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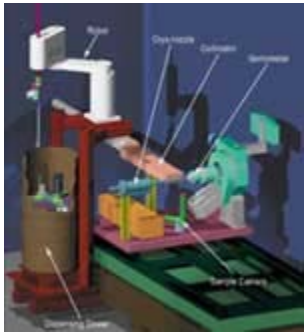
SSRL's New Robotic System Helps Stanford Researchers Reveal Cells' Inner Workings

By Mitzi Baker and Heather Rock Woods



In the world of molecules, DNA tends to get top billing at the expense of RNA, which is critical for turning DNA's genetic blueprint into working proteins. Researchers at the Stanford University School of Medicine have published significant insights into how the RNA molecule completes this task in two back-to-back papers in the February 13 issue of Science Magazine.

See whole story...

PEP-II Sets New Luminosity Record

By Kate Metropolis

On January 26, PEP-II delivered and BABAR recorded the highest number of electron-positron collisions in a 24-hour period to date. Both the accelerator and the detector exceeded 500 inverse picobarns that day, approximately 500,000 events in which a B meson and an anti-B meson were produced. This number is more than three times higher than PEP-II was designed to deliver.

See whole story...

Helen Quinn is New APS President

By Davide Castelvecchi

This year Helen Quinn (THP) may end up earning plenty of frequent flyer miles to Washington, D.C.—she is the new president of the American Physical Society (APS), one of the world's most prestigious academic societies. "Quinn's distinction is a cause of pride for the whole Stanford community," Director Jonathan Dorfan said.

See whole story...

SPEAR3 Movie to be Shown Again

By Davide Castelvecchi

At the hugely successful dedication of the new SPEAR3 light source on January 29, the 850-strong audience had a chance to hear about the history of SLAC's synchrotron from the voices of its protagonists, thanks to the screening of an in-house documentary production.

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Dmitry Teytelman Honored for Outstanding Thesis in Beam Physics

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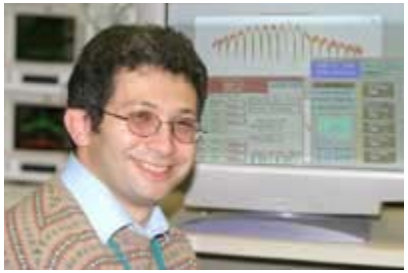

For the development of new techniques to control particle beams, Dmitry Teytelman (ARDA) will receive the 2004 APS Outstanding Doctoral Thesis Research in Beam Physics Award.

See whole story...

The Katherine E. Pope Fellowship

By Lee Lyon

SLAC is pleased to announce the availability of the third Katherine E. Pope Summer Fellowship.

The Fellowship was established to remember the life of Katherine E. Pope, an undergraduate student at Smith College in Massachusetts, who was working at SLAC under the direction of her physics advisor. Pope was tragically killed in July 2001, riding a bicycle on her way to SLAC.

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

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Helen Quinn (Photo by Diana Rogers)

APS members, over 40,000 in number, elect the society's leadership to four-year appointments, which include spending a year each as Vice President, President Elect, President and Past President. Quinn is only the fourth woman to hold the post of APS president in the society's 104 years of history.

While she still wants to press ahead with her work on the theory aspects of the *B* Factory here at SLAC, Quinn will take an active role in steering the APS.

"I want the society to look further ahead," she says, especially in its effort to reach out to policy makers. "The way the world is going you need a more consistent, coherent presence in Washington."

Among the issues of concern for the Australian-born, Stanford-educated president of the APS is that of visas. New regulations enacted in the post-9/11 climate have made it harder for international students and scholars to come to study, work or just attend conferences in the U.S. "There have been cases," Quinn says, "of international meetings where some people haven't been able to attend." She thinks the APS should work with the National Academy of Sciences (NAS) and other scientific societies to find ways to help the State Department make the necessary security checks as efficient and as applicant-friendly as possible.

"We can set up a system to share information," she says, "to let consular offices know when a visa applicant has recognition in the science community as a colleague, such as a collaboration member."

"Science happens to be a particularly international community," Quinn added. "For American science to remain at the forefront it needs to stay well connected in the international science community."

Quinn, who was elected to the NAS last year, has been part of the SLAC staff since 1978. She was a recipient of the 2000 Dirac Medal 'for pioneering contributions to the quest for a unified theory of quarks and leptons

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and of the strong, weak, and electromagnetic interactions.' She is the leader of SLAC's Education Outreach, and was the founding president of the non-profit Contemporary Physics Education Project, which produces materials for high school and college science teachers.

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Although the total is large, BABAR physicists are interested in some very rare events, and the number of those collected on the record-setting day could be small enough to be counted on the fingers of a single graduate student. "That's why we have to work so hard," said accelerator physicist Mike Sullivan.

The BABAR collaboration sent congratulatory pizzas to the accelerator control room.

The next pizza challenge, according to Bill Wisniewski, BABAR technical coordinator, is to achieve 500 inverse picobarns a day for five days in a row.

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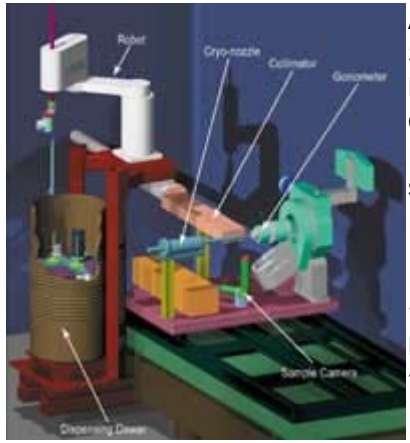

A schematic of SSRL's robotic screening system which finds the best crystals to study.
(Image Courtesy of Roger Kornberg)

All the genetic information contained in DNA is silent, said Roger Kornberg, Stanford professor of medicine and structural biology. What gives it a voice is RNA polymerase, the enzyme that copies DNA into RNA through a process called transcription. Along with more than a dozen helper molecules, RNA polymerase determines which proteins are produced within a cell. But before scientists can understand the transcription process, they must first unveil the inner structure of RNA polymerase, which is where SSRL comes in.

Kornberg's lab has been studying RNA and the enzyme that makes it for more than 20 years. Past studies from the lab have shown that the machinery of the RNA polymerase system is in three layers. His group published groundbreaking findings in 2001 outlining the structure of the innermost layer. The recently published papers focus on the middle layer, which contains many of the helper molecules.

To see the structure of the protein layers, the group passed SSRL's extremely bright x-rays through a crystallized version of the proteins. The crystal scatters the x-rays, generating a distinctive diffraction pattern that reveals the sample's three-dimensional atomic structure in high resolution.

To find good diffracting crystals out of the hundreds made, the researchers used a new automatic robotic screening system developed at SSRL with grants from the National Institutes of Health. The automated screening system stores the tiny frozen crystals on nylon loops at the end of metal pins. A robotic arm retrieves each pin and aligns the crystal in the path of the X-ray beam. The robot can automatically test 300 samples without the need for researchers to manually transfer each sample as was done in the past. The new robots are becoming operational on all of SSRL's crystallography beam lines.

"It saves a lot of time while optimizing the quality of the data," said SSRL scientist Mike Soltis, head of the

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macromolecular crystallography group. "With the new system, the Kornberg group screened 130 crystals in seven hours without losing any. Two weeks earlier, they had manually mounted 100 crystals in 24 hours, losing a few crystals and much sleep in the process."

At the level of detail the researchers obtained, some intriguing structures came to light, offering the first real understanding of the defining events of transcription. They saw a docking site that might reveal the starting point of transcription, a spot where the RNA polymerase is correctly situated on a gene. They also saw something completely unexpected: a "finger" of the helper molecule that pokes into the polymerase's active center. The researchers speculate that the poking action may help slow down the transcription process so that the strands of DNA and newly made RNA can separate properly.

"This turned out to be quite interesting. No one had even speculated about it before," said David Bushnell, a research associate and first author of one of the papers. "We think the protrusion reaching into the enzyme makes sense of a lot of genetic and biochemical data that people were scratching their heads over."

Catching the Polymerase in Action

The second paper describes how the team caught a snapshot of the polymerase in action, something that hadn't been done before. Kenneth Westover, an MD/PhD student and first author of the second paper, developed a method in which the newly made RNA could be visualized separating from the DNA.

How the strands of RNA and DNA are pushed apart has a simple physical explanation: the RNA polymerase inserts itself as a wedge between the two, with the RNA trailing out an opening in the polymerase. That same opening is the one that the protein finger dips into.

"These two papers are both quite astonishing in what they reveal," Kornberg said.

Mitzi Baker is a science writer at Stanford's School of Medicine.

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Dmitry Teytelman Honored for Outstanding Thesis in Beam Physics

By Kate Metropolis

For the development of new techniques to control particle beams, Dmitry Teytelman (ARDA) will receive the 2004 APS Outstanding Doctoral Thesis Research in Beam Physics Award. Teytelman did his research at SLAC while a graduate student in Stanford's Electrical Engineering Department and is now an engineer in ARDA.

Dmitry Teytelman is the sixth SLAC graduate student to win the APS's award since it was first bestowed in 1991. *(Photo by Diana Rogers)*

Scientists who use electron storage rings have insatiable appetites for higher beam current, which translates into more data and brighter synchrotron light sources.

But you can't just keep packing more particles into a ring. Put bunches of particles close enough, and they become electromagnetically coupled. Think of the bunches as rubber balls connected by springs—if one rubber ball hits a bump, the springs transmit the shock to all the other balls. In a high-current ring, the moving particles excite electromagnetic fields, which in turn bump the beam and make it so unstable that it is almost instantaneously lost.

Teytelman worked out new techniques that sample the motion of bunches in the ring, compute the best way to damp the beam's longitudinal deviation from the desired path and generate signals to correct the beam. The task requires parallel processing of billions of operations per second.

"These particles can be moving at very nearly the speed of light, in bunches just nanoseconds apart," says John Fox, Teytelman's advisor. "Dmitry found some very, very clever ways to understand what beams are doing and respond."

An International Solution

Because many labs would be facing the same challenge, Fox helped form a collaboration to address it among SLAC, LBL, and LNF, the Italian lab that is home to DAFNE. "Labs usually do very one-of-a-kind custom things," Fox said. "We did a very general solution and all the labs can directly share the operating experience. It's been a great thing to do."

Teytelman first worked on these longitudinal multibunch feedback systems in the Advanced Light Source (ALS) at LBL. From this initial testbed, the SLAC/LBL/LNF group went on to construct instability control

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systems for the PEP-II *B* factory at SLAC; DAFNE, the phi-meson factory in Italy; the Pohang Light Source in Korea; and the BESSY II light source in Germany. Teytelman commissioned all of these systems, each of which uses his control techniques and software.

"Twelve or thirteen years ago, people recognized that beam instability in a high-current ring would be a serious problem," said John Byrd, leader of the Beam Electrodynamics Group at LBL. "Now, it's a solved problem, thanks to the approach championed by John Fox and in large part designed and implemented by Dmitry when he was a graduate student."

"Solving the instability problem is critical for this kind of machine," said Greg Stover, ALS project electronics engineer. "Dmitry's undaunted efforts and creative intelligence were the sine qua non of the commissioning process; it just wouldn't have happened without him."

"Dmitry Teytelman is internationally recognized as one of the top experts in the field," said Mario Serio, leader of DAFNE's beam diagnostics and controls group. "I consider his work a major step toward the comprehension and control of high-current multibunch dynamics in storage rings present and future. The whole accelerator community has gained from his activities."

From Minsk to SLAC, with a Pause in Brooklyn

Teytelman's career path had a few perturbations of its own. The son of two mathematicians, he received an electronics kit for his tenth birthday with which he constructed such devices as a radio signal generator and a moisture detector. "I'd always been interested in math and physics; that got me interested in electronics," he said.

After completing high school in his home town of Minsk, Teytelman entered the prestigious Moscow Institute of Physics and Technology. A year later, in 1990, he experienced a major longitudinal shift: he immigrated with his family to Brooklyn.

Teytelman presented himself at the admissions office of Columbia University, where he was informed that March was too late to apply for admission the next fall, and that his transcript from Moscow did not carry the same weight here as in the former Soviet Union. Demoralized, he went to work as a technician in a TV/VCR repair shop.

Through his younger brother, Teytelman met a professor from the City University of New York, Staten Island, who generated a well-calculated correction signal: "Come down tomorrow to register. These are the courses you'll take your first semester." Three years later, Teytelman had completed two B.S. degrees, in electrical engineering and in physics.

When Teytelman began graduate studies at Stanford, he was interested in "the pure electronics" of very fast systems. But, as the path of an electron in a particle beam is influenced by the electrons ahead of it, his interest began to shi. as he worked at SLAC with accelerator physicists.

"At SLAC, I came into contact with top-notch people in accelerator physics. Working alongside them was a

great learning experience," Teytelman said.

"His thesis wasn't pure theory, and it wasn't pure technology," said Fox. "It was a beautiful combination that required deep mastery of both the beam dynamics and the technology of digital signal processing."

The annual award includes an honorarium of $2,500, a certificate and an invitation to present the work at the Division of Physics of Beams annual meeting.

SLAC Students Dominate Awards

In addition to Teytelman, five of the other thirteen recipients did their graduate research at SLAC: David Pritzkau, a student of Bob Siemann (2003); Boris Podobedov, a student of Bob Siemann (2002); Shyam Prabhakar, a student of John Fox (2001); Zhirong Huang, a student of Ron Ruth (1999); and Tor Raubenheimer, a student of Ewan Paterson (1994). Any doctoral student in the world is eligible for the APS Beam Physics dissertation award, established in 1990.

John Fox, advisor to two of the six SLAC students whose dissertations have been recognized by the Division of Physics of Beams award, commented on the significance of the awards. They reflect, he said, both "the high quality of the graduate students we can attract from Stanford," and "the caliber of the projects SLAC can offer those students."

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Those Eureka! Moments at the *B* Factory

By Davide Castelvecchi

Claiming new discoveries about elementary particles requires a great deal of care.

In that tiny, bizarre world, the laws of physics can never tell you exactly what will happen—but they usually predict with great precision how likely it is that things will go a certain way. Though very rare, freak accidents, such as particles appearing out of nowhere, are possible.

In a typical BABAR measurement, researchers look for very uncommon patterns of particle decay. At the forefront of research, it is the rarest events that can teach us new physics. Results come from months of painstaking data taking and analysis, rather than from a single 'Eureka!' moment. "It's usually not the case that you look at one event and say 'Wow!'" said Jeffrey Richman, BABAR's Physics Analysis Coordinator.

Rare particle decays can be compared to 'special' coins that don't land on tails or heads with equal probability. If you had a bag with a million normal coins in it, and only one special coin—one that, say, always lands on tails —how would you go about finding the special coin?

Say you pick a random coin out of the bag. If you toss it once, and it lands on tails, that doesn't say much, does it? What if it lands on tails twice in a row? A regular coin has a 25% chance of doing that, so it's not too unusual. Such strings of deceptively favorable events are called false positives, or, as particle physicists would say, 'background'.

Now say you are a skeptic, and you toss your coin ten times—tails every time. A little math shows that there was less than one chance in a thousand for a regular coin to do that. Sounds more promising. But is ten flips enough? At that point, if you stop looking you are vulnerable to things you don't anticipate as background.

To prevent themselves from jumping to conclusions too early, physicists often employ a procedure called blind analysis. You decide ahead of time how many coins you're going to test—say, a million—and how many times you want to toss each one—say 100. Even if a coin's first 50 tosses give all tails, you force yourself to keep on tossing until the end. After weeks and weeks of tossing coins and recording the results, you finally look at your records, and see something like this: most coins behaved roughly like normal coins, some landed more often on tails than heads, some the other way around, but just one coin landed on tails 99 times.

For a normal coin, that would happen about once in 10 billion billion billion times, so a false positive is extremely unlikely. On the other hand, you should expect even the special coin to land on heads once in a while. Because of quantum accidents, there's no such thing as absolute certainty.

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For each BABAR measurement, the moment of truth is scheduled to come at the end of the blind analysis procedure, in what people often call the 'unblinding party.' Unblinding parties usually involve a small group of graduate students and postdocs, staying up late looking at someone's laptop in the Research Office Building kitchen. "If there's a 'Eureka!' moment, that's it." Richman said. "You look at your final output file and it could be: 'Bang! There is a big signal!'

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Tracy Usher, Laser Sailor

By Linda DuShane White

Tracy Usher (EA) has the best of both worlds. He loves being at SLAC, where he is currently working on GLAST. And he loves sailing his Laser, a 14-foot fiberglass open single-handed dinghy, one of the 9 sailing classes in the Olympics.

The Laser is a relatively cheap boat and it's in a very strict one-design class. That means that you can go anywhere in the world and rent one identical to the one you have at home.

Tracy Usher sails his 14-foot Laser in the San Francisco Bay. *(Photo courtesy of Tracy Usher)*

The world of small boat sailing and racing is quite different from that of large boats.

"[In a laser] this is the sailor against the sailor, whereas in larger boats it's boat against boat," said Usher. "At the Olympic level (which I'm nowhere near) the differences can be measured in inches—i.e., if a guy gets an advantage of just a few inches it can put him into the lead."

Usher races locally in the SF Bay, and up and down the West Coast, as well as nationally and internationally.

Usher got his start sailing as a child growing up in Monterey. "My Mom wanted to learn how to sail so I went along as a really little kid. It was in high school that I actually started to race. I had a Laser then. In college I spent a lot of time sailing in larger boats. That was fun, because in larger boats a lot of the races are long distance, so I participated in races from Southern California to Mexico and to Hawaii. Around 1997, a few years after coming to SLAC and moving back to the Bay Area, I got involved in sailing Lasers again. That's pretty much what I do now."

Usher concentrates on racing at the Master's level, for age 35 and over. "I've been to the Open World's once. Since you are sailing against sailors training full time for the Olympics, it's nearly impossible to qualify. Once there the level of competition is quite high. Out of 160 entries I was 110, and I was really proud of that. Now I try to stick to my age group!

"Sailing is really an interesting game, you're trying hard to outguess everyone else. In the end, luck plays a big part but you want to make sure that when luck strikes you're in the right place. There's a lot to be said for experience.

"With this kind of racing everything happens much faster. You're so close to the water it's harder to see. You're not really going very fast, maybe 4 or 5 miles an hour, the maximum speed is about 12 mph but when you're that close to the water it feels like you're going very fast."

Usher is the Vice Chairman of the International Laser Class Association, North American Region and he also sits on the World Council of the International Laser Association.

Usher's enthusiasm for both his sport and for this part of the world is contagious. "I have the best of everything. San

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Francisco is one of the best places in the world for sailing because of the strong winds, the strong tides. If you can sail in San Francisco you can sail anywhere."

Interested in learning more about Laser sailing? Usher advises, "A good way to get introduced is to go to Shoreline Lake in Mountain View on Wednesday nights during the Spring and Summer. The races are really short, 10 or 15 minutes, so you don't get discouraged."

For more information see: http://www-user.slac.stanford.edu/usher/index.html

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SLAC Announces Public Lectures

By Emily Ball

Ever have trouble describing what you do at SLAC to your family and friends? Let the SLAC Public Lecture Series help!

This recurring lecture program, aimed at the local non-scientific community, will kick off with "All About SLAC: What Goes on in the World's Longest Building" given by SLAC Communications Director Neil Calder, on February 24 at 7:30 p.m.

Future talks will be given by Herman Winick (SSRL), Steve Sekula (BABAR), Graham George (SSRL), and Joachim Stöhr (KIPAC). Topics will range from Ma.er and Anti-Matter to Particle Astrophysics to Synchrotron Radiation, and all will be presented in a fun, non-technical format to make SLAC science concepts accessible to local residents from all walks of life.

The lecture series will occur the last Tuesday of every other month at 7: 30 p.m. These one-hour talks will be followed by refreshments, and attendees can chat with scientists who will be on hand to answer questions. Invite your family and friends! See more information at: http://www.slac.stanford.edu/lectures

Want to help promote the SLAC Public Lecture Series? E-mail emily.ball@slac.stanford.edu if you want to put up posters in your community to promote the upcoming lecture.

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SPEAR3 Movie to be Shown Again

By Davide Castelvecchi

At the hugely successful dedication of the new SPEAR3 light source on January 29, the 850-strong audience had a chance to hear about the history of SLAC's synchrotron from the voices of its protagonists, thanks to the screening of an in-house documentary production.

The snappy 25-minute movie, produced by Terry Anderson and Thomas "Chip" Dalby of the Scientific Arts department, will be shown again at noon and at 12:30 p.m. on Thursday, March 4 in the Panofsky Auditorium.

This is an opportunity not to be missed for those who couldn't be at the SPEAR3 dedication.

The movie features interviews with a dozen physicists and engineers who were involved with SPEAR from the early 1960's to the present.

It also shows images of the SPEAR3 construction site, with a rapid succession of still images compressing seven months of work in progress into mere minutes of video. The shots came from a remotely-operated web cam installed by Dalby in the SPEAR3 tunnel. The web cam collected more than 100,000 shots.

Footage from two additional cameras was provided by the construction team.

"The main thing was to get people to talk about what excited them about SPEAR3," said Anderson, who was conducting the interviews while Dalby was shooting. To make people feel comfortable in front of the camera, Anderson would say: "Just pretend that you and I are sitting in a bar over a beer, and you are telling me about SPEAR3." Dalby would often jump in, asking "Give me five adjectives that would describe this project."

Dalby took five hours of interviews and edited them into a coherent narrative. "That's what Chip was good at," Anderson said, "keeping the story flowing."

"With some interviews," Dalby said, "we went through one hour of footage to get the one minute we needed to use."

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San Francisquito Creek: Issues and Concerns

By Judy Fulton

San Francisquito Creek, flowing right by SLAC's back door, is both a natural treasure and a vital resource to our community, and we all have a stake in protecting it. But the issues and concerns related to its protection are inter-connected and overlapping, and people do not always agree.

The different ways that different people look at the problems is, in fact, a problem in itself. To solve this problem the San Francisquito Creek Watershed Council was established to build consensus about the creek and its protection. (See San Francisquito Creek article in TIP, November 21, 2003, http://www2.slac.stanford.edu/tip/2003/nov21/creek.htm).

The San Francisquito creek runs south of SLAC.

The Council has taken a multi-pronged approach and has grouped creek protection issues into the following categories:

• Natural resources

• Flood and erosion control

• Land use

• Pollution prevention

• Social issues

• Public education and involvement

Specific Issues

• The future of Searsville Dam. It is filling up with sediment and is a barrier to the upper tributaries which are spawning grounds for steelhead trout. Decision makers need to decide if it should be removed or modified in some way. See: http://facilities.stanford.edu/searsville/

• Total maximum daily loads (TMDLs) set limits on how much of a given substance can flow into a water body on any day. As TMDL limits are adopted for sedimentation/siltation and diazinon in the creek, the actual levels of these substances will become an even greater source of concern. See page 23 at: http://www.swrcb.ca.gov/tmdl/docs/2002reg2303dlist.pdf

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• Flood prevention associated with sediment management. The 1998 flood in East Palo Alto was a wake-up call. Sediment build-up reduces the ability of the creek to carry water, and its capacity for draining floodwaters generated in heavy storms.

• Information gathering and decision making. Several groups are focused on how to get science-based information to decision makers and how to obtain that information in an effort to build consensus and improve decisions. See: http://wgsc.wr.usgs.gov/sfcreek/ and http://www.acterra.org/watershed/projects/monitoring.html

As seen above, San Francisquito Creek has attracted many to its cause, and the systems that are evolving for its protection will become models nation-wide. SLAC has a part to play, too. The next article in this series will look specifically at what SLAC does to protect the creek and how each of us can make a difference.

Please contact Judy Fulton, ES&H Environmental Protection, (Ext. 4538) with any questions or comments.

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

Last update Tuesday February 17, 2004 by Emily Ball

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The Katherine E. Pope Fellowship

By Lee Lyon

SLAC is pleased to announce the availability of the third Katherine E. Pope Summer Fellowship.

The Fellowship was established to remember the life of Katherine E. Pope, an undergraduate student at Smith College in Massachusetts, who was working at SLAC under the direction of her physics advisor. Pope was tragically killed in July 2001, riding a bicycle on her way to SLAC.

Pope was a young renaissance woman with a fascination not only for physics but also for history, art and animals. Her warm personality and sense of humor made her an excellent colleague. Even as an undergraduate, she had earned her place on the publication list for one of SLAC's experiments.

This fellowship honors Katherine Pope and encourages other undergraduates with an interest in science, especially physics, to pursue their academic interest at SLAC. The Pope Summer Fellowship will provide round trip transportation between the recipient's home and SLAC, a $500 per week stipend, and lodging for the time of the appointment.

Applications must be postmarked no later than March 14. The application form can be found at: http://www-group.slac.stanford.edu/hr/forms/summerfellowshipapp.html For additional information, contact Lee Lyon, Ext. 2283, lyon@slac.stanford.edu.

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MILESTONES

Service Awards

5 Years

Avelar, Renato (ESRD), 2/16

10 Years

Medina, Pedro (SEM) , 2/16

Haulman, Natasha (SLD) , 2/16

15 Years

Bigornia, Jovencio (MD), 2/16

Stiles, Paul (REG) , 2/16

Wethington, Pauline (PAO), 2/16

Muller, David (EB), 2/01

25 Years

Smith, Patrick (ACC), 2/26

35 Years

Underwood, Kenneth (ESD), 2/17

Retired

Seymour, Angie (ARDB), 1/31

To submit a Milestone, see:

http://www.slac.stanford.edu/pubs/tip/milestoneindex.html

See Awards and Honors at http://www.slac.stanford.edu/slac/award

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Stores Items May Be Deleted

After looking at the overall usage rates of certain Stores items, SLAC Stores plans to eliminate a number of items from its inventory. Many commercial vendors are now able to deliver commodities very quickly ("just-in-time" delivery) and, in many cases, this is a much more efficient and economical way to get what SLAC needs to do the job.

Items Scheduled for Deletion

• General and Metal Store Items that have not been issued since April 2002.

• Spares items that have been idle in Stores for more than three years.

A complete list of items scheduled for deletion can be found on-line at: http://www-group.slac.stanford.edu/pur/inactivestoresitems.xls. If you prefer, a hard copy of the listing is also available at the Stores Department counter.

Is There an Item on the Deletion List You'd Like Retained?

SLAC Stores will need a justification to continue stocking any of the planned deletion items. If you still need Stores to maintain these items in stock, please e-mail your justification to: Tom Murphy at smurf@slac.stanford.edu no later than 1:00 p.m., Friday, February 27.

Contact Tom Murphy, Purchasing Department, Ext. 3582 or smurf@slac.stanford.edu.

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SLAC Web Search Improved!

By Beck Reitmeyer

Searchers rejoice!

The first improvements in the online search of the SLAC Web since 1998 are due to an upgrade implemented by the Search Team—Ruth McDunn (TIS), Dennis Wisinski (SCS), Bebo White (SCS), and Billie Khan (TIS).

Rather than continue to piggyback on the Stanford University search tool, the Search Team, with input from Ray Cowan (SLD), Douglas Smith (SCS), Travis Brooks (TIS), and Louise Addis (TIS), plus Kathy Bellevin (COM), Kim Sutton (TIS), Marshall Thompson (BSD), and Paul Bloom (KM), put together a list of requirements for an ideal search tool.

They then ranked the requirements from 'must-have' to 'would-be-nice'. A comparison of these requirements, with features offered by major search tool vendors, led the team to establish SLAC's own contract with Verity to upgrade the existing tool to the latest version of Ultraseek, the new product name for Inktomi. "We leveraged our years of experience by upgrading our existing product as opposed to starting over with another tool," said McDunn.

The upgraded search tool offers a number of advantages for SLAC. Of immediate importance is the indexing of the restricted collections on the www-internal server and in the slaconly directories on UNIX. Detailed reporting allows the team, among other things, to fine-tune the tool to provide Quick Links for frequently searched words, such as 'cafeteria' (by far the most popular search term).

By keeping track of what users click through on the results page, it is possible to determine what information is and isn't useful, and where information needs to be added. Other features directly evident to searchers are the spell checker feature that shows alternate spellings for search terms and the highlight feature that shows the search terms in the HTML and PDF documents that were found. "This tool offers more than simple searching," White said.

Regardless of the search tool or features used, searches of the SLAC Web are more productive when you enter effective queries and create more detailed Web pages. If you're having difficulty finding what you need, read the Search Tips (http://www.slac.stanford.edu/search/index.html#techniques), which are being updated regularly to help you fine-tune your search results.

If you are a content creator for the SLAC Web, be sure to properly tag metadata and title your pages appropriately. McDunn will offer training sessions both for searchers on how to optimize your searches, and for Web authors on how to design and tag a Web page so that searchers can find the information they need.

"We are taking searching seriously," White said, about long-term plans to improve searching the SLAC Web. Now that the initial upgrade is complete, the team is focusing on other areas where improvements can be made and encourages all users to send feedback and suggestions at http://www-group.slac.stanford.edu/wim/search.

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SPEAR3 Film

Thursday, March 4

Two showings: 12:00 and 12:30 p.m.

Panofsky Auditorium

Bring your lunch and enjoy seeing firsthand interviews and assembly of the SPEAR3 accelerator.

SEE SPEAR3 Movie to be Shown Again article to learn more!

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WIS Seminar

"Why do I need a Body Résumé?"

2/24/04 at Noon

Yellow Room

For more information, see http://www-project.slac.stanford.edu/wis/pages/nextseminar.htm

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