Director's Corner

By Jonathan Dorfan

In my April 6 All Hands, I spoke of the pioneering science that we will do at SLAC using ultra fast x-rays. I introduced you all to the Stanford Ultrafast Science Center that we have set up at SLAC to recruit and focus the world’s best talent to make astounding discoveries using the Sub-Picosecond Pulse Source (SPPS) facility in the Final Focus Test Beam (FFTB) and, beginning in 2009, the Linac Coherent Light Source (LCLS).

See whole story...

Revising the ES&H Manual

By Wayne Heiser

SLAC has embarked on an ambitious effort to revise its Environment, Safety, and Health Manual, one the Lab’s principal safety documents. This will be the first complete revision of the manual since it was first published in 1991 and will involve producing more than 40 subject-specific chapters, covering everything from the overall ES&H program at SLAC to specifics such as excavation safety, hazardous materials management, and stormwater pollution prevention.

See whole story...

Ashley Receives Presidential Award for Pioneering Programs

On November 16, Alonzo Ashley (HR) received a 2005 Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM)—a program supported and administered by the National Science Foundation (NSF).

See whole story...

Speaking of Success: Two Academic Career Counseling Center Stories

By Linda DuShane White

The Academic Career Counseling Center at SLAC was founded in 2003. Headed by Pauline Wethington (COM/HR), the Center helps SLAC employees create bright futures through further education or career enhancement. Two inspiring success stories are featured here.

See whole story...

SLAC Holiday Party Results in Fun

Enter the first ever Gingerbread Structure Competition!

This year’s event drew 64 runners and 37 registered walkers.
Register by December 16.

For more information and updates, please see Sharing.
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The SPPS facility is already breaking new ground, providing the hitherto unknown scientific basis for processes as fundamental as how substances melt. When a snowball melts, you can tell it has achieved a liquid state when the water drips through your fingers. But if you could follow the melting process, driven by the heat of your hand, from its very first instant—the first trillionth of second—would you be able to point to the exact moment the snowflake crystals disorder into liquid H₂O?

That is one of the many challenging questions facing researchers using the SPPS to probe the activities of materials on ultra fast timescales. SPPS makes intense x-ray pulses lasting quadrillionths of a second (called ‘femtoseconds’), by taking the electron beam from the linac, compressing it, and passing it through an undulator magnet in the FFTB. These pulses enable researchers to directly monitor through diffraction of the ultra fast x-rays the earliest atomic changes during melting.

One of the first SPPS experiments looked at the laser-driven melting of a semiconductor material similar to silicon. When the laser light strikes the semiconductor crystal, it first disrupts the electrons in the crystal, allowing the atoms to break from their constrictive bonds and move freely with their inertial energy. The experiment showed that in the first 500 femtoseconds, the atoms start moving away from their initial positions, spreading out into a larger volume like ripples from a stone tossed into a puddle but retaining the overall crystal shape.

New follow-on research has extended the time range and shown more. When the incredibly short period of 500 femtoseconds has passed, the atoms start moving away from their initial positions, spreading out into a larger volume like ripples from a stone tossed into a puddle but retaining the overall crystal shape.

The study also shows that direction matters. The distance that atoms travel before hitting boundaries (namely the other atoms) depends on which direction an atom is traveling. Thus the crystal disorders, and a liquid state is formed, at different rates in different directions.

Congratulations to the SPPS team for this new, exciting science. These measurements demonstrate the importance of high brightness, ultra fast x-ray probes for studying...
how reactions and structural changes occur at the level of the atoms on time scales that are ‘natural’ for the events.

We can all look forward to more remarkable discoveries at SLAC when the full power of ultra fast science is unleashed with the start-up of the LCLS in 2009. The first step in the LCLS construction has begun with the preparations for the injector at Sector 20 of the linac, and this spring the construction will start in earnest. LCLS construction was fully funded in the 2006 Energy and Water Appropriations Bill at $83 million. Many thanks to our colleagues in the DOE’s Office of Science for their exceptionally strong support of LCLS and their hard work in securing this funding which is so important to the future of science at SLAC.
Ashley Receives Presidential Award for Pioneering Programs

On November 16, Alonzo Ashley (HR) received a 2005 Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM)—a program supported and administered by the National Science Foundation (NSF). John Marburger, Director of the Office of Science & Technology Policy, personally presented the awards at the ceremony held in the Eisenhower Executive Office Building in Washington, D.C.

Ashley received his Award for originating and developing the SLAC Summer Research Program, now called the DOE Science Undergraduate Laboratory Internship (SULI) Program.

According to Sue Von Gee (AA), "It was a great honor to nominate Al Ashley for this very prestigious award. The honor was predicated on innovative EEO and AA programming that were initiated right here at SLAC. We should all be proud that Stanford University/SLAC and one of our own was recognized for it." Gee added, "We hope it will inspire others to make a difference in the scientific community by mentoring the next generation to pursue and excel in the sciences."

PAESMEM honors individuals and institutions that have enhanced the participation of underrepresented groups—such as women, minorities and people with disabilities—in science, mathematics and engineering education at all levels. Since its inception in 1996, the program has recognized 97 individuals and 68 institutions. This year's recipients included 10 individuals and one institution.

From the Awards Ceremony Program:

"Alonzo Ashley of Stanford University originated and developed the Stanford Linear Accelerator Center (SLAC) Summer Research Program for underrepresented minority undergraduates in science, technology, engineering and mathematics—now called the Science Undergraduate Laboratory Internship program. In addition, he was responsible for SLAC's charter membership in the National Consortium for Graduate Degrees for Minorities in Science and Engineering (GEM)."

For more information, see: http://www.nsf.gov/news/
Speaking of Success: Two Academic Career Counseling Center Stories

By Linda DuShane White

The Academic Career Counseling Center at SLAC was founded in 2003. Headed by Pauline Wethington (COM/HR), the Center helps SLAC employees create bright futures through further education or career enhancement.

All employees at SLAC are encouraged to take advantage of the free services provided by the Center. Academic financial support is available through funds from the Stanford tuition program, STAP funds and money for text books.

Wethington helps those she counsels cut through red tape with ease. Because of the large amount of funding and educational information available, it is helpful to consult an expert who can put together the unique combination of resources needed by each person. She also has expertise in the time management issues experienced by anyone working full time while attending school.

Two inspiring success stories are featured here. (Photos by Diana Rogers)

For more information, see: http://www2.slac.stanford.edu/career/

Jasmine Rogers

Currently a student at Foothill College, Jasmine Rogers (BSD) thought school was a thing of the past for her. “I know for sure that if we didn’t have this program I wouldn’t have gone to college,” she said. “I had decided that I had missed my chance.”

Rogers is taking the opportunities offered by funding and career planning resources at SLAC and plans to get her AA from Foothill. She will then transfer to San Jose State. Her eventual goal is a BFA.

Diana Viera

Ten years after graduating from high school, Diana Viera (GLAST) began attending DeAnza College in June with a goal of getting her AA in Business Administration.

“I was not aware of the Career Counseling availability at all, although I have been at SLAC for years,” she said.

Viera consulted the Web and found out that Stanford helps with expenses. She discovered SLAC career services through a
in Graphic Design, with a minor in Computer Science.

Rogers says of Wethington, “She makes it so easy. If I had started this when I began working at SLAC in 2000, I would be working on my Masters by now.”

“I always feel like I’m in really good hands. She always has a clear, concise answer for me. If she doesn’t, she will research it and get back to me. It allows me to feel confident about where I am going.”

Rogers advises everyone at SLAC to be sure to use their STAP funds!

recommendation by Diedre Webb (HR).

Wethington’s first question was, “Where are you in your life?” With a family and a job, Viera was going to try to go to school four hours a night. “It would have been too much for me,” Viera says. Wethington eased her into the college experience, recommending that she take ‘Women of Color,’ an inspiring, motivating class that proved to be perfect. She finished the class with an A and a feeling of empowerment. “When I was finished with that course, I knew I was ready to go back to school.”

“One thing about Pauline was that she wanted to get to know you on a personal level so that she could balance things out for you. She’s really good at her job. I trust her.”

The Stanford Linear Accelerator Center is managed by Stanford University for the US Department of Energy.

Last update Friday December 02, 2005 TIP
Presenting the 2005 Property Control Honor Roll

By Leslie Normandin

The inventory results for fiscal year 2005 were recently reported to DOE. SLAC rated an ‘outstanding’ for both sensitive items and equipment over $5000. Thank you to all the departments who accounted for 100 percent of their reportable inventory. Our honor roll recipient list keeps getting longer every year.

Director’s Office & Administration

Affirmative Action
Human Resources
Communications

Operations Directorate Office

Technical Information Services
Surface and Materials Science
Metrology Dept
Klystron/Microwave Dept
Mechanical Design
Mechanical Fabrication
BSD Division Office
Budget Office
Accounting/Travel
Purchasing Department
Business Systems & Laboratory Support
ES&H Div Office
Chemical & General Safety
Environmental Protection
Radiation Protection

Photon Science Director’s Office

SSRL Division Office
Experiment Support & Research Department

Particle and Particle Astrophysics Directorate Office

PPA Administration & Operations Support
PPA Mechanical Engineers Department
Accelerator Research Dept A
Accelerator Research Dept B
Advanced Computation Department
International Linear Collider Dept
SLAC BABAR Group B
SLAC BABAR Group C
SLAC BABAR Group E
Enriched Xenon Observatory I
Theoretical Physics Department
GLAST
KIPAC

LCLS Project

To find out how your department can make the Honor Roll or to get answers to any questions you have about Property Control, contact Leslie Normandin, Property Control Manager, Ext. 4350, leslie@slac.stanford.edu.
Revising the ES&H Manual

By Wayne Heiser

SLAC has embarked on an ambitious effort to revise its Environment, Safety, and Health Manual, one of the Lab's principal safety documents. This will be the first complete revision of the manual since it was first published in 1991 and will involve producing more than 40 subject-specific chapters, covering everything from the overall ES&H program at SLAC to specifics such as excavation safety, hazardous materials management, and stormwater pollution prevention.

Timing of Chapter Release

The plan is to complete this work in three phases, beginning with program basics (chapters 1, 2, and 31—'General Policy and Responsibilities', 'Work Authorization' and 'Institutional ES&H Committees'), then high-priority hazard specific chapters, and finally the remaining chapters.

The first phase was completed in October, in time for the DOE review of our integrated safety management system (ISMS). The second phase is to be completed by the end of December and the third by the end of December 2006.

Who is Participating

The chapters are being written by subject matter experts and stakeholders from across SLAC. To ensure all SLAC personnel have a voice, each chapter will go through a four-phase formal review process, including stakeholder and site-wide reviews followed by approval by the ES&H division director and chief operating officer, then final approval by the ES&H Coordinating Council.

Comments and responses are captured and a permanent record created by an on-line review and comment system jointly developed by the ES&H Knowledge Management Department and Technical Publications, available for input by all SLAC personnel (see: https://www-internal.slac.stanford.edu/esh/docreview/). For now, the system is being used only for the site-wide review, but we plan to extend it to all review phases.

All SLAC personnel can participate in site-wide reviews by using this system. In addition, an e-mail notification of any new chapter for review is sent to staff selected by the subject matter expert, ES&H division director and each directorate's ES&H coordinator, among others.

Approved chapters are posted on the ES&H web site (in What's New and on the manual page itself, http://www-group.slac.stanford.edu/esh/manuals/eshmanual.html) announced in SLAC Today as well as in an e-mail sent to all supervisors, safety coordinators and building managers.

Using a New Approach

Each chapter is being written following a new standard outline, intended to make both writing and using chapters easier. Based on a benchmark survey (https://www-internal.slac.stanford.edu/esh/working/manual/manual_doe_survey.pdf) of practices at other DOE facilities, the new outline features a common set of required content (overview, scope, standards, definitions, requirements, exhibits, references and ownership).

In addition, the outline is designed to arrange the content in a more flexible way. An important example is the use of separate documents—called 'exhibits'—for procedures,
guidelines and specific requirements intended for line management and staff.

**Preparing for the Future**

Although it may not be noticeable just yet, the new process and outline are designed to make the manual a more dynamic, complete and current collection of content that more fully exploits the power of the web and dovetails with the overall effort to improve the SLAC website.

**Making SLAC Safer**

Finally, beyond the schedules, plans and outlines, remember the goal of this effort is to make SLAC safer by improving our understanding of the hazards we face and how we respond to them. So please keep an eye out for chapters that are under review and newly published. See the manual page, http://www-group.slac.stanford.edu/esh/manuals/eshmanual.html for current chapters, schedule and a link to the review system.

Let us know if you have any questions or comments, by sending e-mail to  eshpubs@slac.stanford.edu. Be sure to include the phrase ‘ESH manual’ in the subject line.

The Stanford Linear Accelerator Center is managed by [Stanford University](http://www.slac.stanford.edu) for the [US Department of Energy](http://www.energy.gov).

Last update Wednesday November 30, 2005 by [TIP](http://www2.slac.stanford.edu/tip/2005/0930/manual.htm)
**Library Exhibit**

*By Lesley Wolf*

An exhibit, entitled ‘In the Shadow of the Bomb’ is now on display at the SLAC Library. This exhibit features a prototype of the shockwave gauge that was used to measure the yields of the nuclear explosions of the A-bomb, first over Alamogordo, New Mexico (Trinity), then over Hiroshima and Nagasaki.

The shockwave gauge on display is on loan from W.K.H. Panofsky (DO). He was one of the principals on the shockwave gauge project and was present at the Trinity explosion. A letter was attached to the battery case of the shockwave gauge, imploring physics professor Ryokichi Sagane to convey to the Japanese high command the destruction that was to follow if Japan’s aggression continued. A copy of this letter is also on display.

The title of the exhibit is taken from the book by former SLAC deputy director, Sid Drell, which gives an insider’s view of the nuclear threat.

*The ‘In the Shadow of the Bomb’ exhibit will run in the SLAC Library through January 30, 2006.*

*(Photo courtesy of Lesley Wolf)*
TIP Holiday Publication Schedule

Plan for your news in the headlines now! Stories due 10 days before publication date.

The Interaction Point issue dates and story deadlines through January 2006:

- December 16 - articles due Dec. 6
- January 20 - articles due Jan. 10

For more information, see:
http://www2.slac.stanford.edu/tip/submissionguidelines.htm
The SLAC Emergency Hotline Number:

1-877-447-SLAC (7522)

Please make a note of the SLAC Emergency Hotline number. In the event of an emergency, the most current information about SLAC will be a single phone call away.
MILESTONES

Service Awards

5 Years

Chiu, Hsiu-Ju (SG), 12/1
Halyo, Valerie ((EE), 12/1
Kelsey, Michael, (EC) 12/1
Muller, Olaf (MD), 12/11
Salazar, Manuel (CEF), 12/1
Washington, Keith (OHP), 12/1

15 Years

Azevedo, John (PUR), 12/1

To submit a Milestone, see:

See Awards and Honors at:
http://www.slac.stanford.edu/slac/award/
SLAC COLLOQUIUM SERIES PRESENTS

Science Under Attack!
Public Policy, Science Education and the Emperor’s New Clothes

Lawrence Krauss
Case Western Reserve University

Monday, December 5,
4:15 p.m.
Panofsky Auditorium

Lawrence Maxwell Krauss gives the SLAC Departmental Colloquium series audience what we have all been waiting for: A view of public policy from the author of The Physics of Star Trek.

(Photo courtesy of Krauss)

The popular debate about the teaching of intelligent design in public schools is but one quandary for scientists and policy makers. Given recent developments which have worked to breed a general distrust of science, it is evident that researchers and politicians alike should be wary of using popular opinion as a guide for policy and pedagogy when it comes to science in public education. Krauss will qualify this complex issue and will address how educators, policy makers and scientists can work effectively to prevent public misconceptions of science.
Facilities Managers Meeting

On November 16-17, SLAC held the Fall Facility Managers Meeting for those responsible for facility operations and maintenance in each of the DOE labs to discuss common issues and share lessons learned, with a special emphasis on safety.  (Photo by Diana Rogers)
Next talk in the SLAC Public Lecture Series:

Archimedes: Accelerator Reveals Ancient Text

Uwe Bergmann, SSRL

Tuesday, December 13, 7:30 p.m.
Panofsky Auditorium

Free Admission; no reservations necessary.
Please bring photo ID.

(Image by Terry Anderson)

For more information, see:
SLAC Holiday Party Updates

Enter the first ever Gingerbread Structure Competition!

Winners will get a $25 gift certificate to Round Table Pizza. Please let us know by December 16 if you will be bringing an entry to the competition: [http://www-project.slac.stanford.edu/holidayparty/2005/competition.asp](http://www-project.slac.stanford.edu/holidayparty/2005/competition.asp)

**Rules:**

- Entries must be submitted by 9:30 a.m. in the Breezeway on December 20.
- Entries must be created by a group/department in SLAC.
- Gingerbread structures must fit on a 2’ x 2’ board & be portable.
- All items on the structure (less the surface it is built on) must be edible.
- Categories for judging will be: creativity; stability, presentation and use of materials.

**SHARING CAMPAIGN UPDATE**

**CHOICES**

Packets for the Stanford Charitable Giving Campaign ‘Make a Choice, Make a Difference’ have been distributed to employees in interoffice mail.

**FOOD**

Second Harvest Food Drive—**November 28 to December 21**

Look for barrels in your area soon.

**WARMTH**

SLAC Blanket and Coat Drive—**December 1 to December 16**

Used & New Jackets/Blankets OK (please, no other types of items)

**WISHES**

The Family Giving Tree Drive—until **December 13**

Look for posters and wish cards in areas around SLAC.

For more information and updates, see the [Sharing](http://www2.slac.stanford.edu/tip/2005/dec02/sharing.htm) webpage.
34th Annual SLAC Run Results in Fun

By Ruth McDunn

This year's event drew 64 runners and 37 registered walkers. We changed the route this year to accommodate construction on the north side of the gallery, but the course length did not change.

Prize donors included: Runner's High (Menlo Park), Eric's Gourmet Deli and Safeway (Sharon Heights Center). Coffee and pastries were provided by Starbucks Coffee (Sharon Heights Center).

This year's t-shirt was designed by Terry Anderson (TIS). There are only a few left, mostly small, so don't wait too long to purchase yours. We also have lots of shirts from last year, available for $5.00/each. Contact Ruth McDunn (Ext. 2014, Central Lab, Bldg. 40, Rm. Y201).

Next year will be the 35th annual event and we would like to make it a special event. If anyone has suggestions on what would make it special, please forward your ideas to Ruth McDunn.

Complete results for the 34th annual SLAC race are posted, see: http://www-project.slac.stanford.edu/slac-race/2005.html

Top 3 Overall Winners

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The all volunteer Committee wishes to thank all of the participants and the many volunteers who supported the event and assured it was fun for everyone.

(Photo by Diana Rogers)
The Stanford Linear Accelerator Center is managed by Stanford University for the US Department of Energy.

Last update Friday December 02, 2005 TIP
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The Interaction Point

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The Interaction Point is published twice monthly every first and third Friday. Submissions are due the second and fourth Tuesdays of 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://www2.slac.stanford.edu/tip/