

LifeLink

A link between donors, volunteers, staff & friends of the Stanford Blood Center

Stanford Medical School Blood Center on Hillview

By Vince Yalon, Administrator



3373 Hillview Avenue, Palo Alto

AN ARCHITECTURAL GROUP has been selected and the development of plans is underway to relocate the Blood Center Administration and Laboratories to 3373 Hillview Avenue in Palo Alto. This building, just outside of the Veterans Administration Hospital campus, was previously occupied by Reuters News Service. 3373 Hillview is a two-story structure accounting for approximately 50,000 gross square feet of space. It is a relatively new (1999) building that has the wide-open architecture that will enable us to add an additional donor room and construct laboratories designed to optimize blood operations. We will also be enhancing our

immunology research labs, preparing the way for new technology and new directions.

Our expectation is that the move will take place in the fall of 2005. We will maintain a donor collection facility at 780 Welch Road for service to our Medical Center patients and families as well as our regular donors for whom the campus site may be more convenient. Our Mountain View donor site will continue to serve our more southerly donors.

We will update you on things as plans continue to develop. Thanks for your commitment to our patients!



Dr. Susan Gale

Testing, Testing and More Testing!

A message from the
Director of Clinical Operations

THOSE OF YOU DONATING at our new combined whole blood and automated blood collection facility at 780 Welch Road might be wondering what happened to the old donor room at 800 Welch. That space is now occupied by our donor testing laboratory, which was expanded to accommodate new testing equipment. We have implemented several new tests in our quest to maximize the safety of blood transfusion for the patients we serve.

Here are some highlights of the new tests:



Bacterial Screen for Platelet Products

Blood products may, rarely, contain small numbers of bacteria. The source of these bacteria is primarily donor skin, although bacteria can also be in a donor's blood stream if the donor has an infection anywhere in his/her body at the time of donation. To minimize the likelihood that our blood components will contain bacteria, we question donors carefully for evidence of current infections, and we clean donors' skin with Food and Drug Administration

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What's Going On With Lean?

By Jean Stanley, Director of Operations

THE LAST QUARTER OF 2003 was a challenging time for the Blood Center. We were facing the implementation of bacterial detection for platelet products, the addition of another hepatitis assay, and the need to create a separate product quality control (QC) laboratory. Our hospital customers were also requesting that we begin to provide additional services to assist them in meeting special patient needs. It was clear to us that we needed to plan carefully for both current and future growth in order to continue to meet the needs of the patients, our donors, hospital customers and employees.

As we began to plan the new layout for the testing laboratory it became clear that we needed help. After much discussion and investigation we decided to contract with a consultant to train us in Lean Manufacturing principles and guide us through implementation of Lean Manufacturing in our laboratory operations. What is Lean Manufacturing? The primary

premise of Lean Manufacturing is to recognize and remove waste in order to improve operations.

We identified our internal "Lean Team" and began by videotaping the major work processes in the Components and Testing laboratories and Distribution areas. Under the tutelage of the consultant, we analyzed what we did, identified where we could reduce or minimize non-value-added steps, began developing standardized work to coincide with our current procedures, and evaluated how we could control incoming materials to create a continuous flow of work. This included making some operational and physical changes in each area.

As we worked through the detailed analysis of employee time, steps, processes and procedures, we found that only about 20 percent of what our staff did was productive work adding value to the end

product. Non-value-added work can be either pure waste or may comprise tasks required due to outside variables such as regulations or machine start up procedures. An example of pure waste would be excessive walking from point A to point B or idle time spent watching machine operations. Another Lean tool we used was identifying and combining like processes into single work cells, allowing one or two individuals to perform similar tasks instead of several people performing each task separately.

Because we knew that we would be relocating some of our operations to the new Hillview site in about a year, we minimized the costs of remodeling by using the current floor plans and fixtures wherever possible. Of course we realize that we haven't optimized our Lean process, so current physical changes in the various areas are considered pilots. The pilots will allow us to see where we have made savings and also provide us with a better understanding of how we can improve what we do when planning for the Hillview move. These examples are just the tip of the iceberg in implementing a successful Lean project. There are other Lean tools and techniques yet to be tried, but we have already realized the benefits of making more space available and freeing up staff to work on other procedures.

In the Components Laboratory, new work cells and Lean processes have eliminated waste allowing us to implement bacterial detection, identify space for a QC lab, and provide our hospital customers with 24/7 coverage in Distribution.

In June, our Lean consultant returned to help us continue the Lean implementation in the labs and to help us plan for our Hillview move. While the tools and techniques of Lean have provided us some immediate successes, we still have much to do before



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Testing, Testing and More Testing!

CONTINUED FROM FRONT COVER

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SION FOR THE PATIENTS
WE SERVE.

(FDA) approved antiseptic solutions. Despite these efforts, it is estimated that about 1 in 5,000 blood components contains very small numbers of bacteria. These bacteria can multiply to high concentrations in blood products such as platelets that are not refrigerated. Bacteria in platelet products can cause serious transfusion reactions or even death of the transfusion recipient. For this reason, blood centers recently implemented testing to screen platelet products for bacteria. There are no detection methods sensitive enough to detect the small numbers of bacteria that may be present in a platelet product on the day of collection. Therefore, we must wait at least one day after collecting the platelet, and then place a sample of the platelet in a bacterial culture system. The culture system continuously assesses the sample for bacteria throughout the remainder of the platelet shelf-life. This computerized bacterial culture system is one of the large new machines in our testing lab.



Testing of Individual Donations for West Nile Virus (WNV) Nucleic Acid

You may recall that in the summer of 2003 we implemented an investigational blood screen for the genes (nucleic acid) of WNV. This testing was performed as part of a large nationwide clinical trial. The test involved pooling blood samples from six donors and then applying a complex and exquisitely sensitive test for WNV RNA (ribonucleic acid) to the pool. If a pool tested positive, the test was repeated on the individual samples. Fortunately, the WNV epidemic did not reach our area of the country in 2003 and we had no positive reactions on this test. Elsewhere in the U.S. and Canada, this investigational test successfully detected West Nile infections in blood donors and prevented hundreds of cases of viral transmission to blood recipi-

ents. However, the 2003 experience also indicated that the blood of some individuals with WNV infection contained such minute quantities of virus that the pooled testing method did not reliably detect it. Therefore, this year we added a second large test system to our lab so that we could test individual donations by this investigational assay. Any donor whose blood reacts on this test is contacted and asked to consider participating in a follow-up study. A reactive test on a blood donation results in only a temporary (56 day) deferral, as the virus typically clears quickly from the bloodstream.



Hepatitis B Virus (HBV) Nucleic Acid Testing

We are beginning another clinical trial of a donor screen for the genes (nucleic acid) of the hepatitis B virus. This is in addition to the routine testing for the hepatitis B surface antigen and antibody to hepatitis B. Experience with nucleic acid testing (NAT) for other agents indicates that NAT detects infections a little earlier than antigen or antibody assays. Any donors whose blood reacts on the HBV NAT test but not the other hepatitis B tests would be contacted and asked to consider participating in a follow-up study. In this way, we should be able to determine how much sooner the NAT assay detects infection compared to the currently licensed antigen and antibody assays.

Of course, all of these safety initiatives would be meaningless without your generous donations. Many thanks to those of you who moved over to the 780 Welch site. Please let us know if you'd like to take a peek at our new testing facility next time you come to Welch Road. If you'd like a tour, contact our Processing Supervisor, Jan Webster, at 650-724-3024 or websterj@stanford.edu.



Blood Love

By Elena Griego, Stanford Student with the Community Service Writing Program

LOVE IS IN THE AIR. Just eight short years ago, as the Stanford Blood Center started a tradition of Singles Nights, it also made its debut as a successful matchmaker.

Singles Night began as a way for active donors to give blood while meeting the men or women of their dreams. What better way to make blood donation into a social event than to introduce interested singles to each other at the same time? The Singles Night events are held at the Stanford Blood Center three to four times a year, typically around holidays, when the center needs blood the most. Each Singles Night has a theme—like Luau or Mardi Gras—and features food, social games, art activities, and icebreakers, to entertain the love-seeking singles.

It was at one of these Singles Nights that Jonathan Penn, 38, and Karen Handy, 36, fell in love. When Jonathan first heard about the event through a flier advertising to the Stanford Blood Center's regular donors, he thought it was a great idea; a good time to give the blood he was going to give anyway, not to mention a convenient opportunity to meet other singles. They met at Karen's first Singles Night event and Jonathan's second or third. As Jonathan was donating blood he chatted with a friend who casually mentioned that she had noticed Karen looking his way that evening. Just as Jonathan began to walk in Karen's direction, her name was called to donate, so he walked with her and they began talking and discovered they had several similar interests. The night progressed, and by the event's conclusion, Jonathan had Karen's number in his pocket and a love connection was made.

Three years later, on January 30, 1999, Jonathan and Karen were married and today they have Singles Night to thank for finding true love. Who would have thought that two people would come to the Stanford Blood Center to make a few friends, and instead meet the person they wanted to spend the rest of their lives with? Jonathan's advice to other singles in the area: "Be open to new things, anything can work, and plus, you'll have a cute topic of conversation to share for the rest of your life!"

What began as an idea to make blood donation fun for singles in the Palo Alto area became a time for 50 or more very diverse men and women, with the common interest of donating blood, to mingle and meet new people. So if you're single and you feel the urge to give blood, check out one of Stanford Blood Center's Singles Nights. Who knows, you too might find love sitting in the chair next to you! To find out when the next Singles Night will take place, visit the Special Events page at <http://bloodcenter.stanford.edu>.

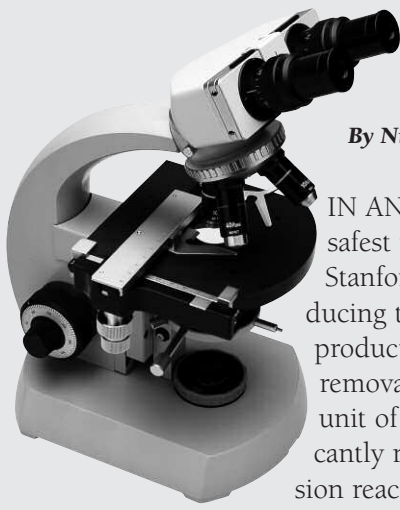


Jonathan Penn and Karen Handy, shown here at their wedding, met at Stanford Blood Center's Singles Night.

What's Going on With Lean?

CONTINUED FROM PAGE 2

we can say that we have truly become Lean. A lot has to do with developing a culture whereby everyone understands the value of a Lean process. This will not occur overnight and will require ongoing development. Lean is not about reducing the workforce or cutting back on quality. Lean principles help us become more productive and efficient, instilling quality at the same time. Lean Manufacturing tools and techniques are powerful in assuring we make well-informed and effective decisions. Recognizing how to identify and remove waste, control inventories, establish standard work procedures, and even out our work processes will provide us with the tools we need to meet upcoming challenges and ensure our future.



Prescription: Rh-Negative

By Nicholas Cheng, Stanford Student with the Community Service Writing Program

IN AN EFFORT to provide the safest possible blood to patients, Stanford Blood Center is leukoreducing the majority of its blood products. *Leukoreduction*, or the removal of white blood cells from a unit of whole blood, will significantly reduce the risk of a transfusion reaction in a recipient. Though the technique has been used for some time on an as-needed basis, this is the first time that the Blood Center will leukoreduce most blood products. With the adoption of this procedure, a new need has been created and different donor base will be required. Because this new technology eliminates our ability to produce platelets from units of whole blood, Automated Blood Collection (ABC), also known as apheresis, has become the sole source of platelets for transfusion. Of these ABC donations, there is a great need for blood lacking certain proteins, given the classification Rh-negative.

In order to remove the white blood cells, the whole blood must be passed through a fine filter. Because platelets are very sticky, they cling to the filter along with the white cells. With leukoreduction removing the majority of platelets, the resulting blood product can no longer be used for production of platelet products, and a new platelet supply must be solicited.

Because bone marrow produces platelets, patients with incapacitated bone marrow often desperately need platelets. Leukemia patients, for example, require supplemental platelets as much of their marrow is destroyed during chemotherapy. Platelets will also be used to aid any person needing a bone marrow transplant or having major surgery resulting in a loss of a large quantity of blood. If a ready supply of platelets is not available, a patient's platelet count could fall below critical levels, resulting in prolonged or even spontaneous bleeding. The availability of platelets is therefore crucial to patient survival.

Not only is a ready supply of platelets necessary, but in most instances, specific types of platelets are required to prevent serious compli-

cations. Blood containing proteins, as designated by the Rhesus Factor (Rh-positive), can lead to adverse transfusion reactions. People who are Rh-negative and lack these proteins develop antibodies upon their first exposure to the proteins in Rh-positive blood. The first exposure presents little or no health risks. However, once antibodies have formed, subsequent exposures will result in the recipient's immune system identifying the blood product as foreign and destroying it.

It is especially important that a woman who is Rh-negative not be exposed to Rh-positive blood from the time of her own birth to the end of her childbearing years. If an Rh-negative woman is exposed to an Rh-positive blood product, she will develop antibodies to Rh-positive blood. Therefore, if she becomes pregnant with an Rh-positive baby, her immune system will reject the baby's blood as foreign and attempt to destroy it. Although doctors can treat mild reactions, a severe reaction can result in a miscarriage or even necessitate a very painful intrauterine transfusion to replace to baby's Rh-positive blood with Rh-negative. In light of the severity of the consequences, it is imperative that the Blood Center have a ready supply of Rh-negative blood products.

With the inability to make platelets from leukoreduced whole blood, Rh-negative platelets from ABC donations are needed. ABC allows the Blood Center to collect platelets alone or in addition to other needed components. ABC returns unused portions of the blood to the donor, allowing donors to give platelets every two weeks, in contrast to the eight week period donors must wait between whole blood donations.

If you currently donate whole blood, please consider taking the next step in supporting the platelet supply by becoming an ABC donor. Schedule an ABC appointment next time you donate—by preventing serious transfusion reactions, it is an easy way for you to save a life.



The **Advancement** of Blood Center Testing

By Pamela Donohoo, *Stanford Student with the Community Service Writing Program*

STANFORD MEDICAL SCHOOL BLOOD CENTER'S primary mission is to collect and distribute enough safe blood and blood derivatives to supply the hospitals and patients it serves. Patients expect that blood is safe when they receive a blood transfusion. The Food and Drug Administration (FDA) is a regulatory body that makes sure that all precautions are taken with blood so patients do not get an infection from transfused blood.

The first human blood transfusion took place in 1818 by James Blundell; since then blood transfusions have changed immensely. When patients receive blood transfusions their immune systems are already weak from existing conditions, so pathogens in the blood have the potential to do serious harm. Detecting disease within the blood has evolved with new tests and technology. Prior to HIV, donor screening using questions about high risk activity played only a small part of the screening process. Questioning of donors became more extensive with time and now testing of blood is becoming more extensive with the recognition of new diseases and new scientific developments.

The Stanford Blood Center has been a leader in

blood safety because, unlike any other blood center, prior to the development of HIV testing the Stanford Blood Center was doing screening based on the knowledge about HIV that was accessible to them. While most other blood centers were waiting for the HIV agent to be identified, the Stanford Blood Center began surrogate testing. Surrogate testing uses a known test as a substitute for a test or an unidentified agent. It detects something statistically or medically associated with the disease-causing agent. It was known that this disease caused by HIV existed, that it was transmittable through blood, and that it caused particular abnormalities in the immune system. However, the HIV agent had not been identified nor had a test for the disease been developed. The Stanford Blood Center led by example by screening for immune abnormalities as evidence of HIV infection in the blood; other blood centers were thereby influenced to do something proactive against the transfer of HIV (then referred to as AIDs) through blood transfusion. The official Enzyme Immuno Assay test for HIV antibodies became available in 1985.

The common blood test is a reactive test called enzyme immuno assay testing (EIA). This test detects

Call for Comments!

What do you think of *Life Link*? Is there a specific topic that you'd like to read about? Do you have a question about blood donation or transfusion medicine? This is your chance to get involved. Here's your opportunity to pose a question to our Director of Clinical Operations or Administrator. The Stanford Blood Center works with Stanford Community Writing students each quarter, so go ahead and recommend an idea for their next article. Send your ideas to:

Stanford Blood Center
Attention: Newsletter
800 Welch Road
Palo Alto, CA 94304
or email them to: mhyndman@stanford.edu

Halloween S i n g l e s N i g h t

Wednesday, October 27
4:30 p.m.-7:30 p.m.



Hang with the coolest vampires this side of Transylvania - donate at our Halloween Singles Night monster bash! Spooky fun, not to be missed!



the body's response to an infection or antibodies. Nucleic acid testing (NAT) is a new molecular screening test. It uses polymerase chain reaction (PCR) to amplify genes so the genetic material (DNA or RNA) of the virus or bacteria can be detected. A licensed test is one that has not only been developed but has also been case studied and approved by the FDA. There are two licensed nucleic acid tests, one tests for Hepatitis C and the other tests for HIV. There are two unlicensed tests under development. The West Nile Virus NAT is in blood center use through an investigative new drug (IND) application by the FDA. Hepatitis B is the other test that is being implemented by the Stanford Blood Center under an IND. NATs are an important development because they can detect the presence of disease within an average of ten days after the disease has been contracted, while EIA tests detect disease an average of one or two months after contraction.

Pathogen inactivation is an alternative to testing that is being developed. This procedure puts a chemical into a donated unit of blood and activates the chemical with Ultra Violet light. The chemical then deactivates the mechanism that allows the virus or bacteria to replicate. Without the ability to replicate, the disease cannot infect a transfusion recipient. This process could eliminate the need for further disease detection tests. However, with current methods, the blood supply is so safe that putting additional chemicals into the blood may cause an unnecessary problem.

Bacterial contamination testing is being used in blood centers. This test is an added precaution that detects bacterial contamination of platelets. Platelets are the first to be tested for bacteria because bacteria

grow most easily in them due to the fact that they are kept at room temperature prior to transfusion. Approximately 1 in 5,000 units of platelets has a detectable level of bacteria. However, only 1 in 500,000 infusions has the potential of fatal results due to bacterial infection.

Innovations in the testing of blood are unlimited because currently there are pathogens in blood that are not tested for, and new diseases continue to be discovered. The Stanford Blood Center is a front runner in new blood testing innovations because it is very involved in research, by supporting other researchers and by being involved in the development of new tests. The Stanford Blood Center is also original in added testing for things such as Cytomegalovirus; Cytomegalovirus is a type of herpes virus and it is especially important that the Stanford Blood Center test for it because we serve patients with weaker immune systems.

Stanford Blood Center donors benefit from new testing because if they do have a transmittable disease it will be detected sooner and with more accuracy (fewer false positives will be reported) through Nucleic Acid Testing. Because the Stanford Blood Center is so deeply involved in research and the innovation of blood testing, donors are not only helping thousands of patients by providing the blood center with adequate amounts of blood, but they are also indirectly helping to make blood transfusion safer. Blood donors could further help the blood center in accomplishing their mission by staying healthy and continuing to donate.

Blue Mondays

We find that we are short of donors on Monday mornings, and we need to start the week off with a solid schedule in order to meet the needs of the patients we serve. Please consider being a Monday morning whole blood donor. To make an appointment, you can visit the donation page of our Web site, or call 650-723-7831, toll-free 888-723-7831. Thank you for your support!

a moment in history...

1908 French surgeon Alexis Carrel devises a way to prevent clotting by sewing the vein of the recipient directly to the artery of the donor. This vein-to-vein or direct method, known as anastomosis, is practiced by a number of physicians, among them J.B. Murphy in Chicago and George Crile in Cleveland. The procedure proves unfeasible for blood transfusions, but paves the way for successful organ transplantation, for which Carrel receives the Nobel Prize in 1912.

(SOURCE: AMERICAN ASSOCIATION OF BLOOD BANKS/WWW.AABB.ORG)



news&events

Another Way To Save A Life...

Contact Stanford Blood Center's Marrow Donor Coordinator, Derek Leith, and make an appointment to donate blood and request that it be screened for the National Marrow Donor Program (NMDP) Registry. Call 650-723-5532 or send an e-mail to derek.leith@stanford.edu. For more information about the Marrow Donor Program, log on to the Stanford Blood Center Web site, then click the red Donate button on the left side of your screen. This will reveal the Marrow button. Click and you're there.

Merchant Thank Yous

We would like to thank the following merchants for their continued contributions to our Centers:

ANDRONICO'S
Los Altos

BETTER BAGELS
Mountain View

HOBEE'S CALIFORNIA RESTAURANTS
Palo Alto

JJ & F MARKET
Palo Alto

NOAH'S BAGELS
Palo Alto

SIGONA'S
Palo Alto

STANFORD FLORAL DESIGN
Palo Alto

For the Good of All

By Elena Griego, Stanford Student with the Community Service Writing Program

LAST YEAR, LONG-TIME BLOOD DONOR Kory Mingus decided that he wanted to do something to positively affect both blood donation and the Leukemia & Lymphoma Society's Team In Training program. As he thought about a way to connect two of his life passions, he came to the realization that they were both working for the same cause. What could be a better way to help family and friends with leukemia and other blood cancers than to donate the blood that could save their lives?

Kory began giving blood 16 years ago and has been an active donor since the first time he was brought in to donate by a coworker. He became involved with Team In Training (TNT) in 1996 when, while watching his sister in a TNT marathon, he was inspired to join the cause because of the enthusiasm of all the volunteers. TNT is the world's largest endurance sports training program. In exchange for training and support, participants raise money toward cures for leukemia, lymphoma, Hodgkin's disease and myeloma. Through Kory's involvement in both of these programs he decided that he wanted to do something that could link the two.

The TNT program began in 1988 as an effort to raise funds in honor of the founder's daughter, a leukemia survivor. This group of athletes has now expanded to include over 30,000 participants who gather at the world's major marathons year-round to raise money to support cancer research and treatment. Why is Kory involved with TNT? He explains, "I love the idea that we come together as a team to confirm that the answer to life is to live it, share it, and make it possible for others to do the same by raising money to fund research for a cure for leukemia, lymphoma, or other blood-related cancers."

Kory's initial plan was to have his training team come to the Stanford Blood Center to donate as a group. This soon blossomed into the idea of inviting Bay Area Team In Training chapters to bring their teams in to local blood centers for a Peninsula-wide Blood Drive. The event, held for two weeks last November, came to include the Red Cross, Blood Centers of the Pacific, and the Stanford Blood Center. It was organized and advertised in Team In Training sub-groups as a way for healthy community-minded people to further extend their helping hands. Kory thought "it would be a great way to combine both the desire to strengthen a connection to the cause while doing something beneficial for people particularly afflicted with leukemia and anyone else who needs blood."

One person's interest in spreading a common good became a way for two non-profit organizations to support each other. At the Stanford Blood Center, we are hoping to spread the interest in this program and make it an annual event. Come join us next time as we work hand in hand with the Leukemia & Lymphoma Society to save lives!

For more information about TNT, go to www.teamintraining.org.

"TO EASE ANOTHER'S
HEARTACHE IS TO FORGET
ONE'S OWN."
-ABRAHAM LINCOLN





Students Who Care

By Nicholas Cheng, Stanford Student with the Community Service Writing Program



FOR A MULTITUDE OF REASONS, students make up one of the Stanford Blood Center's most important donor bases. Students who make their first donation in high school or college often become regular blood donors for life. Many students, in their physical primes, do not ever feel tired after a donation. Their proximity to the blood center makes donation convenient, even accessible by bike. A few energetic students involved in a group often get crowds of donors by sponsoring blood and bone marrow drives for their choir, dorm, or sports team.

So what is it that motivates these young people to donate? For student Rafer Willenberg, the answer is quite simple: "I like helping people. It's easy. And I might need blood someday." This community commitment seems to be by far the biggest motivation. Many students jump at a fast opportunity to make a difference. Though almost everyone wants to make some positive impact on the community, many volunteer opportunities have time commitments that students simply cannot squeeze into their hectic schedule. Blood donation, on the other hand, is fast, convenient, and has a very significant role in the community. As I found when I first donated at the Stanford Blood Center, the entire whole blood donation process took me just under an hour from the time I walked in the door until the time I walked back out. I even managed to squeeze it in between a morning and an afternoon class. In a student survey, conven-

ience is certainly the key, as almost everyone who donated indicated that they would donate more frequently if transportation was provided to the Blood Center or the Blood Center came to them. For Junior Jim Rodgers, "... one of the biggest factors when it comes to people donating blood is convenience. It's not convenient if you have to make an appointment and go far away, so people won't tend to do that. But if it can be brought closer and made more convenient, through a blood drive for example, people seem more willing to do it. At least that's how it is for me."

Although many students seem willing to donate, there are still a substantial number that hesitate. When asked why, responses varied immensely. For a significant number of students, like this student wishing to remain anonymous, the reason is simple fear. "When they figure out how to take my blood without using a HUGE NEEDLE, I'll be all over that." Several students mentioned fainting at the sight of blood or after getting blood drawn. However, of the people discouraged by fear of the blood donation process, many indicated that they may be convinced in some way to donate. When asked what might help them overcome their fear, many students indicated that knowing how much the blood was needed would change their minds. Statistics about patients who needed blood and what it was used for would be persuasive. Another frequently selected technique for overcoming fear was group donation. Donating blood with friends during a blood drive was also frequently selected as a remedy for fear.

Despite the seemingly endless barrage of blood drive requests, it seems that some students have been targeted many times while others have never been asked. Freshman Rebecca Rojansky has been asked to donate so frequently that she is now selective about the organizations that she donates for. "Sometimes it depends upon who is going to be using the blood. If, however, the program is run by an organization that I support then I will be more likely to donate," she remarked. Of students surveyed, including people who declined, everyone viewed blood donation in a positive light and indicated a desire either to donate or at least support their fellow students who did.



Quality Assurance:

KEEPING DONORS AND PATIENTS SAFE

By Kirsten Jackson, Stanford Student with the Community Service Writing Program



EVEN PEOPLE WHO REGULARLY DONATE BLOOD to the Stanford Blood Center may rarely see anyone who works in the Quality Assurance (QA) Department, but everyone who donates blood benefits from the work they do. While members of the QA Department often work behind the scenes, they have one of the greatest responsibilities at the Blood Center: keeping donors and patients safe.

The Quality Assurance Department keeps the Stanford Blood Center in compliance with safety regulations put forth by the Food and Drug Administration, the American Association of Blood Banks, and the State of California. They do this by

From left to right: (Back row) Alison Ianculescu, Danielle Johnson and Norma Gutto. (Front row) Elaine Sugawara and Patti Lendio.

monitoring blood donation, processing, and storage procedures, by evaluating the work of staff members, and by reviewing blood center records. In the rare instance there is an error of some kind at the blood center, the Quality Assurance Department ensures the appropriate corrective action is taken and helps

develop new procedures so that the error does not reoccur in the future. Before a new instrument or blood donation procedure is ever used at the Stanford Blood Center, the Quality Assurance Department ensures it is tested thoroughly to make sure staff, donors, and those who will eventually get the blood are safe.

The Quality Assurance Department hired three specialists in 2003 to further help them ensure the safety of all those who work with and receive products from the Stanford Blood Center. The Document Control Specialist centralized and organized all documents at the Stanford Blood Center for quick and easy retrieval when they are needed. The Technical Services Specialist conducts audits and reviews all blood center laboratory procedures. The Donor Services Specialist is responsible for handling errors and tackling any areas of the donation process that needs improvement. Together, these specialists help the QA Department find and correct any problems at the Stanford Blood Center.

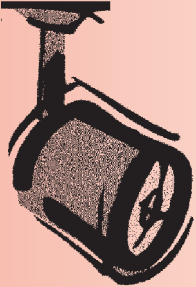
We have an excellent reputation for safety here at the Stanford Blood Center because of our superior Quality Assurance Department. The QA Department makes sure that all blood donation procedures are safe for our donors and that all the patients we help receive safe units of blood. Next time you donate blood, you can feel even more secure knowing that the staff in the Quality Assurance Department are working around the clock, though behind the scenes, to ensure both your safety and the safety of those you help with your donations of blood.

Celebrate the Season

Monday, November 15 through Saturday, January 8

Be a holiday hero! Donate blood in one of our Centers around the holidays and you'll receive a T-shirt, designed by a patient at Lucile Packard Children's Hospital, as a thank you gift!





Volunteer Spotlight:

Mr. Personality Coming to a Canteen Near You!

By Tessa Moore, Volunteer Services Manager

BOB LAUGHEAD IS NO STRANGER to the blood center, whether he's on the bed himself donating, or in the canteen tending to donors who have just donated. Bob has been donating blood since 1947, and volunteering at the Stanford Blood Center since 1993 after retiring from Stanford Linear Accelerator Center (SLAC) in 1992.

When he worked at SLAC, he was a regular donor at the blood drives there, and spent a lot of time chatting with the canteen volunteer. Rumor has it that Bob said to him, "When I retire I want your job"—and now the four times a year we go to SLAC you'll find Bob in the canteen! Before the mobile starts he has breakfast with a friend who still works there, and after his shift he has lunch with another.

Bob was an engineer at SLAC for almost 30 years, starting work there a year after it opened and before the accelerator was built. He loved watching it being built and becoming something, he said. Besides being proud of his work at SLAC, Bob is also proud of the "I Quit Club" he started there in 1967, after he quit smoking himself on August 1, 1967. He also credits himself with bringing one of his coworkers, MaryBeth Beerbohm, into the blood center volunteer corps—she started volunteering a year after Bob and still does a regular shift at Welch Road.

Bob's other favorite mobiles to volunteer at are Abbott Labs and Cisco, although wherever he's volunteering he always gets there early to set up the canteen his way! "That way," he says, "I can only blame myself if I don't like it." He loves working with the nurses and the drivers, although helping on the bloodmobile, which he thinks needs a more clever design, especially in the canteen area, is not his favorite. "You have to



be real good friends just to pass each other in the bus" he says laughing. His sense of humor is one of the things others love about Bob, too. "I love working with Bob, he's always so upbeat," says nurse Cindy Boone. "But," she adds, "He does need to work on his jokes!"

Charge nurse Mary Jo Jones has much praise for Bob. "He is Mr. Personality and Mr. Dependability," she says. "Bob is the captain of the ship in the canteen, and he is wonderful with the donors. I am always confident that everything will be taken care of when he's working."

The first time Bob donated blood was in 1947, when a call went out where he worked for people to donate for an employee who had just severed his arm in a piece of machinery. From a workforce of 1200, Bob was one of only three people who stepped forward and went to the hospital. There, they did a direct transfusion from donor to patient. From then on, he became a regular donor. In the early days, he often donated at the American Legion, where afterwards the Ladies Auxiliary would serve hotcakes and sausages. To date, Bob has donated a total of 173 times, all whole blood donations.

When he's not helping SMSBC out, Bob is probably busy fixing something at home or volunteering for the Salvation Army, which he also does four times a month. He also gets to spend some well deserved relaxation time at his cabin in the mountains in an old mill town called Westwood.

Thank you Bob for all you do for SMSBC—we are so lucky to have you as a volunteer and a donor!



Daily December Drawings

Wednesday,
December 1 through
Friday,
December 31

*Every day in
December, at our
Centers and on our
mobiles, we will hold
a drawing for prizes
donated by generous
local merchants!*





Golden Donors Know Their ABCs

By Mark Liao, Stanford Student with the Community Service Writing Program

IS IT POSSIBLE TO IDENTIFY a Stanford Blood Donor just by looking at him or her? You can if the person is a Golden Donor. As a token of appreciation from the Stanford Blood Center, a black T-shirt emblazoned with this proud designation is awarded to those who have donated whole blood or blood components an incredible one hundred times.

Considering that donors can only donate whole blood every eight weeks, such a sustained effort to this landmark would conceivably take a very long time. In fact, several years!

However, recent technological developments have allowed blood collection centers across the nation to perform a newer type of donation process called Automated Blood Collection (ABC), also known as apheresis. The process allows certain blood products to be collected while at the same time replenishing the donor's lost fluid with saline, and subsequently donors are often able to donate more frequently: every two weeks for platelet donors. In this issue, we profile two amazing Golden Donors who donate via the ABC process.

Eve Laraway has the distinction of being one of the Stanford Blood Center's youngest Golden Donors. She achieved this landmark at the age of only 35. Working ten hours a day from Monday to Friday, it is hard to imagine that she can find the time to donate every two weeks, but somehow she manages to fit ABC donations into her schedule.

In high school, Eve made an effort to donate during blood drives, but wanted to donate more. As luck would have it, she overheard a woman's conversation about Automated Blood Collection and was fascinated by the prospect of being able to give a little more to her community. Now, she regularly donates every two weeks, up to 24 times a year, and quickly achieved the Golden Donor status last year. Eve humorously notes that ABC is "a great way to rack up points in Heaven," but cites that she feels that she has a duty to give back to her community because her family has a history of cancer.

Despite her hectic work schedule, she believes that donations of blood products are important enough to set aside an hour or two every two weeks in her schedule to donate. With mom in tow, she spends the hour donating, which is an "instant excuse to lie around" but still makes a difference. She "cannot recommend it enough" because "people need so much [blood]."

Automated Blood Collection differs from the standard blood donation process in a number of ways. Most notably, it takes about an hour to make an ABC donation compared to

the ten minutes it takes to donate whole blood. Because of this, ABC platelet donors who come to the Stanford Blood Center have a chance to watch television, or even read a book if they choose to help pass the time. However, the extended time yields significant rewards. Specific blood products that are urgently needed during that time period can be taken, yet allow the donor to give more often than the traditional blood donation. One fact that is of interest to many prospective ABC donors is that the needle used to collect blood via the ABC process is actually smaller than the type used for donating whole blood, making the process much more comfortable for many.

Stanford Blood Center donors come from all walks of life: Patricia Lucas is another amazing Golden Donor. She is also a prominent citizen of Santa Clara County! As a Superior Court judge, she has been a long-time donor at the Stanford Blood Center. She started to regularly donate whole blood in 1984, but a few years later she learned of Automated Blood Collection and was attracted to how this special contribution could help many more people because she would be able to donate more often. Subsequently, she donates about once a month, sometimes every other month, in order to fit her schedule.

Judge Lucas suggests people donate "for people you know who needed it" in order to help encourage donors to donate often and generously. When she donates, she usually makes an appointment at 7:00 a.m. on a weekday morning so she can be in the office by 9:00 a.m. Although her donation schedule has been made more difficult because of her work schedule, she makes the effort to point out that healthy individuals should donate whenever possible, whether it is at the Blood Center or at an organized blood drive. She encourages prospective ABC donors to learn how the process benefits patients, and how easy it is to donate. Judge Lucas loves the fact that technological advancements mean that she only needs to donate with one arm compared to ABC collection of the past that required both arms to be used. It is also much faster than before.

Whether you choose to donate by Automated Blood Collection or to give whole blood, it is important to keep in mind that each gift helps save lives. Certain periods of time, such as the winter and summer holidays, are particularly taxing on the nation's blood supply, and donors of all types are constantly needed.



Have You Taken Your Blood for a Spin?

OVER THE YEARS, Stanford Blood Center has worked hard to meet the increasing demand for blood. Automated Blood Collection (ABC) technology, also known as apheresis, helps us optimize blood donations, making the best use of your time and your generous gift to patients. By closely monitoring daily needs and by using ABC, we are able to tailor donors' blood donations to local patients. When customizing donations, we consider factors like your blood type and how many times per year you donate.

In the past, a unit of whole blood was separated into its three main components: red blood cells, platelets and plasma. Surprisingly, it took the combined efforts of SIX whole blood donors to produce ONLY ONE therapeutic dose of transfusable platelets. Automated blood donations are most efficient since you—as ONE person, in ONE donation event—can give full transfusable doses of the components most needed by patients. For instance, we can collect doses of all three components or multiple doses of certain components. Most donors can provide at least two transfusable patient doses of platelets, and some can even provide three doses!

Patients benefit the most from ABC because they are receiving your life-saving blood. Automated donations ensure that the blood components patients need come from fewer donors—which decreases the likelihood of transfusion reactions that can occur from multiple donor products. Patients' families and friends benefit, knowing they will share another day with their loved ones. The community also benefits because by donating multiple products for patients, you help reduce healthcare costs.

This year, Stanford Blood Center has introduced ABC to whole blood donors at our Stanford Campus location. You will be seeing new brochures and posters, and our donor services staff will be newly trained and updated so you can get immediate answers to your questions about ABC. Guidance on your preferred donation process will be tailored to you, and based on the immediate needs of patients.



Stanford student, Kelsey Lynn, makes an ABC donation of platelets.

There are multiple combinations of blood components that may be donated through ABC. You may be asked to donate platelets with red cells, red cells and two plasma units, or double units of red cells. For some donors, whole blood

will continue to be the best type of donation. ABC donations are safe, sterile, and take anywhere from 25 to 90 minutes, depending on which blood components are donated.

If you meet certain eligibility criteria and are interested in ABC, our staff will collect a “purple top” tube of blood in order to run what’s called a Hemogram. This test will tell us your platelet count. We will then know which donation process is best suited for you.

No matter which donation type you make when you visit the Stanford Blood Center, you can rest assured that you are saving the lives of local patients.



ABC Supervisor, Mars Mallari, checks Lynn's progress.

a moment in history...

1939/1940 The Rh blood group system is discovered by Karl Landsteiner, Alex Wiener, Philip Levine, and R.E. Stetson and is soon recognized as the cause of the majority of transfusion reactions. Identification of the Rh factor takes its place next to the discovery of ABO as one of the most important breakthroughs in the field of blood banking.

(SOURCE: AMERICAN ASSOCIATION OF BLOOD BANKS/WWW.AABB.ORG)





Viral Immunology Laboratory Investigates HCV and HTLV

Stanford Medical School Blood Center has three academic medical directors. They are faculty members of the School of Medicine that run research laboratories. Dr. Carl Grumet leads the Histocompatibility laboratory; Dr. Ed Engleman leads the Cellular Immunology laboratory; and Dr. Steven Fournier leads the Viral Immunology laboratory. Each of these research teams strives to develop and improve testing and treatment for patients in need. The Blood Center is proud to provide support for their amazing work.

THE RESEARCH FOCUS of the Viral Immunology Laboratory is on two blood transfusion-transmitted viruses, Hepatitis C Virus (HCV) and Human T-cell Lymphotropic Virus, type I and II (HTLV). We want to know how these viruses infect our bodies at the cellular and molecular level, how our immune system fights against them, and how they can escape from immune containment. The approach is to dissect the antibody immune response by producing and characterizing human monoclonal antibodies (HMAbs) to these viruses. Information gained from this effort has contributed to improving diagnostics for HTLV and in developing new therapeutics to prevent or to treat these viral infections.

In the case of HCV, most acute infections become chronic after several decades leading to liver failure and hepatocellular carcinoma. Half of the liver transplants in the U.S. are performed to treat liver failure caused by HCV infection. Over 170 million people worldwide and over four million Americans are chronically infected with HCV. The economic burden is overwhelming; in the U.S. alone the estimate is well over several billion dollars each year. Therapy with combined interferon and ribavirin has led to clinical improvement for some patients with chronic HCV infection. But major limitations include significant adverse treatment side effects and a high relapse rate when patients discontinue therapy. Short of a vaccine, we are exploring the use of HMAbs to prevent and perhaps to treat HCV infections.

First, we want to determine the structure of the virus envelope proteins since they are responsible for virus attachment to the cell surface leading to entry into susceptible cells. To isolate antibodies that are more likely to block these early steps of infection, we developed a large panel of HCV HMAbs from HCV seropositive blood donors who are asymptomatic from

the infection. Our logic is that this group of individuals is more likely to be part of the 20 percent of infected people with an immune response capable of contributing to a complete recovery. From selected blood donors, we generated HCV HMAbs that are broadly reactive to different virus isolates found in the U.S. We determined that some of these antibodies neutralize the virus, and we are determining the mechanisms of how antibodies mediate virus neutralization.

Antibodies can respond at different steps of virus infection. Antibodies can attack the virus not yet attached to liver cells by directly or indirectly inhibiting the interaction between cell surface receptors and the virus envelope proteins. Antibodies can also work against the virus after binding to the cell surface. Several biological assays have been developed to test this function. To improve on the therapeutic properties of these antibodies, we are analyzing and molecular-cloning selected antibody genes, which will lead to improvements on virus neutralization potency.

Besides HCV research, the second set of viruses we study includes HTLV-I and HTLV-II. These are two closely related transfusion-transmitted retroviral pathogens of emerging significance. HTLV-I causes a lymphoproliferative malignancy, called adult T-cell leukemia/lymphoma (ATLL). The cancer tends to develop in patients infected shortly after birth and after a prolonged latency period of 20 to 30 years, suggesting that age at the onset of infection is a factor. The lifetime risk to develop ATLL is estimated at 2 to 5 percent of people with HTLV I and II. The disease course can be acute and rapidly progressive with an average survival of six months. HTLV-I and -II also are associated with a progressive neurological disorder that is gradual in onset. Our investigation is a detailed analysis of the antibody response to HTLV-I and HTLV-II among infected individuals. To date, we succeeded





*From left to right:
Paochen Zhang,
Lilibeth Lorenzo-Fernando,
Dr. Jinming Xia, Judy Rowe,
Dr. Zhenyong Keck,
Dr. Ta-Kai Li, Hongying Chen
and Dr. Steven Foung*

in producing a panel of HMABs to HTLV-I and -II structural proteins from peripheral B-cells of HTLV-I & HTLV-II infected individuals. The molecular and biochemical characterizations of viral epitopes identified by these HMABs have led to better diagnostic tools for HTLV-I and -II disease association studies.

Dr. Steven Foung is the principal investigator of a group of scientists with backgrounds in molecular and cell biology. The research team is assembled with PhD scientists, Master level and other research assistants. Dr. Jinming Xia, with expertise in biochemistry, worked in biotech and drug discovery companies in the Bay Area prior to joining this laboratory. On the weekends, he enjoys hiking with his wife, Mei, and his daughter, Nancy. Dr. Ta-Kai Li trained in immunology and cell biology at Harvard and the National Institute of Health (NIH) and is responsible for human antibody production and characterization. He enjoys his family life with his wife and 7-year-old son. Their favorite vacation is a trip to Disneyland. His favorite hobby is watching old movies. Dr. Zhenyong Keck is the senior scientist and trained at Caltech and the NIH. She has worked in the biotech industry on the discovery and cloning of new viruses that cause hepatitis and other diseases. She said, "To me, the most attractive and exciting aspect of our research is the discovery of new therapeutics with the hope of one day making a difference in patients' lives." She exercises daily and swims a mile a day, and sometimes she tops this off with an hour of cycling. She enjoys spending time with her daughter but hates chauffeuring her around on the weekends since she is constantly getting lost going

from one activity to another. Hongying Chen has had experiences in drug discovery by studying protein-protein interactions using molecular biology, cell biology and pharmacology both in the academic and corporate area for nineteen years. She and her husband, Qimin, enjoy hiking, watching Chinese movies, and eating out on the weekends. Judy Rowe, born and raised in California, began work as a clinical laboratory scientist and then switched to research. On her down time, she enjoys reading and gardening. Her favorite genre is murder mysteries and she also enjoys spending time with her family in Santa Rosa. Lilibeth Lorenzo-Fernando has been with the lab for over seventeen years. She said, "there are many big experiments and projects running in the lab and many of them start with my supporting work." With four children ranging in age from three to 13, she has organized their activities to minimize travel, no more than one to two places each weekend. Sunday is the most peaceful time for Beth. After church in the morning, there is a family lunch where she does not have to cook. Paochen Zhang is the newest member of the lab and provides administrative support. She is helping immeasurably to computerize the lab's databases. Paochen has three children and "has no life" on the weekends. When she is not driving her children hither and yonder, she and her husband enjoy camping with their kids. She said, "The lab is very productive and generates lots of data. I am looking forward to applying my previous Data Base Management System experiences to the bio-sciences field. It is great to work in the challenging, friendly environment."

Check out Stanford Blood Center's research program on our Web site at <http://bloodcenter.stanford.edu> - click on the Research tab on the home page.



stanford blood center

Stanford Blood Center

(new combined location)
780 Welch Road, Suite 100
Palo Alto, CA 94304

Stanford Blood Center Donor Hours Palo Alto Center -

Monday	9:00 a.m. – 12:30 p.m.*
	*Whole Blood only
	12:30 p.m. – 4:30 p.m.
	4:30 p.m. – 6:30 p.m.*
	*ABC/Apheresis only
Tuesday	Noon – 7:30 p.m.
Wednesday	7:00 a.m. – 2:30 p.m.
Thursday	Noon – 7:30 p.m.
	7:30 a.m. – 10:30 a.m.*
	*ABC only
Friday	7:00 a.m. – 2:30 p.m.
Saturday	7:00 a.m. – 2:00 p.m.

(Hours are for all donation types, unless otherwise noted)

Stanford Blood Center of Mountain View

515 South Drive, Suite 20
Mountain View, CA 94040

Mountain View Center -

Whole Blood Donations

Monday	9:00 am	– 5:30 pm
Tuesday	Noon	– 7:30 pm
Wednesday	9:00 am	– 5:30 pm
Thursday	9:00 am	– 5:30 pm
Friday	9:00 am	– 5:30 pm
Saturday	8:00 am	– 12:00 pm

Mountain View -

ABC/Apheresis Donations

Monday	1:00 pm	– 6:30 pm
Tuesday	7:30 am	– 12:30 pm
Wednesday	Closed	
Thursday	1:00 pm	– 6:30 pm
Friday	7:30 am	– 12:30 pm
Saturday	7:30 am	– 1:00 pm

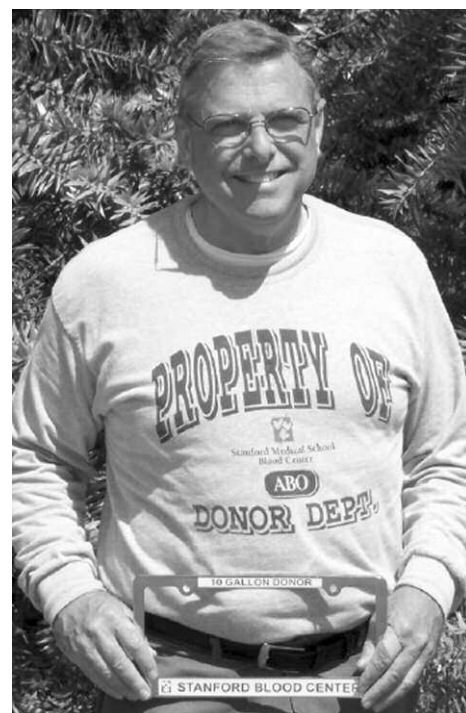
Palo Alto and Mountain View Centers closed Sundays and Holidays.
ABC/Apheresis donations are by appointment only.

Please send Life Link questions & comments to:

Stanford Blood Center
Attention: Michele Hyndman
800 Welch Road
Palo Alto, CA 94304
mhyndman@stanford.edu
Or call, 650-723-8237

Appointments:

650-723-7831 or 888-723-7831
Resource Nurse: 650-725-9968
Administration: 650-723-7994
Fax: 650-725-4470
Web Site: <http://bloodcenter.stanford.edu>



Blood Donor Carlin Black poses with the T-shirt and license plate frame that he earned while saving lives! Thanks Carlin!

A special thanks to the following people who contributed to the newsletter:

SUSAN A. GALEL, MD,
Director of Clinical Operations
ZENYONG KECK, PhD, Virology Lab
MICHELE HYNDMAN,
Public Relations Manager
TESSA MOORE,
Volunteer Services Manager
JEAN STANLEY, Director of Operations

PATRICIA STAYNER, RN,
Director of Donor Services
JENNIFER RECZKOWSKI,
Center Recruitment Consultant
VINCE YALON, Administrator
NICHOLAS CHENG, Stanford Student with
the Community Service Writing Program

PAMELA DONOHOO, Stanford Student
with the Community Service Writing
Program
ELENA GRIEGO, Stanford Student with the
Community Service Writing Program
KIRSTEN JACKSON, Stanford Student with
the Community Service Writing Program
MARK LIAO, Stanford Student with the
Community Service Writing Program



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