Ultra-Fast Science Succeeds at SLAC

By Heather Rock Woods

The Sub-Picosecond Pulse Source (SPPS) collaboration has published data from the first experiments ever using a linear accelerator-based femtosecond x-ray source, and has developed an important tool for ultra-fast science. SPPS makes the world's shortest bunches of electrons in the SLAC linear accelerator and turns them into very bright pulses of x-ray light one thousand times shorter than those made in synchrotron rings like SPEAR3.

See whole story...

Stanford Site Office Welcomes Nancy Sanchez

By Linda DuShane White

Nancy Sanchez, the new DOE Stanford Site Office Manager, has completed her training and is busy getting to know her new job and community. Sanchez was recruited and hired by Milton Johnson, Chief Operating Officer in the Office of Science (SC), in Washington, D.C. To prepare for her new position, Sanchez has spent time training with Bob Wunderlich in Chicago and here

ES&H Safety Tip of the Week: Creating a Strong Safety Culture

Performing our work safely is important on both an individual and group basis. Bringing a team spirit to safety is key to creating a culture of safe practices that is embedded in all areas of our Laboratory.

Are you helping to create a culture of safety here at SLAC?
Public Lecture, April 26: Smarter Drug Design

By Linda DuShane White & Heather Rock Woods

Clyde Smith (SSRL) will speak on ‘Smarter Drugs—How Protein Crystallography Revolutionizes Drug Design’ for the SLAC Public Lecture on Tuesday, April 26, at 7:30 p.m. in Panofsky Auditorium.

Welcome to SLAC Summer Student Program 2005!

By Lisa Mongetta

Through the SLAC Summer Student Program, approximately 1,300 students have benefited over the years from their experiences working alongside professionals who have opened the way for them to see life in a scientific environment.
The Stanford Linear Accelerator Center is managed by Stanford University for the US Department of Energy

Last update Friday November 04, 2005 by Topher White
Director's Corner

By Jonathan Dorfan

Thank you all for coming to the All Hands talks last week. I enjoyed the opportunity to describe the direction that SLAC will be moving in the next few years. I hope the presentation conveyed my personal excitement, commitment and enthusiasm for the wonderful new scientific opportunities that lie ahead. Never before have we had the opportunity of making historic contributions over such a wide range of scientific disciplines. I greatly appreciate the very positive e-mail responses that I received after the talks.

The size of the SLAC photon science program will grow dramatically over the next three years, and soon the bulk of our funding will come from the Basic Energy Science (BES) division of the Office of Science. Thanks to the BES-supported LCLS and SPEAR3, our Lab will be at the forefront of understanding of both the ultra-small and the ultra-fast in the disciplines of materials, physical, chemical, biological, environmental and medical sciences. This combination of facilities will make SLAC the world’s premier photon science laboratory. The Ultra-fast Science Center at SLAC, a partnership of the DOE and Stanford University, will provide the intellectual focus for much of the work done at the LCLS and will guarantee that the research at the LCLS is fully maximized and of stellar quality. With the large investment in LCLS, including the anticipated major upgrades in ~2012, the DOE has provided a long and stable future for our Laboratory, one that will produce a scientific revolution in the ultra-fast world.

Although the future in particle and astroparticle science is less certain, it is equally as exciting. The B Factory has three more years of data taking ahead and has major discovery potential for understanding the matter/antimatter mystery. While the facility will shut down for data taking at the end of FY08, data analysis by the BaBar collaboration will continue for several years thereafter. The world HEP community has made the International Linear Collider (ILC) its highest priority and the science case is overwhelmingly compelling. Recent worldwide and U.S. events make me increasingly confident that the ILC will be built. SLAC staff will play a vital role in designing, building and operating the accelerator and the detector(s). The Kavli Institute is expanding rapidly, already attracting the best young minds in particle astrophysics and cosmology to SLAC. The Kavli building, which will be a world center for understanding the revolutionary new concepts that underpin our
mysterious Universe, will be completed early next year. Stanford’s large investment in the Ultra-fast Science Center and the Kavli Institute are important examples of the University’s increased investment in SLAC.

We thank the DOE and Stanford University for the confidence they are expressing in us. As our two key stakeholders, they understand that SLAC possesses many unique core competencies—including our most exceptional asset, you the staff. The spectrum of talent at SLAC covers a wide range of scientific, technical and engineering skills backed up by excellent administrative personnel, all with a particularly strong capability for generating scientific breakthroughs. Our staff includes people who provide scientific and technical leadership both nationally and internationally and this leadership abounds in all the key scientific program areas of SLAC: photon science, particle physics, particle-astrophysics, accelerator science and computing.

Maximizing the benefits to the Nation of the increasing investments by our primary stakeholders, accommodating to the rapidly changing balance of the program elements within SLAC and insuring the safest possible workplace for our staff and users requires a new management structure at SLAC. I am engaging the senior management in this issue and I will be sure to keep you informed.

We have an exciting future ahead, filled with opportunities for scientific breakthroughs in many disciplines. The innovative initiatives I described above, the intellectual capital in our SLAC staff and our ability to work with the international user community to ‘mine’ breakthrough-science, will allow us to exploit them to the full. Welcome to a fantastic ride!
Ultra-Fast Science Succeeds at SLAC

By Heather Rock Woods

The Sub-Picosecond Pulse Source (SPPS) collaboration has published data from the first experiments ever using a linear accelerator-based femtosecond x-ray source, and has developed an important tool for ultra-fast science. SPPS makes the world’s shortest bunches of electrons in the SLAC linear accelerator and turns them into very bright pulses of x-ray light one thousand times shorter than those made in synchrotron rings like SPEAR3.

Pulses of such short duration—lasting some 80 femtoseconds, or 80 millionths of billionths of a second—shine a lightning-fast strobe light on the swift movements of the microscopic milieu.

“Because of the amazing properties of the x-ray source, we were able to answer a long-standing problem in condensed matter physics, concerning how solids transform into liquids on ultra fast time scales,” said Aaron Lindenberg (ESRD).

Lindenberg was the lead author on the SPPS paper published April 15 in Science. The other paper, headed by Adrian Cavalieri (University of Michigan), appeared in the March 25 Physical Review Letters; the researchers used SPPS to develop and test a new timing technique, which will be essential for many SPPS and Linac Coherent Light Source (LCLS) experiments. Both papers involved collaborators from multiple institutions around the world.

“The electron bunch alters the electro-optic crystal (vertical line) when it passes by the crystal. Laser light (diagonal line) that shines through the altered crystal is also affected, recording the electron bunch length and arrival time. Image by Adrian Cavalieri (Univ. Michigan)

“Since SPPS has so many similarities to future free electron lasers like LCLS, currently being built at SLAC, these experiments lay the groundwork for the next generation of ultra-fast experiments,” Lindenberg said.
The new Ultra-fast Science Center at SLAC, Stanford and SSRL will provide world leadership in ultra-fast research (including experiments at SPPS and LCLS) and the development of experimental techniques.

In the first SPPS experiment, researchers shone laser light to melt a room temperature crystal of semiconductor material, and sent x-ray pulses to probe the material. The scattered x-rays provided a glimpse of the first step in the transition from solid to liquid. In those first few hundred femtoseconds between solid and liquid, the atom positions had on average the crystalline (regular, repeated) structure of a solid, yet the atoms had moved far from their initial positions, with a disordered structure like a liquid.

"It's the first time we've been able to watch the pathways the atoms follow in the first femtoseconds as the material transitions from solid to liquid," he said.

Initially, atoms randomly move small distances as they vibrate, but are kept in position by chemical bonds to other atoms. The laser light instantaneously broke the bonds, allowing atoms to continue moving in the random direction they were headed just before the bonds broke. This takes place before the atoms heat up because the time scale is faster than the time it takes to transfer energy from the laser to atoms in the crystal. The result is a very unusual, intermediate state of matter.

Researchers learned the transition state is governed by inertial dynamics, simply stated by Newton's First Law as: an object in motion continues in motion (in the same direction). Understanding the transition steps of ultra-fast melting may have technical applications, for example in micro machining and laser eye surgery.

**Clocking Femtosecond X-rays**

In ultra-fast experiments, timing is everything. The other SPPS experiment solved a major issue by borrowing ideas from ultra-fast laser technology. Many SPPS and LCLS experiments will require a laser to pump, or start, a process in the system under investigation. To put data in order chronologically—important for seeing chemical or other reactions over time—researchers need to time-stamp the arrival of the laser pulse and the arrival of the x-ray pulse that probes, or observes, the system.

Cavalieri and his collaborators used electro-optic sampling to measure the arrival time of the x-ray pulses in relation to the arrival of the laser pulses. The laser pulses travel a few feet to the experimental sample, while the x-ray pulses originate as electron bunches two miles away at the start of SLAC's accelerator. And while laser pulses can be put out in steady, reliable intervals,
it’s tricky to perfectly time the electron/x-ray beam, so there is an intrinsic time jitter, where each x-ray pulse arrives at a slightly different time relative to the laser pulses.

Just before an electron bunch gets converted into an x-ray pulse, it speeds past an electro-optic crystal placed next to the beam. The strong electric field generated by each electron bunch alters the properties of the crystal, but only at the instant the electrons pass by. Experimenters then use an ultra-fast laser pulse to probe this change. The characteristics of the laser light exiting the crystal reveal the electron bunch length and arrival time, which in turn indicates the arrival time of the corresponding x-ray pulse.

“The angle of the laser pulse sweeping through the electro-optic crystal changes space into time. The geometry fixes the sweep rate and the time window,” Cavaleri said.

To confirm the technique’s reliability, scientists plotted their electro-optic timing data against the timing data from the SPPS melting experiment—a rare case where the signal strength allowed data collection at all time intervals in a single shot—and found good agreement.

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

Last update Thursday May 05, 2005 by Topher White
Stanford Site Office Welcomes Nancy Sanchez

By Linda DuShane White

Nancy Sanchez, the new DOE Stanford Site Office Manager, has completed her training and is busy getting to know her new job and community. Sanchez was recruited and hired by Milton Johnson, Chief Operating Officer in the Office of Science (SC), in Washington, D.C. To prepare for her new position, Sanchez has spent time training with Bob Wunderlich in Chicago and here at SLAC with Michael Holland, the current Acting Manager.

She brings broad experience in the private sector to her position at SLAC. Her background includes working at AT&T during their process-oriented ‘golden age,’ followed by time at dotcoms during the boom. Immediately before coming to SLAC, Sanchez was a Vice President at JP Morgan Chase. “It’s curious that my breadth of experience in a variety of industries seems to have been the best training ground possible for what I’m doing now, which I consider a hybrid of pure management and managing in a technical environment.”

An Epiphany

“What called me from the private sector to the public sector was that I walked out of the World Trade Center at 8:45 the morning of September 11, 2001. One hundred twenty seconds made the difference between my being underneath fire in the sky and being in a building.

“When I saw the fireball I thought a lot of things, but in the time between the first and second plane hitting I realized at that moment that working for a big bank no longer had a sense of meaning for me. I thought, I’m too old to join the marines or the army and I’m fundamentally non-violent so I want to find a way to be of service to my country.

“I went through about two years after that doing business continuity planning and disaster recovery planning at the bank. My personal agenda was always twofold: keep people safe, keep the business going, and do great work.”
Sanchez then began searching the government database, Jobs USA, seeking a position which would allow her to to serve in ways, “where I can help make the environment safer and be a good steward for America.”

Sanchez is no stranger to California. Her older sister lives in Piedmont and her niece is a sophomore at Stanford. Her sisters went to Stanford and Sanchez was accepted as well, but chose instead to earn her Masters in Public Administration from USC.

The public sector is a good fit. “People here have been very gracious. I was happy here when I first got a sense of the people both in the Site Office and across the Lab.”
ES&H Safety Tip of the Week: Creating a Strong Safety Culture

Performing our work safely is important on both an individual and group basis. Bringing a team spirit to safety is key to creating a culture of safe practices that is embedded in all areas of our Laboratory.

Are you helping to create a culture of safety here at SLAC? Ask yourself the following questions:

• Are safety and safety terms a part of your language at work?

• Are workplace safety practices a part of your job description and your performance reviews?

• Are safe behaviors specified and enforced in your work?

• Do you feel rewarded, and do you reward others, in a tangible, visible way for promoting safety?

• Are safety concerns evident in your interaction with other staff?

• When you begin a new task, are you briefed and do you brief others on safety procedures and on the consequences for ignoring safety practices or engaging in unsafe behavior?

• Do you observe and correct hazards when you see them?

• Do you always ‘dress for success’ by using the appropriate protective gear and equipment?

• Is safety a topic at every meeting and are the meetings well attended?

Let’s work together to make the Laboratory a safe and secure environment.
Recipient of 50 Year Award

• A Fun-Filled Evening

• What Was Happening 20, 30, 40, & 50 Years Ago?

EVENTS

• Public Lecture, April 26: Smarter Drug Design

• 'Manufacturing Great Science at SLAC', April 26th

• Stanford Community Day Features SLAC Einsteins

• DRAS Fundraising Efforts Continue

• Local Band Makes Good Music

• Electrical Safety Meeting Gathers at SLAC

• Mark Your Calendars for Juneteenth

POLICIES AND PROCEDURES

• Alpine Gate Hours Extended

• Mileage Rate Increased

• Fueling Your SLAC Vehicles

• Key Office Relocated to Safeguards & Security Office

ABOUT TIP

• Staff/Contact

• Submission

For more information on Environment, Health and Safety, see: http://www-group.slac.stanford.edu/esh/
Annual Performance Evaluation Forms Have Changed

By Carmella A. Huser

The performance evaluation forms that we will be using this year have been substantially revised. The revisions more fully integrate safety into the evaluation process, make the forms easier to use and more clearly describe the responsibilities of those who supervise staff and those who do not supervise others.

Important Changes

1. There are two new performance evaluation forms, one for Non-Supervisory Staff and another for Supervisors and Leads. These forms are available online (http://www-group.slac.stanford.edu/hr/forms.html). Old evaluation forms should not be used.

2. The performance period has been extended to 13 months this year, from April 1, 2004 through April 30, 2005. In the future, the evaluation period will be May 1 through April 30.

3. Individual goals developed as a result of the Integrated Safety Management System must be included in the goal setting process.

4. Supervisors must certify that the annual review of the routine Job Hazard Analysis and Mitigation (JHAM) process has been completed with the employee prior to the completion of the appraisal process and that the ES&H Employee Training Assessment (ETA) has been reviewed and updated as appropriate.

5. Forms must be submitted to Claudia Ransom (HU) on June 10 for non-bargaining unit employees and on June 30 for bargaining unit employees.

Who is Evaluated?

All regular employees must be evaluated, excluding Research Associates or new employees who have been at SLAC for less than one year. New employees are evaluated on their one-year anniversary date.

Evaluations should be completed by the assigned supervisor. For employees who carry out extended assignments under the oversight of other work groups, the assigned supervisor should solicit and integrate input from the management of those other work groups. The evaluations of recently transferred
employees should be completed by the assigned supervisor with input from the former supervisor.

Attend a Performance Evaluation Workshop

All supervisors and managers conducting performance evaluations are expected to attend one of the Performance Evaluation Workshops. In addition to explaining the performance evaluation process and forms, this year’s workshops will stress: (1) how to set safety and other performance goals and (2) how to conduct performance meetings with employees.

The two-hour long workshops will be held in the Redwood Rooms C/D, ROB Bldg. 48. The schedule is:

Monday, April 18, 10 a.m. - noon
Tuesday, April 19, 1 p.m. - 3 p.m.
Wednesday, April 20, 1 p.m. - 3 p.m.

Contact Erin Shatara, Ext. 2265, erin@slac.stanford.edu to confirm a time.

POLICIES AND PROCEDURES

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ABOUT TIP

- Staff/Contact
- Submission
Welcome to the SLAC Summer Student Program 2005!

By Lisa Mongetta

Through the SLAC Summer Student Program, approximately 1,300 students have benefited over the years from their experiences working alongside professionals who have opened the way for them to see life in a scientific environment.

There are significant changes to this year's program that include stronger focus on safety, age requirements, and the posting of all Summer Student Job Requisitions. Please read the program information carefully and feel free to call the Employment Services Office with your questions. Please see the following url for complete Program Information:
http://www-group.slac.stanford.edu/hr/e/SummerDefault.html

Your assistance in dispersing program information to those in your department who may hire a summer student, and in submitting employment requisitions for summer students as early as possible is greatly appreciated and will benefit us all.

Diedre Webb is the Summer Student Program Administrator. She can be reached on Ext. 4744.

We look forward to a rewarding summer program!
Taking a New Look at the Public Web Site

By Kathy Bellevin

SLAC is evolving, and our Web site is going to evolve as well with a new initiative to redesign the public site. This effort will include the Public homepage, many of the public information and visitors pages and a host of other pages around the site.

More that just a new look and feel, the redesign will add new navigational tools and reorganize how information is presented on the homepage. This will help our audience more quickly find important content, and also better showcase many of the initiatives we've recently undertaken.

The new site will also provide new and better information on SLAC events, the public lecture and tour programs, site access, directions and other critical information.

Members from every division are involved in this project, bringing together physicists, Web managers, supervisors and administrative staff to make sure we have many perspectives represented.

We could use your help!

Would you like to get involved in this effort? We’d love to hear your comments, suggestions and opinions. We also need folks to help us test out the new pages as we move toward launch, which is planned to take place in late June.

Please contact Kathy Bellevin, Ext. 2585, kathyb@slac.stanford.edu to volunteer your time.
Attention 'Mobile' and 'Remote' Outlook Users

By Teresa Downey

Do wish you could use Outlook 2003 from off-site?

Do you use Outlook Web Access, but would rather use Outlook 2003?

If you answered ‘yes’ to either of these questions and you have Windows XP, you can now use Outlook 2003 from anywhere. Previously, if you wanted to use Outlook to read your SLAC e-mail when you were off-site you would have to start VPN first, but this isn’t necessary anymore. You just have to make a one-time change to your Outlook settings.

We have enabled a new feature in our Exchange 2003 server which allows you to use Outlook 2003 from any network. This option modifies the way Outlook works so that the communication passes over the port normally used for secure web traffic when you are off the SLAC network. But when you are on the SLAC network it will work just as it always has. After making the configuration changes to Outlook, if you can reach the web with your browser, then you can read your e-mail with Outlook 2003.

For configuration instructions please visit:
http://www2.slac.stanford.edu/comp/messaging/Using/rpc-http.htm
Welcome New Employees!

The new employee orientation held April 7 included (left to right): Felix Adikara (CEF), Michael Cook (CEF), Igor Pavlin (GLAST), David McGiven (BSD), Ladan Saghafi (PUR), and Dino Amador (CEF).

Photo by Diana Rogers
MILESTONES

Service Awards

5 Years
Diaz, Gabriel (CEF), 4/19
Ganapathi, Kausalya (MFD), 4/17
Gonzales, J. Richard (MD), 4/21
Kamæ, Tuneyoshi (ASG), 4/26

10 Years
Britt, Derrick (MD), 4/17

15 Years
David, Rebecca (PUR), 4/30
Fisher, Alan (AD), 4/19
White, Gregory (ESD), 4/30

20 Years
Campos, Toni (HR), 4/23

25 Years
Brown, David (ESD), 4/16

Retirements
Boyarski, Adam (EC), 3/24
Cook, Robert (SCS), 3/24
Crume, Mary (SCS), 3/24
Ficklin, David (KLY), 3/17
Lin, Ih (CGS), 3/17
Marcelja, Frane (PEL), 3/17
Tilghman, Crystal (TIS), 3/17
White, Howard 'Bebo' (SCS), 3/22
Wisinski, Dennis (SCS), 3/24

Deceased
Good, Douglas (SEC), age 36, on March 31, 2005
Recipient of 50 Year Award

- A Fun-Filled Evening
- What Was Happening 20, 30, 40, & 50 Years Ago?

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ABOUT TIP

- Staff/Contact
- Submission
SID DRELL IS THIRD RECIPIENT OF 50 YEAR AWARD

Sidney Drell (DO) came to Stanford in 1951, after obtaining his Ph.D. at the University of Illinois in 1949.

In 1956, Drell was hired as a Professor of Physics at Stanford. From 1963 to 1998, he was a Professor at SLAC, as well as serving as Deputy Director of SLAC from 1969 to 1998.

Since 1998, he has been Professor Emeritus at SLAC and senior fellow, by courtesy, at the Hoover Institution on War, Revolution and Peace.

Drell was also a founding member of JASON, a group of scientists who consult the government on critical national issues. Drell served as a member of the President’s Foreign Intelligence Advisory Board from 1993 to 2001.

He has served on many other outstanding positions and received many awards and accolades for his work in physics and arms control.

In 1998, it was said of his impact on arms control and defense, that “Sid has been an important contributor to, indeed shaper of, the debates and the concerns about the issues.”

His research and contributions have spanned the fields of theoretical physics, elementary particle physics, quantum theory, national security and arms control.

Past recipients of this award were Karl Brown and W.K.H. Panofsky. They are honored with a special chair that has the Stanford logo carved into it.
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ABOUT TIP

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• Submission

Sid Drell (DO) is shown seated in the special chair presented by Jonathan Dorfan to him for 50 years of service at Stanford and at SLAC.

Photo by Diana Rogers
A Fun-Filled Evening

By Erin Shatara

On March 29, SLAC honored employees who reached 20, 30, 40 and 50 years of service for their work at Stanford and SLAC at the Annual Service Awards Dinner at the Stanford Faculty Club.

This year, there 51 employees earned one the 20, 30, 40 and 50 year service awards, including: 38 twenty-year awardees; 10 thirty-year awardees; two forty-year awardees; and one fifty-year awardee.

The 97 guests in attendance at the event enjoyed dinner followed by a presentation by Carmella Huser and Erin Shatara of some of the major events, names in the news, movies and happenings at SLAC during the first year each set of employees started at SLAC. See the story 'What Was Happening 20, 30, 40 & 50 Years Ago?' for some of these interesting details.

“I thought the evening was well-planned and presented,” said Vickee Flynn (CEF), who received her 20-year award pin and gift clock. “HR is to be commended for putting on a memorable evening.”

Later the guest speaker for the evening’s festivities, Roger Blandford, gave a special presentation titled 'Observing SLAC'.

Blandford discussed his observations of SLAC since his arrival in 2003 as the new director of the Kavli Institute at Stanford.

Laboratory Director Jonathan Dorfan congratulated the awardees on their long-term service, dedication and importance to the successes at the Laboratory. Each awardee was presented with a Stanford pin and a special commemorative gift as mementos of their years of service.
What Was Happening 20, 30, 40 and 50 Years Ago?

By Erin Shatara

What was happening 20, 30, 40 and 50 years ago? Take a look at the events that occurred during the years our awardees started their work at SLAC:

1954

- Eisenhower was President, Nixon was Vice President and Goodwin Knight was Governor of California
- J.R.R. Tolkien’s *The Lord of the Rings* is published
- Former Yankees great Joe DiMaggio marries legendary actress Marilyn Monroe
- Best Picture was *On the Waterfront*
- SLAC was not yet on the drawing board

1964

- Lyndon Johnson was President, Hubert Humphrey was VP and Edmund Brown was Governor of California
- Sheldon Glashow and James Bjorken coin the term ‘charm’ for the fourth quark
- Linac tunnel was completed
- *My Fair Lady* beat *Dr. Strangelove* for Best Picture
- Cassius Clay beat Sonny Liston for Heavyweight crown

1974
Recipient of 50 Year Award

- Richard Nixon was President until he resigned in August and was succeeded by VP Gerald Ford; Ronald Reagan was governor

What Was Happening 20, 30, 40, & 50 Years Ago?

- The November Revolution: discovery of the J/Psi particle by Burton Richter and Sam Ting

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1984

- Ronald Reagan was president and George H. W. Bush was VP; George Deukmajian was governor

- Some new youngster—Jonathan Dorfan, appointed to the SLAC Faculty

- Sid Drell named co-director of the Center for International Security & Arms Control & he was awarded a MacArthur Fellowship

- Best Picture was Amadeus

- The Niners beat Miami at Stanford in the Superbowl

- And don’t forget, very important—Prince Harry was born!

Policies and Procedures

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About TIP

- Staff/Contact

- Submission
April 26 Public Lecture: Smarter Drug Design

By Linda DuShane White & Heather Rock Woods

Clyde Smith (SSRL) will speak on ‘Smarter Drugs—How Protein Crystallography Revolutionizes Drug Design’ for the SLAC Public Lecture on Tuesday, April 26, at 7:30 p.m. in Panofsky Auditorium.

According to Smith, protein crystallography allows scientists to design drugs in a much more efficient way than the standard methods traditionally used by large drug companies, which can cost close to a billion dollars and take 10 to 15 years.

“A lot of the work can be compressed down,” Smith said. Protein crystallography enables researchers to learn the structure of molecules involved in disease and health. Seeing the loops, folds and placement of atoms in anything from a virus to a healthy cell membrane gives important information about how these things work—and how to encourage, sidestep or stop their functions. Drug design can be much faster when the relationship between structure and function tells you what area of a molecule to target.

Smith will use a timeline to illustrate the traditional methods of drug development and the new ways it can be done now. “It is very exciting work. There have been some failures, but many successes too.”

A new drug to combat the flu was developed in a year or so. Smith will tell us how. He will also highlight drugs developed to combat HIV, Tuberculosis, hypertension and Anthrax.

After two decades of research in New Zealand, Smith came to SSRL in late 2003 to do structural biology with SSRL’s high-intensity x-rays and is developing experiments for the x-ray free electron laser being built at SLAC.

Born and educated in New Zealand, his research studies have included how bacteria become resistant to drugs, bacterial cell wall biosynthesis, antibiotic resistance and viral DNA packaging. He won the Applied Biosystems/NZSBMB Award in 2003.
The public lecture is free and no reservations are necessary. A photo ID is required to enter the Lab.

For more information on the Public Lecture Series, see: http://www2.slac.stanford.edu/lectures/

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ABOUT TIP

- **Staff/Contact**
- **Submission**
WIS Presents

Manufacturing Great Science at SLAC

Karen Fant and Denise Larson

April 26, Noon
Panofsky Auditorium

Take a peek behind the scenes to learn about the who, what, where and how of SLAC's mechanical fabrication processes. Karen Fant (Department Head, MFD) and Denise Larsen (Machine Shop Supervisor) will be the presenters, and will give a show and tell on the components they make for the accelerator and physics experiments.

Please save your lunchtime on April 26 for a talk that will illuminate the actual fabrication of the equipment that makes SLAC a successful research lab.

Bring a lunch and bring a friend!
Stanford Community Day Features SLAC Einsteins

By Nina Adelman Stolar

Expounding on science and giving life to the Quantum Universe exhibit, scientists—appropriately outfitted in lab coats with white wig, mustache and tie—made a striking appearance on the lawn in front of Hoover Tower. A creative group, our good natured and enthusiastic colleagues generated excitement with magnets and simple machines.

The shift schedule rotation was fully covered by Mark Allen (EC), Nicolas Berger (EE), Eduardo do Couto e Silva (EK), Tetiana Hryn’ova (EE), Stephanie Majewski (BABAR), Michael Mazur (BABAR), Kevin Schlaufman (KIPAC), Abi Soffer (BABAR), Jorg Stelzer (EE) and Josh Thompson (EC).

Experiments and Demonstrations

Crowds thronged to the demonstration area where Keith Jobe (ILC) whipped up batches of liquid nitrogen ice cream throughout the day. This cool treat on a sunny day never fails to amaze and refresh onlookers. Experiments by Norman Graf (SLD) creatively used Earth’s atmosphere to demonstrate the crushing pressure under which we live, using anything on hand—from soda cans to bowling balls.

The arcade area was staffed by Tom Danis (Palo Alto), Surjeet Rajendran (Stanford Physics Dept.) and Nalini Sundaram (SSRL/LANL). A continuous stream of people crowded around to see how cosmic rays from our natural environment can be detected by a Cloud Chamber.

Special thanks go to Joe Perl (SCS) for the fully equipped, self contained Cloud Chamber, Tom Borden (REG) for procuring chamber material, Denise Larsen (MFD) for the lab coats to clothe our Einsteins, Diana Rogers (DO) for photographing the event and to Terry Anderson (TechPubs), who made the Quantum Universe exhibit dream come true.

Michael Mazur, in costume, engages the attention of visiting children.
Photo by Diana Rogers
Recipient of 50 Year Award

A Fun-Filled Evening

What Was Happening 20, 30, 40, & 50 Years Ago?

Events

- Public Lecture, April 26: Smarter Drug Design
- 'Manufacturing Great Science at SLAC', April 26th
- Stanford Community Day Features SLAC Einsteins
- DRAS Fundraising Efforts Continue
- Local Band Makes Good Music
- Electrical Safety Meeting Gathers at SLAC
- Mark Your Calendars for Juneteenth

Policies and Procedures

- Alpine Gate Hours Extended
- Mileage Rate Increased
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- Key Office Relocated to Safeguards & Security Office

About TIP

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DRAS Fundraising Efforts Continue

On the left, Kay Ganapathi (MFD) is shown handing over the check in the amount of $2,000 to Uma Jeyarasasingam, who is in charge of Chinmaya Mission, San Jose. These funds were collected from the SLAC community for the Tamil Nadu Relief Effort in India, and will go towards rebuilding schools in the stricken area.

Photo courtesy of Kay Ganapathi
Recipient of 50 Year Award

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DRAS fundraising efforts continued with a lunch featuring Indian food held April 8 in the Panofsky Auditorium Breezeway. The food was excellent and the entertainment (a dance performance by Archana and Viji Ganapathi, trained in the traditional Kalakshetra style at the Kalanjali Dance School in Berkeley) was truly outstanding. We raised over $500 at the luncheon! For updated fund raising events and information about DRAS, see: http://www.draslac.org/

Photo courtesy of Teresa Troxel
Local Band Makes Good Music

By Nina Adelman Stolar

A local bluegrass western swing and country music band, Wild Oats n’ Honey, features some familiar faces. Soundman and occasional bass player Willy Langeveld (SCS) and Ralph Nelson (formerly RP) on bass joined up with some other folks and the result is some darn good music.

Their new CD entitled Live at Sam’s was released in January. It is an excellent collection of bluegrass and western swing tunes that was performed live at Sam’s Barbeque in San Jose. A mixture of traditional and original tunes, the album features three guests —two vocalists and the proprietor, Sam himself, in an instrumental on the mandolin.

First time producer Langeveld mixed, recorded and mastered the album and did most of the artwork. When asked about the experience, he said, “It’s a lot of work and the pay is really lousy. But it was a lot of fun!”

Their next gig will be in late April for Bebo White’s (SCS) retirement dinner. They will be joined by The Tarantulas Jug Band in which White plays banjo, washboard and other miscellaneous jug band paraphernalia.

For more information, see: http://www.wildoatsnhoney.com

Wild Oats n’ Honey
Photo courtesy of Willie Langeveld
Electrical Safety Meeting Gathers at SLAC

Participants of the 2nd Annual Research & Development (R&D) Electrical Safety Meeting and Workshop held at SLAC March 28-31. The purpose of the meeting and workshop was to summarize electrical safety programs at R&D facilities and to develop uniform approaches to controlling the unique electrical hazards encountered in the R&D environment. Workshop organizers were Perry Anthony (DO), Lloyd Gordon (LANL) and Terry Fogle (LANL), shown front row, center.

For more information, see: http://www.lanl.gov/orgs/hsr/electrical_safety/

Photo by Diana Rogers
Mark Your Calendars for

Juneteenth

Friday, June 17th
3 - 6 pm

Watch for more information in future editions of TIP!

http://www2.slac.stanford.edu/tip/2005/apr15/juneteenth.htm
Alpine Gate Hours Extended

Effective March 30, the morning hours for entrance and exit at the Alpine Gate have been extended to 9:30 AM.

The hours the gate is open for the convenience of SLAC employees and users commuting to and from SLAC are as follows:

**Monday through Friday** except weekends, holidays, and downtimes.

**Morning:** 5:45 a.m. to 9:30 a.m.

**Afternoon:** 2:45 p.m. to 6:00 p.m.

To use the Alpine Gate, you will need to show a valid SLAC Photo I.D. badge for everyone in the vehicle.

Those with a red Temporary Badge, a SLAC Photo I.D. Badge with expired training, or other forms of I.D. including the Stanford Staff/Faculty I.D. will need to use the Main Gate on Sand Hill Road.

For more information on site entry and procedures, contact Security, Ext. 2551, or see: [https://www-internal.slac.stanford.edu/ssec/Security/Gates.html](https://www-internal.slac.stanford.edu/ssec/Security/Gates.html)
Mileage Rate Increased

Effective immediately, the standard rate per mile for official travel by privately owned automobile (POV) is 40.5¢ per mile. This applies to travel beginning April 7 or after. Travel beginning before April 7 will be reimbursed at the previous rate of 37.5¢ per mile, even if reimbursement occurs after April 7.

This new rate has been updated on the SLAC Travel Reimbursement website at: http://www-group.slac.stanford.edu/travel/index.htm

Contact: Alison Twombly, Ext. 4346, twombly@slac.stanford.edu
Fueling Your SLAC Vehicles

By Pete Budrunus

An onsite facility is provided for fueling the eight remaining DOE (owned) light duty vehicles. These vehicles are identified by 'E' license plates. Forklifts and scooters also fall into this category and are fueled onsite. Both gasoline and diesel fuels are available at the fuel station during hours of operation, which are 7 a.m. through 3 p.m., Monday through Friday (except holidays). The fueling station is adjacent to Bldg. 035 (west side), in the parking lot between Bldg. 035 and Bldg. 081.

To use this system, you must first obtain a SLAC Fuel Card for your vehicle from the Transportation Department. This card identifies your vehicle and authorizes use of the system each time you obtain fuel.

GSA Vehicles Must be Fueled Offsite

While attempts are being made to provide onsite fueling for GSA vehicles, as of this writing, GSA (leased) vehicles must use offsite commercial stations for fueling, and you must use your GSA Voyager credit card for fuel transactions.

Receipts for all transactions should be turned in to the Transportation Department for reconciliation. A reminder—use only regular unleaded gasoline in GSA vehicles. Under our contract we are not permitted to use higher grades of gasoline.

If an emergency situation should arise and fuel must be purchased without using the Voyager card, you can be reimbursed by submitting a SLAC petty cash request. You must attach the receipt to the petty cash request and obtain the signature of the Transportation Manager for reimbursement. Contact the Transportation Department for details.

While most stations will accept the Voyager card, Arco stations do not honor the Voyager card. Please note that the Sharon Heights Shell station cannot be used for any GSA transaction. You should use a vendor that accepts the Voyager card for all transactions related to fuel or repair of your vehicle.

The following is a list of approved fuel stations in close proximity to SLAC:

Woodside Chevron
2950 Woodside Road
West of Highway 280
Recipient of 50 Year Award

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**POLICIES AND PROCEDURES**

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- **Key Office Relocated to Safeguards & Security Office**

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- **Staff/Contact**
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Woodside

**Portola Valley Shell**
Alpine Rd at La Cuesta Drive
West of Highway 280
Portola Valley

**Chevron**
104 Alpine Rd
Redwood City

**Woodside Shell**
1667 Woodside Road
Redwood City

**Stanford Campus Texaco**
715 Serra Street
Stanford

**Chevron Station** (formerly ARCO)
3600 Alameda De Las Pulgas, at Avy
Menlo Park

Don’t forget—buckle up, it’s the law (and SLAC policy as well).

For complete information on vehicles, see:

Key Office Relocated to Safeguards & Security Office

The SLAC key office has moved from Building 241, room 1 to the Security Building 207 room B. The Safeguards & Security Office (Building 207) is located off the Campus Loop Rd. (across from Cooling Tower 101), at the intersection going toward Sector 30 Gate.

Call extension 4501 or 3646 for key hours. Locksmith requests will continue to go through the CEF/SEM service request desk—extension 8901 or by the on-line service request located at: https://www-internal.slac.stanford.edu/sem/nonsafety/default.htm
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