Commissioning

by Ted Lavine

SLAC'S NEWEST accelerator, the NLCTA (short for Next Linear Collider Test Accelerator) reached a major milestone in August with the start of commissioning. The NLCTA is part of SLAC's on-going development of accelerator and microwave power technology for a future electron-positron linear collider, dubbed the "Next Linear Collider" (NLC). SLAC's design for the NLC incorporates two 9,500-meter-long linear accelerators (linacs) to accelerate electron and positron beams (one beam in each linac) to beam energies of 250 GeV or more. (One GeV is one-billion electron volts.) In contrast, the maximum energy of the two-mile-long linear accelerator at SLAC is 60 GeV.

The goal of the NLCTA project is to test SLAC's design for the NLC linacs, which are designed to be energized by 11.4-gigahertz microwaves, which have one-fourth the wavelength of the 2.856-gigahertz microwaves used by the current linac. (One gigahertz is one-billion cycles per second.) The accelerating gradient (or energy gain per length) in the NLCTA is 0.05 GeV per meter. In contrast, the gradient in the current accelerator is only 0.02 GeV per meter. The decision to use shorter-wavelength microwaves was one of several design choices made to achieve simultaneously higher gradients and save electric power for running a future NLC. It required a new type of structure to accelerate the electron beam and also required the Klystron & Microwave Department to develop a new type of klystron to produce more than 50 megawatts of peak power at the new microwave frequency.

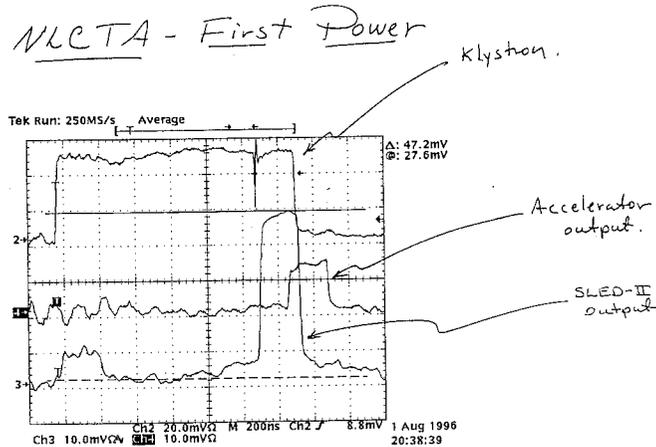
The first section of the NLC-type accelerator structure and the first 50-

megawatt NLC-type klystron were produced and successfully tested at SLAC early last year. Since then, three more accelerator sections and three more klystrons have been built. A further improved version of the klystron (with periodic permanent-magnet focusing, instead of a power-consuming electromagnet) was successfully tested in June 1996. R&D is continuing to make the new klystron design highly reliable and cost-efficient for mass production.

The 42-meter-long beam line of the NLCTA contains an electron gun, focusing magnets, steering magnets, collimators, beam position monitors, beam profile monitors, and other diagnostic instruments, in addition to acceleration sections. The entire beam line is installed and under vacuum in a concrete housing partially inside and partially outside of End Station B.

The NLCTA eventually will contain 12.6 meters of NLC-type linear accelerator structure (in 8 sections, two of which are 0.9 meters long, and six of which are 1.8 meters long) and four stations of klystrons and modulators. At present, only the pair of 0.9-meter accelerator sections, and the first klystron and modulator, are installed.

While the NLCTA's accelerator is



only 1/1000 the length of an NLC linac, it is a modular, engineered prototype for the NLC.

The NLCTA project was conceived in 1991, and has been managed by Professor Ronald Ruth, Head of the Technical Division's Accelerator Research Department A (ARDA, formerly known as Accelerator Theory & Special Projects). Significant

contributions to the project have been made by scientists, engineers, and technicians from many departments at SLAC including ARDA, Klystron & Microwave, Controls, Power Conversion, Mechanical Fabrication, Experimental Facilities, Radiation Physics, Technical Planning, and Group I. SLAC accelerator physicists and engineers collaborated with their counterparts at the KEK laboratory in Japan on the fabrication of the new accelerator structure.

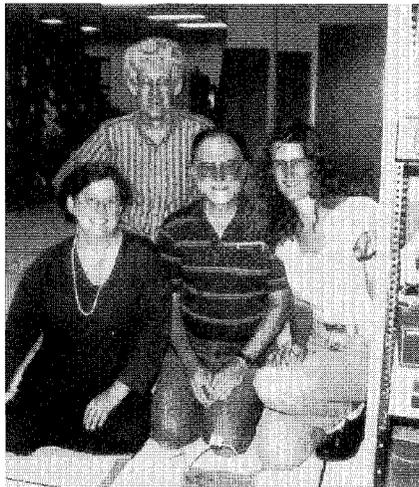
Milestones in the NLCTA project include: completion of the Conceptual Design Report (SLAC Report 411) in August 1993; commissioning of the 150-kilovolt, 1.8-ampere electron gun in May 1996; and the first high-power microwaves into the first two accelerator sections on August 1, 1996. Acceleration of the first beam to 0.1 GeV is planned for a later date. Installation and commissioning of the rest of the NLCTA linac and its microwave power systems, which will produce beam energies up to 0.5 GeV, is planned by the end of the year. Future upgrades planned for 1997 include adding more klystrons to achieve higher accelerating gradients (up to 0.085 GeV per meter), and are expected to produce beam energies up to 1 GeV.

# Bye-Bye BITNET Bye-Bye

by Joan M. Winters

IT'S THE END of a 13-year relationship. From June 1983 to July 1996 BITNET propelled SLAC into the age of national, then global, email. The network allowed users to exchange messages in real time from their terminals. People could carry on conversations at a distance without using the phone or could command remote processes like LISTSERV. Started in 1981 by CUNY and Yale, membership in the network burgeoned during 1985-90, with the high energy physics community leading the way.

Around 1985 BITNET hired Educom to provide some of the network operational support. At the peak in 1991-92, BITNET and its Cooperating Networks like EARN in Europe had 1400 institutional members in almost fifty countries on five continents. This infrastructure meant most members of the SLAC community could exchange various types of



*Gathering to say bye to BITNET are, left to right, Joan Winters, Les Cottrell (in back), Charley Granieri, and Renata Dart.*

information in minutes or hours instead of days, weeks, or never.

Files that did not fit in email could be transferred, allowing people to bypass tapes and national postal services. The high energy physics community pressed the limits of BITNET and its

cooperating networks on other continents with the size of the files it sent. In 1985 SLAC's Les Cottrell conceived and helped implement the BITSEND and BITRCV commands to split up large files for network transmission and to reassemble them at the other end. This code became popular at a couple hundred nodes, reducing pressure on the network.

At SLAC, BITNET support came from John Halperin and Renata Dart, BITNET Technical Representatives; Charley Granieri, VMS maintainer; Teresa Downey, Mailer maintainer; Bebo White, LISTSERV maintainer; Joan Winters, BITNET Information Representative; and Les Cottrell, BITNET Institutional Representative.

As the Internet usage has increased, BITNET's utilization has declined. Now it is passing into history "Because It's Time." For 13 years SLAC benefited greatly from the existence of this seminal, global network. BITNET connected the academic world electronically. Now we move onto the Internet, which BITNET helped to create, and a connection to a wider world.

## National Search to Replace Dickens in Computer Services

SLAC IS UNDERGOING many changes, a major one being the retirement of Chuck Dickens as the head of Computer Services. Dickens has made major contributions to SLAC and replacing him will be difficult. The lab has been fortunate to have the benefit of his expertise for many years.

"Given the importance of this position, SLAC is conducting a nationwide search for his replacement to maintain our excellence in scientific computing," according to Doug Kreitz, who is handling the logistics for the search committee. "We've set up broadly based interview teams representing the SLAC computer user community to make sure we involve people with many different points of view," Kreitz added.

From a pool of over 80 applicants, five finalists were chosen and interviews took place in August. Each candidate had two full days of interviews, and the process included a formal presentation by the candidate to an invited audience.

The four different teams assembled for the interviews included SLD's Terry Shalk, who heads a team on scientific computing needs, while Chuck Boehm is the team leader for technical support computing. A team of senior staff from SCS headed by Clarice Rinard will provide input on the candidates from an operations standpoint. The Associate Directors Committee on Computing forms the fourth team.

Each team has a formal set of questions for the candidates and, based on the responses, candidates will be ranked and the list submitted to David Leith, head of the Research Division. Leith will make the final decision based on the input of the teams and of others.

"This is an important position to fill at a critical time in SLAC's history and we are doing our best to ensure that people from all major areas of computing are involved in the process," said Leith.

Once an offer goes to a candidate, the person will be expected to take responsibility within 30-60 days.

# When Nobel Laureates Get Together



R. E. Diebold

Jerome Friedman, from MIT, looks on skeptically as SLAC Director Burton Richter gestures emphatically. The discussion between the two Nobel Prize winners took place at the Snowmass Conference in July, where physicists gathered for three weeks of intensive study and workshops. Watch for an article about the Snowmass Conference in an upcoming *Interaction Point*. Friedman shared the 1990 Nobel in physics with SLAC's Richard Taylor and MIT's Henry Kendall for research done here on deep inelastic scattering. Richter's 1976 Nobel, shared with Samuel Ting from MIT, was for the discovery of the  $J/\Psi$  particle.

## Reader Responds to Traffic Article

REGARDING THE Scofflaws Beware! article in August's newsletter, Ken Underwood, Controls Department, had the following to say: "I can see absolutely no reason why people can't stop at STOP signs and keep their speed at or below the speed limit. I have had several close calls in crosswalks here at SLAC because of people who failed to stop at STOP signs.

The only accident I have had in 30 years of driving was here when I was rear-ended by a speeding

motorcyclist. I support the efforts of the Operating Safety Committee towards education about on-site vehicular safety for first offenders and implementation of severe sanctions against repeat offenders."

Underwood also cited an article in the August 7, 1996, *Mercury News* which stated that the nationwide economic toll of motor vehicle crashes was \$150.5 billion in 1994 alone, at a cost of \$580 for every American.

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## FactinOs

### **We're on the Telly...**

England's BBC is considering SLAC as a location for part of their upcoming six-part television series on the inflationary universe, featuring Stephen Hawking. London's TV Channel Four interviewed David Fryberger on his theory of ball lightning.

### **We're in the news...**

Alaska Airlines' July magazine mentions SLAC as part of a story about DOE labs and commercial applications of research.

In July the *Half Moon Bay Magazine* featured an article about SLACers who live there.

### **Kudos to Worah**

Mihir Worah, a Research Associate in Theory and one of SLAC's delegates to the Zichichi School and Conference in Italy last month, was named the Outstanding Young Physicist at that meeting, a new award announced by Zichichi this year and quite an honor.

### **Boxes? Have we got boxes?**

The SLAC Archives and History Office has begun the move back into storage space in the Central Lab Annex Building (Room B012). Recently, 350 archive boxes were moved there from temporary storage at IR6. The boxes are the first test of mobile shelving, which, true to its advertising, operates quite smoothly when fully loaded.

### **Candid Camera**

Are you on display? Check out the photos of SLAC staff as you enter the Visitor Center. Photos will rotate periodically, so if you have a good snapshot of your colleagues at work, send it to P.A. Moore at MS 80. Moore also collects "FactinOs" for TIP, so send news tidbits to [xanadu@slac.stanford.edu](mailto:xanadu@slac.stanford.edu).

## A Hobby on a Horse

WORKS OF ART don't just hang on walls or sit in museum display cases. They may also be items used daily, created with attention to detail that shows the care and pride that went into them. Such is the case of a project recently completed by SLD's Howard Rogers.

About a year ago, Howard posted an advertisement to commission the making of a western saddle. Nick Arias of Document Control answered the ad, and a deal was made. With the help of Howard's "bible," the *Encyclopedia of Saddlemaking* by Ann and Al Stohlman and advice from his mentor in Half Moon Bay, Matt Klein, Howard began the intricate designing of the saddle. The horse was fitted, a saddle tree (frame) was built, tooling work was drawn up with the owner's input, and then the process of building the saddle was started. The work was exacting, calling for patience and attention to detail. Success meant that the saddle was a good fit and the details were exquisite.

Before he starts his next saddle, Howard plans to take a break and return to his hobby of working on such items as wallets and guitar straps—which got him started on this path in the first place.



Julie Rogers, Experimental Group A, shows off the Howard Rogers saddle, as modeled by Lad O' Gold.

## Welcome Guests and New Employees

The following people joined SLAC during July: Luis Arroyo, MFD; Frank Cooper, SSRL; David Cutting, SSRL; Matthew Latimer, SSRL; William MacLean, SCS; Donald Martin, SSRL; and Gabriella Sciolla, Group C.

## Third Generation SLACer?



SARAH MAUREEN was born to Kathy and David Burrows on July 30. Baby Sarah weighed 7 lbs 11 oz and measured 20.5 inches. Kathy is the assistant area manager for the Linac and Klystron Gallery and has been at SLAC for over 15 years. Future mothers take note: the dedicated Kathy was working until four days before her delivery. Sarah is a third generation SLACer. Grandmother Pat Wurster has been at SLAC for more than 25 years and she is in the Mechanical Design department. A warm welcome to the newest SLAC baby.

## No to Sex

(cont'd. from page 2)

Each year, Dr. Richter publishes an "All Hands Memo" on "Use of SLAC Information Resources" (January 10, 1996 is the most recent memo). Please consult this document for SLAC specific information. Please be reminded that the Laboratory considers misuse a serious breach. In order to comply with DOE Orders, we do, indeed, sample network activity and monitor files on many of our systems.

## Meet Sean Brennan of SSRL

SEAN BRENNAN is investigating micro-contamination in silicon chips with colleagues from other national labs and industry. Others from SSRL include Piero Pianetta, Norikatsu Takura, and Hal Tomkins.

