SLAC 40th Anniversary Open House Celebration
Honors Staff Contribution & Scientific Achievements

By Neil Calder

SLAC's upcoming celebration honoring our 40th Anniversary is shaping up to be a terrific day for everyone.

Laboratory Director Jonathan Dorfan, along with former Directors Burton Richter and Piez Panofsky, join us to welcome a group of distinguished speakers reflecting on the Laboratory's achievements over the past 40 years.

Speakers will highlight our scientific accomplishments and share milestones achieved along the way. The dedication and capabilities of the laboratory staff and community have made this possible.

Please join us to participate in this special occasion at the lab. The event will begin at 1:00 pm, with a welcome presentation. Speakers include:

Haim Harari, Chair, Davidson Institute of Science Education; Past President, the Weizmann Institute
Robert Birgeneau, President, University of Toronto
John Marburger, Science Advisor to the President and Director, Office of Science and Technology—John Marburger will speak at an invitational 40th Anniversary dinner.

There's still time to RSVP so that we can prepare your badge and souvenir kit.

You can RSVP on the special Web page: https://www-internal.slac.stanford.edu/40year/

40th Anniversary Afternoon Program

1:00 p.m. Gathering of Friends Presentation
1:30 p.m. Welcome
Jonathan Dorfan
SLAC Director
SLAC’s Contribution to Stanford
John Hennessey
President, Stanford University
SLAC and the DOE
Raymond Orbach
Director, Office of Science, DOE
The Birth of SLAC
W.K.H. (Piez) Panofsky
SLAC Director Emeritus
SLAC’s Contribution to Particle Physics
Haim Harari
Chair, Davidson Institute of Science Education; Past President of the Weizmann Institute of Science
SLAC and Accelerators
Burton Richter
SLAC Director Emeritus, Nobel Laureate in Physics
SLAC and Synchrotron Radiation
Robert Birgeneau
President, University of Toronto
SLAC in the Future
Jonathan Dorfan
4:30 p.m. Reception on The Green

This Month in SLAC History: September 2002

41 years ago, September 15, 1961: “The Stanford Linear Accelerator Center” is authorized by Congress. The Atomic Energy Commission (AEC) enters into contract negotiations with Stanford University.

37 years ago, September 8, 1965: A Magnet Symposium at SLAC makes first use of the newly constructed Auditorium.

35 years ago, September 9, 1967: SLAC Dedicated

25 years ago, September 1, 1977: SSRP becomes Stanford Synchrotron Radiation Laboratory (SSRL).

24 years ago, September 1978: DELCO detector removed from SPEAR. Crystal Ball detector moved into place on SPEAR.

22 years ago, September 5, 1980: New PEP storage ring at SLAC dedicated—a joint project of SLAC and of the University of California’s Lawrence Berkeley Laboratory, sponsored by the US Department of Energy.

19 years ago, September 1983: SLAC is named a National Mechanical Engineering Landmark by the National History and Heritage Committee of the American Society of Mechanical Engineers (ASME).

18 years ago, September 1, 1984: Burton Richter becomes SLAC’s second Director.

14 years ago, September 12, 1988: Initial colliding-beam run on the SLC ends.

11 years ago, September 1991: SLAC Physicist Paul Kunz brings word of the World Wide Web’s existence to SLAC on his return from a meeting at CERN.

10 years ago, September 1992: SSRP’s smaller undulator wins the Research and Development 100 Award. Robert Phillips of SLAC’s Klystron Department wins the Free Electron Laser Award from the Institute for Laser Technology.

5 years ago, September 16, 1997: The 350,000th entry to the SLAC Library’s SPIRES-HEP database is added.

3 years ago, September 1, 1999: Jonathan Dorfan becomes SLAC’s third Director.

Family Day Highlights
See Back Page

Jean Deken, SLAC Archivist
ISSM Awareness Expo to Feature Security Experts and Free Items

Expo will be held during SLAC Security Briefing Thursday, September 26 in Panofsky Auditorium

This week’s All Hands Memo from the Director explained the need for everyone in the SLAC Community to attend an annual SLAC Security Briefing, the first of which will be held on Thursday, September 26 in Panofsky Auditorium.

In conjunction with this briefing, informational tables will be available in the Auditorium breezeway. Helpful subject matter experts will be there to talk with you about emergency preparedness, physical security and cyber security.

The ISSM Awareness Expo is a continuation of SLAC’s ongoing Integrated Safeguards and Security Management (ISSM) awareness campaign.

Free House Keys and Calendars

In addition to presenting helpful information about safeguards and security at work and at home, we will be handing out “Securiy America” 2003 wall calendars and other items to prompt ISSM awareness.

To emphasize the need for good safeguards and security measures at home, we have also arranged for you to get a free house key made to be made on the spot! Be sure to bring your house keys to the Security Briefing so you can take advantage of this free offer.

The ISSM Awareness Expo is jointly sponsored by Business Services Division (BSD), Environmental Safety and Health (ES&H), and SLAC Computing Services (SCS).

If you have questions about the Expo, please contact Doug Kreitz, ext. 4550, or email dougkr@slac.stanford.edu.

EXO-Men and the Neutrino Mass Mystery

By Tom Moul

Determining the mass of the neutrino could be a key in the final formulation of the Unified Field Theory for particle physics, adding to our understanding of the origins of matter and the eventual fate of the universe. To help determine the mass of a neutrino, research teams at SLAC and Stanford University are collaborating to design the Enriched Xenon Observatory (EXO).

The neutrino must be of the Majorana type (whereby neutrinos are their own anti-particle) and must have mass for a certain type of rare nuclear decay to occur. The observed rate for that particular decay process, known as “neutrinoless double beta decay,” would offer a clue about what the mass of that neutrino must be.

The well-tested Standard Model of particle physics predicts the “neu-

A liquid Xenon detector at Stanford’s Enriched Xenon Observatory. This device is capable of detecting the neutrinoless double beta decay event observed in liquid Xenon.

neutrino double beta decay” of some nuclei, where two electrons and two neutrinos are emitted. This process has been observed for several nuclei. Xenon, enriched in the Xenon-136 isotope that undergoes double beta decay, can also serve as an ionization detector for those two ejected electrons.

If the ejected electrons have the maximum energy that could have been produced by the decay process, which will happen if no neutrinos are emitted, then neutrinosless double beta decay will have been observed. The Majorana property of neutrinos is then demonstrated, thereby settling one of the oldest and most important questions in neutrino physics—Do Majorana neutrinos exist?

Simultaneously, the neutrino mass can be determined from the observed decay rate.

The Barium Tag

Several methods are used to attack the problem. A technique unique to EXO is the Barium tag. Only when Xenon undergoes a double-beta decay does it leave behind a nucleus of Barium. Hence, the presence of Barium unambiguously signals the sought-after process.

The team at Stanford is developing the capability to unambiguously identify the Barium ion. Atomic spectroscopists have demonstrated that a single Barium ion can be put in an ion trap and, when illuminated by appropriate lasers, be positively identified as a Barium ion.

The wiggler on display at SLAC

The history-making first SSRL wiggler is now on display on an outdoor stand between the Ring Road and Gate 17, the access to SSRL.

Alex Chao Elected to Academia Sinica, Taiwan

By Linda DuShane White

It was 3:00 a.m. on July 4 when Alex Chao heard some spectacular news. Chao, Deputy Head of the Accelerator Research Department, had been elected a member of Academia Sinica in Taiwan by the 25th Convention of the Academy in Taipei.

Academia Sinica, founded in 1928, is Taiwan’s most prominent academic institution. Chao becomes one of 20 new members appointed to the Academy. With this new round of additions, Academia Sinica has 225 members.

Chao characteristically attributes the appointment not to himself alone. "It is the whole field that is being recognized," he said. Also credited is the outstanding collaboration and colleagues he feels "privileged to collaborate with, and to bounce ideas around with."

Professor Chao’s career began as a Postdoc at SLAC in 1974. By 1976 he was an Accelerator Physicist, and in 1982 he became Beam Dynamics Group Leader. In 1984, a few days after receiving his 10-year pin from then-Director Burton Richter, Chao left for the Superconducting Super Collider Central Design Group at Berkeley Lab, and followed this with a stint at the SSC Laboratory.

Mining SLAC, he returned nine years later. "SLAC is at the frontier of high energy physics. SSRL [synchrotron radiation] and accelerator physics, so there is no lack of exciting projects to work on. In my mind it’s the best place to do what I want to do."

Chao said he appreciates the wealth of opportunities to share with and learn from talented colleagues. At SLAC, he said, "If you want to share your thoughts or be inspired, connection is as close as the phone."

Because Academia Sinica only meets every two years, Chao’s first Academia meeting will be in 2004. He hopes the appointment will have a positive impact and provide opportunities for others.

"Accelerator physics is at a point of having to make a very significant contribution for the obvious reason that high energy physics needs it. The future of HEP depends on what accelerator physics can contribute in the next 10 years. I am cautiously optimistic that this should happen."

For more information on Academia Sinica, see: http://www.sinica.edu.tw/index.html

For more information on EXO, see: http://hep.stanford.edu/neutrino/EXO/
Get Ready for Windows Migration

By Miriam Born

Starting this fall, all of the Windows machines at SLAC will be migrating from Windows NT 4 to Windows XP. The migration affects a large portion of the staff, so awareness of the change and how it will occur is important to the community at large.

Why is it happening?

The migration is primarily motivated by the fact that Microsoft will stop supporting NT 4 Workstation on June 30, 2003.

Beyond that, benefits will be subtle and not necessarily noticeable to the everyday user. "Computers should crash less and have fewer software/hardware incompatibilities," said Brian Scott (SCS). "Security will be better and the technical support SLAC administrators provide will improve in quality and swiftness."

"The most noticeable difference will be the new capability to support USB devices such as scanners and printers," Scott said. "Laptop users, long forced to run Windows 2000 because NT 4 was unworkable, will now be able to use the same operating system as desktop users."

The interface will default to the "Classic" Windows interface, rather than the new XP interface, providing a familiar platform.

When will it affect me?

Most SLAC machines will be migrated in 2003. To make this migration as smooth as possible, beginning this month, power users and all members of SCS will be volunteered as pilots.

In October a random sample of Windows users will also migrate.

This process should uncover most problems, making for a smoother transition for the rest of us.

What do I have to do?

The administrator for your group will contact you via email, and then you and your administrator will work together to fill out a Migration Checklist. The XP upgrade will wipe your machine clean; the checklist will identify files that need to be saved and software that will need to be reinstalled.

On an agreed upon day, your administrator will take over your workstation for a few hours to do the upgrade, installing both Windows XP and Office XP. Those migrated in 2003 will also have their email moved to new servers running the latest version of Microsoft Exchange. When you return you will be given a copy of the User Survey.

Both the Migration Checklist and User Survey can be previewed at: https://www.internal.slac.stanford.edu/computer/windows/migration/Documentation/doc-index.asp

All are welcome at the

15TH ANNUAL DOE GOLF CHALLENGE
Monday, October 21, 2002
at
SkyWest Country Club in Hayward, CA
Cost: $70 (includes green fee, prize fund and range tests)
For more information contact:
Ben Smith, x2638
Ron Rogers, x2060
September 27, 2002

Arthur Bienenstock Appointed
Director of Stanford's Geballe Lab

By Linda DuShane White

On September 1, Professor Arthur Bienenstock became the new Director of the Geballe Laboratory for Advanced Materials (G-LAM) at Stanford University.

Bienenstock will remain a member of the Geballe faculty and will also stay on as Chair of the Materials Council. His new role will mean less time spent at SLAC. "I won't be here as much as I used to be. I'm pleased you're doing this article—so the SLAC staff understands why I'm not here as much and won't think I've forgotten them."

The role of the Materials Council is to formally coordinate materials research in a number of departments across the University. That role fits like a puzzle piece into his new position at the Geballe Laboratory, says Bienenstock, "The Geballe Laboratory provides space and infrastructure for scientists from a variety of departments to interact and cooperate in research. It contains administrative staff and several large-scale instruments that are shared by many of the faculty. It's a nice laboratory."

As most of us know, getting adequate funding for science can be an ongoing challenge, so it is gratifying to learn that according to Bienenstock, "The Department of Energy [DOE] recognized that historically Stanford campus faculty have helped to develop both the instrumentation and techniques that all SSRL Users have profited from, so it wants to encourage greater participation of Stanford faculty in SSRL as SPEAR3 and LCLS [the Linear Coherent Light Source] come into being. We expect it to provide funds for the construction of the G-LAM laboratory up here at SLAC."

"The DOE has also said that it expects to increase synchrotron-related funding for materials research here and on campus from 2.5M to 25M over the next decade for the same purpose," said Bienenstock. "Much of that research will be coordinated through the Geballe Laboratory.

Bienenstock has three main roles. He is seeking to bring campus and SSRL closer together, as well as developing G-LAM and the other facilities of the Materials Council. "It's very exciting for us here at SLAC and for us down on campus. We're really pleased."

For more information on the Geballe Laboratory, see: http://www-glam.stanford.edu/index.htm

Site-Wide Stand Down Highlights Safety Issues

By Irene Boczek

On August 29, ES&H organized a site-wide stand down to heighten everyone's awareness of safety and environmental issues at the lab. As SLAC Director Jonathan Dorfan said during the stand down, "Your health and safety and protecting the environment are of utmost importance to me."

We have seen an increase this year in accidents involving broken limbs, two near misses using cranes and equipment maintenance and other environmental releases.

These issues, especially during busy times such as the one we are in now, are reminders to each of us to continue to exercise care to ensure that our mission is successfully carried out and the members of the SLAC family and environment are safe.

Questions were raised during the meetings about general issues related to the stand down, as well as the specific incidents that lead to the stand down.

Q: Have accidents risen as the number of employees on site have gone up?
A: No correlation to this effect has been observed.
Q: Any relationship between contractions and accident rates, for example a higher ratio?
A: No correlation to this effect has been observed.
Q: What are we doing about the crane incidents?
A: The Hoisting & Rigging Task Force is reviewing these incidents and developing appropriate solutions. The solutions involve training, equipment maintenance and other programmatic elements.
Q: What was the nature of the environmental releases?
A: There have been two overflows into the storm drain system recently. Of significance here is that one blockage occurred as the result of material that should not be in the sanitary sewer such as towels, gloves and even pieces of concrete.

I hope the stand down was informative and stimulating for everyone conducting world-class science in a safe and respectful environment and is up to each of us. If you have any questions or comments about the stand down or any safety issue, please contact Mike Scharfenstein, ext. 3341.

For more information on Environmental, Health and Safety at SLAC, see: http://www.slac.stanford.edu/esh

Here's what you can do now, and every day:

Before you start a job, think through the tasks, the hazards associated with the tasks and your plans to control them.

Consider the personal protective equipment and tools needed and ensure that they are available and ready for service:

Remind yourself how to conduct the tasks safely and if you don't know ask your supervisor.

Make sure that the training needed for your job has been identified and that your training is current.

Last, remember we are in this together, so watch out for your fellow employees.

Work Safe, Work Smart Stats

Two injuries involving days away from work were reported in August 2002, according to Sharon Haynes, Workers' Compensation Coordinator.

The dates of injury were 8/2/02 and 8/8/02. The previous claim occurred on 2/21/02, leaving SLAC's record number of days between claims at 184 days.

DOE Address Change at HQ

The Department of Energy now has only one address for mail addressed to the Forrestal Building in Washington, DC and the Building in Germantown, MD.

The address for both buildings is:
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

The address for mail being sent to someone at the Germantown building can be enhanced using the mail code e.g. 5C_12GTN.

The address for Federal Express stays the same:
U.S. Department of Energy
10991 Germantown Road
Germantown, MD 20874

Interaction Point September 20, 2002
Family Day Captures Our Hearts

Upcoming Events

The Interaction Point is published bi-monthly every first and third Friday. Submissions are due the second and fourth Tuesdays each month. Send submissions to tip@slac.stanford.edu, or mail to TIP Editor, MS 58, Stanford Linear Accelerator Center, 2575 Sand Hill Road, Menlo Park, CA 94025.

TIP is available online at http://slac.stanford.edu/pubs/tip/