A Stanford Medical School Blood Center Publication Summer 2002

LifeLink

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

Blood Center Implements FDA Guidelines

A message from the Associate Medical Director

Dr. Susan Galel, M.D.

By Susan A. Galel, MD,
Associate Medical Director

Over the next several months, blood centers throughout the U.S. will be further tightening donor restrictions related to residence in the U.K. and Europe. This is because of new guidelines issued by the U.S. Food and Drug Administration (FDA) effective in May and October 2002.

The new guidelines are a result of the FDA's desire to further decrease the possibility that the agent that causes Bovine Spongiform Encephalopathy (BSE, or "Mad Cow Disease") could enter the U.S. blood supply. BSE is a devastating neurologic disease of cattle caused by an infectious agent called a "prion." BSE was epidemic in cattle in the United Kingdom between 1980 and 1996. In 1996, a new neurologic disease was recognized in people in the United Kingdom. It is now known that this new human disease, called variant CJD (vCJD), is caused by the same prion that causes BSE.

> "There is NO evidence that the agent that causes vCJD/BSE is transmissible from person to person by transfusion."

As of today, more than 100 cases of vCJD have been identified, mostly in the United Kingdom, but also in France and some other countries. New cases continue to be diagnosed in the United Kingdom and Europe. It is thought that the people who are now showing evidence of vCJD acquired their infections from exposure to beef products many years ago during the cattle epidemic. So far, there have been no cases of BSE among cattle in the United States.

There is NO evidence that the agent that causes vCJD/BSE is transmissible from person to person by transfusion. However, it appears that people can have the prion infection in their bodies for

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New Tests And Technologies Affect The Cost Of Blood

By Vince Yalon, Administrator of the Stanford Blood Center

The cost of producing blood products suitable for transfusion has skyrocketed in the last five years. At the root of this increasing cost is the public's desire for a one hundred percent pathogen free blood supply. The legacy of transfusion-transmitted HIV is that blood centers race to implement new tests for transfusion-transmitted disease within days of FDA licensure. There will be no end to the pursuit of an increasingly safe blood supply. While this goal is laudable, the cost is staggering.

Twenty years ago, when the blood banking community was awakening to the grim reality that a terrible disease could be transmitted via blood transfusion, routine screening was done for only two pathogens: hepatitis B and syphilis. Because no test was available for the emerging HIV pathogen, "surrogate" tests (an additional hepatitis B test) and a measurement of liver function was added that might indicate a risk of HIV presence in donor blood.

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Around the Hemo Globe

Transfusion Services: At The Crossroads

By Lisa Singer, Stanford Student with the Community Service Writing Program

Stanford Medical School Blood Center supplies Lucile Packard Children's Hospital, O'Connor Hospital, El Camino Hospital, Palo Alto Medical Foundation, and Stanford Hospital with life-saving blood. But at Stanford, blood does not have to travel very far from the donor to go a long way. Located adjacent to Stanford Hospital, Stanford Medical School Blood Center (SMSBC) serves the needs of its neighbor and primary customer through both research and blood collection. Although SMSBC and Stanford Hospital have separate administrations, they are connected by common physicians and a common mission: to provide patients with vital blood. After leaving SMSBC, donated blood makes its way to the patient by simply crossing the street. Its first and last stop before finding the patient is Transfusion Services (TS). TS links SMSBC to the Hospital, and the donor to the patient.

As soon as SMSBC processes the blood, separates it into red blood cells, plasma, platelets, and completes infectious disease screening and typing, SMSBC sends the blood to TS. Units are labeled with unit number and blood type, donor name is not on the unit. Work at TS begins long before the transfusion. Since blood matches are very specific, TS must constantly check its blood inventory and resupply all types of blood. Once blood units arrive at TS, technicians recheck each component for surface proteins. If a patient has antibodies to a protein and receives blood containing that particular protein, then his or her immune system will attack the blood cells. A, B, O, and Rh are the most common surface proteins on red blood cells, but about five percent of patients also make antibodies to one of the other 20 proteins. A successful blood transfusion depends on protein compatibility. Checking blood for proteins is called "typing" and it is one of the most important activities at TS.

Doctors initiate the transfusion process by sending an order form and a patient blood sample to TS. First, TS types the patient's blood. Usually, a machine will type many samples at once, but if the transfusion is urgent, TS will manually type an individual sample. Technologists enter the patient blood types into a computer system that also stores the unit types. When a technician selects a unit, the computer checks the protein compatibility between the unit and the patient. This is called an electronic cross-match and is a unique feature of Stanford Hospital.

Once compatibility has been verified, TS labels the selected blood component with the patient's name, type, and donor unit number. Donor names are never revealed to patients. After labeling, the blood component is prepared for delivery and alphabetized in the appropriate storage area for easy access. Different donations require different preparations. Since plasma is stored in the freezer, it must be thawed in a water bath for 30 minutes before being sent to the patient. Because red blood cells carry oxygen, they are needed most urgently in emergencies; fortunately, they also require the fewest last-minute preparations. Finally, the patient's floor sends a call slip to TS requesting the blood. A sophisticated pneumatic tube system instantly transports the blood to the patient unit.

Transfusion Services guides blood from donor to patient. A smooth transition requires a united effort between SMSBC, TS, and the hospital physicians. As Associate Medical Director of TS and SMSBC, Dr. Susan Galel helps foster cooperation. She attests to the importance of blood, "I find it really exciting to work here at Stanford because there are so many different patients and I get to work with all of them. Blood is an essential part of so many treatments." Thanks to the generosity of the Stanford donor community, blood will continue to go a long way.

The Building Blocks Of The Gift Of Life

By Lisa Singer, Stanford Student with the Community Service Writing Program

The Blood Center's components lab enables blood to make the transition from donor to patient. While the processing lab tests the blood for infectious diseases and surface proteins, the components lab separates blood into three basic parts: red blood cells, plasma, and platelets. Not only do the different parts of blood perform different functions, but they also contain different surface proteins. If a donor's markers are not compatible with a recipient's, then the transfusion will not be effective. Separation enables doctors to target patients' specific needs with the corresponding blood component, ensuring that blood is used efficiently. Through separation, a

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many years without showing any symptoms. Blood agencies throughout the world are taking severe precautions to minimize the theoretical risk that someone who is unknowingly harboring the prion infection might transmit it to other people through donated blood.

Earlier FDA restrictions, implemented in February 2000, prohibited blood donations by individuals who had spent six months or more in the United Kingdom during the years of the BSE epidemic (1980-1996). The FDA estimates that this restriction reduced the theoretical risk of prion transmission by transfusion by about 87 percent. Starting May 29, 2002, individuals who have spent three cumulative months or more in the UK between 1980 and 1996 will be indefinitely deferred. At the end of October, additional restrictions will be implemented. By further tightening donor restrictions, the FDA is hoping to eliminate about 90 percent of the theoretical transmission risk of vCJD. By introducing the new donor restrictions in two phases, the FDA hopes to prevent life-threatening blood shortages that could result from a sudden loss of a large number of donors.

Below is a brief description of the upcoming restrictions. If you think that these restrictions may apply to you, please contact us to discuss your specific situation. Every donor is precious, and we do not want to lose you as a blood donor unless we have to! Also note that the new restrictions are being phased in to help avoid blood shortages. IF YOU ARE ELIGIBLE TO DONATE UNTIL OCTOBER, PLEASE CONTINUE TO DONATE UNTIL THAT TIME. In the meantime, please encourage your friends, co-workers, and family members to donate to help replace the donors we are losing. We have even introduced a new donor program called the Traveler's Club to help you recruit new donors.

Thank you for your help as we struggle to maintain a safe and adequate blood supply!

Effective May 29, 2002 the following individuals are ineligible to donate blood for transfusion to others:

- Individuals who spent a total of three months or more in the United Kingdom from 1980-1996.
- Individuals who were in the U.S. military, dependents of U.S. military, or civilian military and were stationed in certain European countries for six months or more between 1980 and 1996. (This is because some U.S. military bases in Europe obtained their meat from the United Kingdom. Please contact us to discuss where you were stationed.)
- Individuals who lived in France for five years or more since 1980.
- Individuals who received a blood transfusion in the United Kingdom since 1980.

Effective October 28, 2002 the following additional people will become ineligible:

- Individuals who spent five years or more since 1980 in some other European countries (please contact us to discuss your situation).

For detailed information about this topic, including Traveler's Club membership for deferred donors, please visit http://bloodcenter.stanford.edu/cjd.html.

Each year, Stanford Blood Center holds its Daily December Drawings. Throughout the holiday season, we raffle off prizes to thank our blood donors for their life-saving efforts. We would like to thank the following merchants for graciously donating prizes:

Thanks!

THE BEAD SHOP
BENBO'S RESTAURANT
BOB & BOB
CARDINAL HOTEL
CASSIS
COMPADRES
DIAMONDS OF PALO ALTO
DISCO REX PHARMACY
DOMINO'S PIZZA
FONTANA'S RESTAURANT
GARDEN COURT HOTEL
GELATO CLASSICO
HOBEE'S RESTAURANT
LEAF & PETAL
MADDALENA'S
MICHAELA'S FLOWER SHOP
NOLA RESTAURANT
RICHARD SUMNER GALLERY
ROBAII RESTAURANT
STANFORD FLORAL DESIGN
STANFORD LIVELY ARTS
SU HONG RESTAURANT
SUSHI YA RESTAURANT
THE TAILOR MAID
WINTER LODGE
YOGA CENTER OF PALO ALTO

News & Events

NEW TEST & TECHNOLOGIES AFFECT THE COST OF BLOOD
CONT. FROM FRONT COVER

This hepatitis B test and an additional test for liver function, also served as "surrogate" tests for non-A, non-B hepatitis (now called hepatitis C).

In 1985, an antibody test was developed to screen for HIV. Antibodies are the body's response to a foreign protein. This test has become increasingly more sensitive and more specific since its early development. The "surrogate" tests for HIV continued to be required as it was felt they added additional layers of safety. An antibody test to detect HTLV, a blood transmittable virus endemic in needle sharing drug users, was added in the late eighties.

In the early nineties, an additional test for HIV (this time an antigen test) was developed and mandated. Antigens are proteins produced by the infectious agent. Shortly after the hepatitis C genome was discovered, an antibody test for this pathogen was added to the menu as well. With the new millennium came tests that, for the first time, would screen for presence of viral DNA or RNA rather than the body's antibody or antigen reactions to a pathogen. Thus, the dawn of nucleic acid testing (NAT).

The first NAT screens decreased the "window" where the pathogens that cause HIV and hepatitis C, present in small amounts, might not be detected by antibody or antigen tests. These tests have been used in a nation-wide research protocol for the past couple of years. The first NAT tests for HIV and HCV were approved by the FDA earlier this year.

The cost of NAT testing is quite high. Where most antigen or antibody tests cost roughly a dollar per test, NAT for hepatitis C will cost approximately $10 per test. This is partially because the test is more labor and machine intensive, but mainly because the hepatitis C genome is proprietary property and carries a substantial royalty fee paid to the discovering biotech company. The process used to perform NAT (called PCR or polymerese chain reaction) is also under a royalty. Stanford Blood Center pays well over $100,000 each year to use PCR technology.

The advent of NAT opens the door for additional tests. DNA/RNA probes are available to screen the blood supply for hepatitis A and parvovirus, another blood borne disease. Theoretically, probes can be developed for any virus or bacteria.

In addition to the dramatic rise in costs to test donated blood, there are also technologies available now or in rapid development that add safety, and cost, to the production of blood products for transfusion.

Currently in use, leukoreduction is a technology that vastly reduces the number of white blood cells (WBC) in blood products mainly through a filter device. In theory, eliminating most of the white cells will reduce patient reactions to the donor's unique biology represented in her/his WBCs. There is good evidence that filtering out WBCs reduces the possibility of transmitting some white-cell associated pathogens, like cytomegalovirus. Right now, approximately 50 percent of U.S. red blood cells are filtered to remove white cells. Leukofiltration adds about $35 to the cost of a unit of red cells.

Pathogen inactivation, perhaps the ultimate blood safety technology, is on the near horizon. Using photoactive chemicals, many viruses and bacteria can be prevented from replicating, vastly reducing their ability to cause disease. Pathogen inactivation technology may be available some time this year, and will be licensed first for use in platelet apheresis products. Sounds great? It does, but it is estimated that the process will add somewhere between $100 and $250 per unit of platelets.

On the donor side, because of increased deferrals for travel to the British Isles and parts of Europe to safeguard the U.S. blood supply from variant Creutzfeld Jacob Disease (vCJD), commonly referred to as "Mad Cow Disease," the number of dollars allocated for recruiting new donors has risen as well.

All of this bodes ill for the hospitals we serve. Prices for blood products to hospitals have risen 25 to 30 percent in just three years. Reimbursement from State and Federal programs, as well as private insurers and HMOs, have not kept pace. Hospitals are struggling to find ways to cover the cost of increasingly safer, but increasingly more expensive, blood products.

Technology is great, but who's going to pay for it?

THE BUILDING BLOCKS OF THE GIFT OF LIFE CONT. FROM PAGE 2

donor helps not one, but up to three patients.

The components lab uses a centrifuge to separate whole blood into its constituent parts. When the centrifuge spins blood, the denser red blood cells settle on the bottom, leaving the plasma on top. A plasma expresser pushes the plasma out of the bag through a tube and into a new bag. Finally, the centrifuge respins the plasma to allow platelets to settle.

Once the components are isolated, they must be stored under specific conditions to preserve the viability of the cells. Platelets are constantly kept moving at room temperature. Agitation is to ensure exposure to nutrients. With a shelf life of only five days, platelets are always in demand. Plasma can last for one year when it is stored in the freezer at –30 degrees Celsius. Plasma comprises 55 percent of the blood volume and transports blood cells, nutrients, antibodies, and clotting proteins. Because red blood cells transport oxygen, they are needed most urgently. Kept refrigerated, red blood cells can last for 42 days.

Separation and testing activities run parallel, but until disease and antibody test results return from the processing lab, blood is put on hold. Work in the components lab would be futile without the disease and antibody tests that occur in the processing lab. Blood can only be a gift of life when it is compatible with the patient and free of diseases. The Stanford Medical School Blood Center ensures that blood donors' life-saving gift safely reaches patients. Thanks to the generosity of donors, the innovation of scientists, and the involvement of technicians and management, we can transfer this precious resource. Transfusion proves that ordinary people can do extraordinary things.

Stanford Students Save Lives

By Melisa Shah, Stanford Student with the Community Service Writing Program

In addition to being conveniently located across from Stanford Hospital, the Stanford Blood Center regularly conducts blood drives out in the community to meet the local demands for blood. In fact, 55 percent of the total blood supply comes from blood drives. These drives, which can make giving blood more convenient, are held daily at various companies, schools, or public events. Monica Doleshel, a blood drive recruiter, books drives several months in advance and sets a specific goal for each drive. If the expected number of units is not met, blood shortages can result, ultimately harming patients.

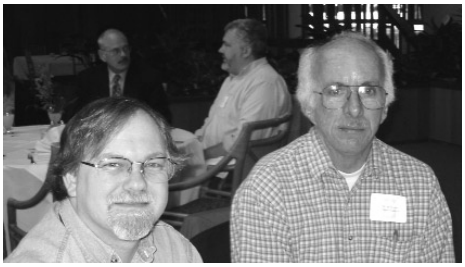
Because an adequate blood supply is so important, Doleshel, along with the other recruiters, strive to ensure successful blood drives. For the Stern Hall Blood Drive at Stanford University on November 5, 2001, Doleshel worked with student coordinators from the six dorms in Stern Hall to advertise and increase awareness about giving blood. For college drives, the cooperation of the recruiter, resident assistants, and student coordinators is essential. Kenny Gundle, the student coordinator from Larkin, walked door to door asking people to sign up for appointments and reminding them that "giving blood saves lives." This type of active enthusiasm allowed Kenny to book the most appointments.

The number of people willing to donate increased immediately after the terrorist attacks on September 11, 2001. While the attacks increased awareness about giving blood, it is important to donate blood regularly as emergencies occur all the time. During the summer months, when vacation-related accidents increase, and during the winter flu season, blood demand increases. Britter Gundersen, a resident of Stern Hall, tried to give blood on September 11th, but due to the influx of donors, she was advised to return within the following weeks. The timing of the Stern Hall Blood Drive was optimal for Gunderson.

After giving blood, she commented that the experience was "uplifting" because she was "helping actual people in need." In fact, the quality of life of approximately165 patients in the community was improved as a result of the 59 units collected at the Stern Hall Blood Drive. Each individual donation is separated into blood components (platelets, packed cells, plasma, cryoprecipitate) and can benefit more than just one patient.

While participation in the Stern Hall Blood Drive was high, the number of deferrals was also very high. Of 99 participants, 40 were deferred for several reasons, with iron deficiency being most prominent. According to Doleshel, college drives generally have more deferrals due to poor diets of the students, leading to low iron levels. To reduce the number of iron deferrals, Gundle educated the dorm about symptoms of iron deficiency and listed foods high in iron. The enthusiastic student coordinators and the caring blood collection staff helped Monica Doleshel make the Stern Blood drive successful, informative, and uplifting for many people. Monica encourages all students to become "regular blood donors, and support their dorm blood drives." For more information about blood drives, or to set up an appointment at a community blood drive, go to http://bloodcenter.stanford.edu and click on **Donate**, then **Blood Drives**.

Arm Chair Angels



Coordinators Celebrate!

By Jennifer Reczkowski, Center Recruitment Consultant

On Thursday, April 18, 2002, Stanford Blood Center held its Blood Drive Coordinator's Breakfast. This event, held at the Decathlon Club in Santa Clara, honored the dedicated individuals at organizations throughout the Bay Area that hold blood drives with Stanford. Volunteers, staff, and coordinators enjoyed a scrumptious buffet and listened to a presentation from Projects Director, Patricia Stayner, RN. The topic of the talk was new regulations put forth by the FDA regarding vCJD, or, "Mad Cow Disease." Patricia emphasized the importance of communicating with mobile blood donors, and encouraging continued donations as long as people are eligible.

Each coordinator received a tote bag, T-shirt, certificate of appreciation, and a copy of our San Jose Mercury ad. The ad ran in April, listing each corporation and organization that held blood drives with Stanford Blood Center within the past year. This is one way we like to thank our coordinators and host organizations for saving lives through blood drives.

A Moment In History

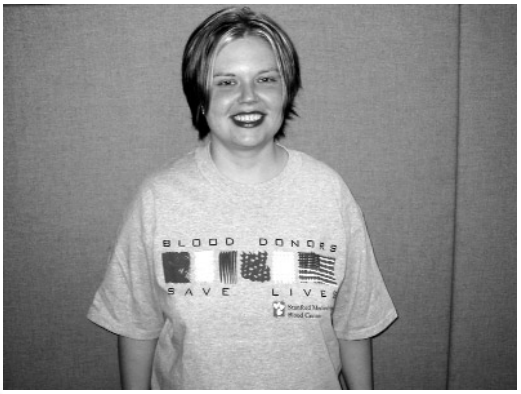
1907 *Hektoen suggests that the safety of transfusion might be improved by crossmatching blood between donors and patients to exclude incompatible mixtures. Reuben Ottenberg performs the first blood transfusion using blood typing and crossmatching in New York. Ottenberg also observed the mendelian inheritance of blood groups and recognized the "universal" utility of group O donors.*

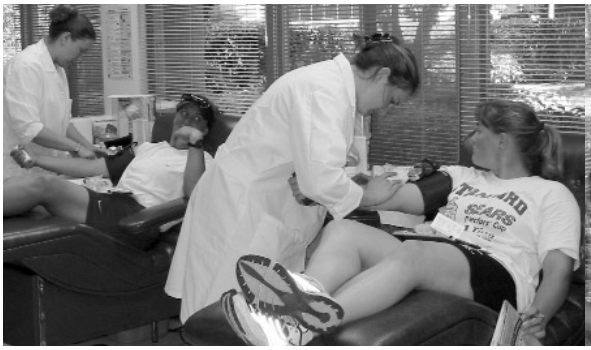
(SOURCE: AMERICAN ASSOCIATION OF BLOOD BANKS/WWW.AABB.ORG)

T-Shirt Giveaway

Every donor who comes into our Palo Alto or Mountain View centers Monday, August 26 through Saturday, September 7 will receive a special American Flag edition T-shirt in appreciation for donating near the Labor Day holiday weekend.

Call 1-888-723-7831 to schedule an appointment!





Stanford Softball Team Swings By

The Stanford Women's Softball Team donates regularly at the Palo Alto Center. Coach Lonnie Alameda organizes a time when they can donate as a group. This summer, because they're affiliated with Stanford, they'll have earned their Crimson Donor Program T-shirt for donating three times in a year. If you would like to bring your small group to the Center, contact Jennifer Reczkowski at (650) 724-7187 or czks@stanford.edu.

Palo Alto Seventh Graders Show Their Stuff!

By Lisa Kohara, Donor Recruitment Consultant

Seventh graders from Jane Lathrop Stanford (JLS) Middle School learned how to give something back to the community, by volunteering at the school's yearly blood drive. After completing a classroom unit about blood and blood donation, students recruited parents, neighbors and JLS faculty to participate in the drive.

Volunteer Spotlight: Bev Pellizzari

By Tessa Moore, Volunteer Services Manager

Every month I get a message about mobile blood drives from Bev saying "send me wherever you need me, but remember I can't work the last Tuesday of the month." That's reserved for lunch at Shoreline Park with friends from her Palo Alto High School days. The only other thing that sometimes stops Bev from helping at a mobile is spending the day with her two year-old great grandson.

Bev grew up and raised her own family here. Much of the family is still in the area and she loves spending time with them. Her family has been in the concrete business for four generations and her son now runs the business.

Bev worked at Hewlett Packard for 23 years and used to donate at blood drives there; she still does apheresis when she can. She found donating blood a positive experience so turned to SMSBC when she was looking for volunteer work. Bev started volunteering

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VOLUNTEER SPOTLIGHT CONT. FROM PAGE 7

in December 1999, and has already given over 2000 hours of her time!

"I love the donors," says Bev, "and the staff here are very easy to work with. It's a real team effort." Three or four times a week Bev is a part of the team effort that it takes to run a successful mobile blood drive. Wherever the mobile and however long it is, there's a good chance Bev is watching over our donors in the canteen. "Bev is a delight to work with," said Charge Nurse Mary Jo Jones. "She is a real people person, and very sensitive to how people are feeling and what their needs are. She always goes the extra mile to help out, and I love her sense of humor." Bev also helps train new volunteers before they do a mobile on their own. "She is terrific at training new people," says Mary Jo.

One of Bev's great strengths is working with young people, so she is frequently at the High School mobiles. "We learn things from kids that we wouldn't see otherwise," she says. This was especially evident on her trip last year to Baja, Mexico with a group of teachers and students to help study the turtles there. That's the sort of person Bev is – she's on vacation, but still helping others.

Thank you Bev! We are lucky to have you as a part of the SMSBC team!

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

ANDRONICO'S, LOS ALTOS

BETTER BAGELS, MOUNTAIN VIEW

HOBEE'S, PALO ALTO

JJ & F, PALO ALTO

NOAH'S BAGELS STAFF, PALO ALTO

PAM & VICTOR NOMURA

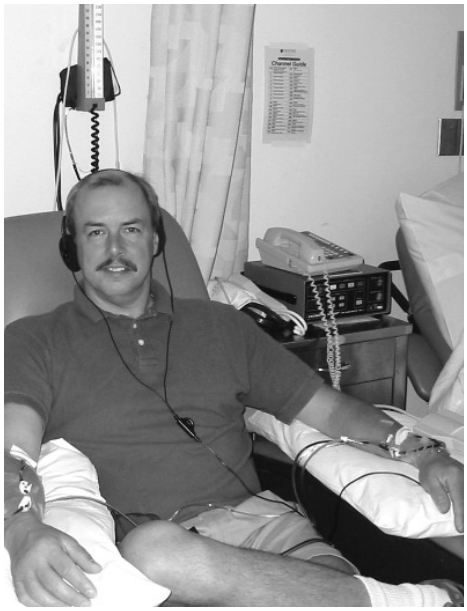
SIGONA'S, STANFORD SHOPPING CENTER

STANFORD FLORAL DESIGN, PALO ALTO

Jim's Story

By Natalie Schwartz, Stanford Student with the Community Service Writing Program

One Spring evening in 1993, Jim watched as a bone marrow donor and patient were united on a television talk show. Witnessing the magic of these two people uniting and hearing how easy it had been for this man to save another person's life immediately sparked Jim's interest. He decided right then that he would register with the National Marrow Donor Program (NMDP). After learning about the process and the possibility of saving someone's life, Jim reflected, "It just became something I had to do." He found the Stanford Blood Center and spoke with Diane Hill, Bone Marrow Donor Coordinator, about marrow donation. Jim provided a small blood sample, and his information was placed on the NMDP registry.



JIM VANDERMAAS

Jim felt moved by the miracle that marrow donation could be for many patients who were very near death; yet, he was distressed by the lack of registered donors and knowledge about the process. He wanted to spread the message to a wider audience. "Once I found out how easy it was to register and donate, I got all fired up and wanted to get other people enthused about it." And he did! He formulated the brilliant idea of having an event uniting a donor and successful patient at a San Francisco Giants baseball game. After several months of hard work and organization, Jim was at home plate with thousands of baseball fans watching him introduce a young girl in remission from leukemia, whose life had been saved by the selfless donation of a marrow donor. In addition to the presentation, Jim organized the distribution of flyers and the set up of information booths at the stadium. KTVU-TV and KRON-TV both aired news spots on the event and news anchor Leslie Griffith did an interview with Jim, the girl and her donor. The event was a great success in increasing awareness and "a lot of fun!"

Years went by after the event, and Jim kept in contact

with the Blood Center. He continued to try to motivate his colleagues at the Redwood City Police Department and fellow citizens of his hometown to register in the NMDP. In early February of 2001, Jim received an excited call from Diane Hill saying that he was a potential match for a patient in the end stages of Non-Hodgkin's Lymphoma. Jim was one of two possible donors: the other was initially preferred because of his youth, but for some reason he was not able to follow through with the process. The first week of May, Diane called Jim to notify him that he was indeed 'the one' for the donation, and that time was of the essence. The donation date was set for the first week in June, and Jim rushed to have a complete physical, several blood tests and two blood donations over the course of the next several weeks. Near the end of May, he was informed that due to a change in the patient's condition, the surgery was postponed until June 12th.

Jim elected to have the bone marrow extraction under spinal block anesthesia. The surgery took less than two hours, during which several needles were inserted into his pelvic bone to extract marrow stem cells. After the procedure, Jim was taken to recovery where he began walking within several hours. He was able to return home the same day, describing his lower back pain as having been "kicked in the back by a horse." The discomfort was relatively short-lived, and he was back at work within three days, with only occasional and positional pain. Jim asserted that the pain was short lived and insignificant when measured against the potential good that comes of donating marrow.

Understanding that he was responsible for saving someone in a critical life or death situation gave Jim great satisfaction. Privacy regulations allowed Jim to know only that the patient was a 46-year-old man with a wife and children. After the donation, Jim was periodically informed of how the patient was doing. He found great pleasure in learning that his marrow engrafted (the process in which the body accepts the new stem cells as its own) successfully. Several months after his donation, Jim learned that the patient was having difficulty producing enough stem cells on his own, so Jim underwent an apheresis procedure to extract additional stem cells. This is a process in which blood is drawn from one arm and passed through a blood cell separator which collects the stem cells. The donor's red cells, most of the platelets and plasma, are returned through the other arm. These apheresis donations gave the patient a 'booster shot' of stem cells. The ultimate gratification came when Jim was informed in December, only six months after the original transplant, that the recipient was back at home and had returned to work! Jim had given this man his life back. When asked whether he would do it all over again, he enthusiastically replied, "Without a doubt."

Jim and his marrow recipient will have the opportunity to meet each other this June, a year from the donation, if both parties agree. Jim reflects on the process, "I think it is really neat that I have a real blood brother now." As he waits to see whether he'll have the opportunity to meet this blood brother or perhaps to give another donation that may help to save someone else, Jim hopes that others will recognize how easy it is to register as a potential marrow donor, donate marrow and possibly save a life. As he said when introducing the donor and recipient at Giants stadium, "There is a tie that binds us all as people of this planet, and it's not just biological. It's our compassion for each other. People need to be aware of how easy it is to give the gift of life."

Another Way To Save A Life…Contact Stanford Blood Center's Marrow Donor Coordinator, Diane Hill, 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 email to Diane.Hill@Stanford.edu.

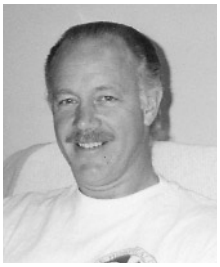
A Moment In History

1939/40 *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)

Apheresis

The Blue Platelet Special



Q&A with John Vonhof, Apheresis Donor

>> When did you start donating blood?
I started at Stanford in December 1988 after reading an article in Reader's Digest about a little girl who had received a bone marrow donation. The article mentioned apheresis and its role in matching donors to those needing both blood products and bone marrow. Diane Hill signed me up that first time, and I value her friendship. Before Stanford, I had donated a total of eight gallons of whole blood at three other blood banks. Stanford became my apheresis home.

>> Why did you pick Stanford as a place to donate?
Stanford was very proactive with its donors and allowed us to make our appointments ahead. They encouraged frequent donations whereas other blood banks told me their donors could donate only every month or two.

>> What got you interested in apheresis donation?
After years of donating whole blood, apheresis was the next logical step. I am a very dedicated donor and as is typical with my life, I go all the way. I value my donations and how they help others. I want to get the most miles out of my body and donating steadily, twice a month, is one way of doing that. Being blessed with good health makes me all the more dedicated to make the most of my life. I had one year when because of a needle stick at the hospital where I work, I could not donate. That was a very long year. After donating twice a month for 11 years, not being able to donate that year was hard. I missed the camaraderie at Stanford. Following that year off, I came right back full strength--again twice a month.

I remember when I went for a pre-employment physical being asked, "Do you use?" (Referring to drug use!) My track-marked arms bore testament to my donations. And that was six years ago. Now, six years and another 18 gallons later, I wear my track marks with pride.

>> You've recently moved away from the Bay Area. What do you miss about Stanford now that you've moved?
I miss two things. First and foremost are the close friendships I have made over the past 14 years. Secondly, I miss the proactive approach of Stanford. Moving to a new blood bank is hard. It is like starting over at "one." Last year, right before moving, I reached my goal--300 pints donated at Stanford! Stanford will always hold a special place in my heart.

**John Vonhof is one of SMSBC's Platinum (300+) donors.*

Apheresis: Big Word, Bigger Gift

By Mars Mallari, Apheresis Supervisor

What is apheresis? Apheresis comes from the Greek root word *aph* meaning "separate." Pronounced ay-fer-ee-sis, it is a procedure that removes blood from a donor, separates the blood into its components, then retains the needed component, returning the remainder of the blood to the donor.

Apheresis is used to collect plasma and platelets, referred to as plasmapheresis and plateletpheresis. Platelets are used for a variety of medical conditions from heart surgeries to thrombocytopenias resulting from chemotherapy. Platelets from apheresis are very special as they decrease the patients' exposure to multiple antigens that can result from using the equivalent of six to 10 units of platelets derived from whole blood. Apheresis also gives the added benefit of being able to match donors and patients by HLA (human leukocyte antigen) type, as all Stanford apheresis donors' HLA types are on file at the Blood Center.

Apheresis donors must meet the same requirements for donations as do whole blood donors. All apheresis components must be ABO and Rh grouped and screened for antibodies and transmissible diseases.

Here at Stanford Medical School Blood Center, we perform apheresis procedures using two technologies. The Baxter Amicus and the Cobe Trima both use continuous flow centrifugation. Both are very efficient in collecting platelets, although the Trima has the added capability of collecting red blood cells. The Amicus is mostly designated for donors with smaller veins and who use both arms for the collection. Both machines use sterile, single-use-only kits. The procedure takes an average of one hour, which gives the donor time to watch a movie from our video library. Others pass

the time listening to the radio or CDs, reading a book or just talking to the staff or other donors.

The apheresis procedure is a safe and special way to donate, and we encourage all interested donors to contact the Blood Center and "Ask About Apheresis."

Those Pesky Reminders

By Mike Sage, Telerecruitment Supervisor

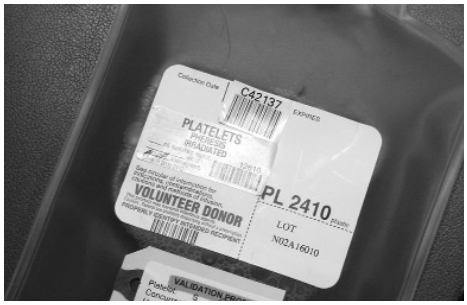
I have to admit that the correlation between my increasing age and decreasing memory is much more reality than myth. It is because of this "normal" fact of life that I really don't mind getting reminder calls for the various appointments that life presents. I would most likely get little done without them. Hopefully, our donors feel the same way, especially our apheresis donors.

Reminding apheresis donors of their appointment times can be a tedious, time consuming and repetitious task at times but goes a long way in fulfilling the commitment we have to the hospitals we serve. Before reminder calls were established we could count on a "no-show" rate of approximately 20 to 25 percent. Since reminder calls were instituted, that rate is consistently down to about five percent.

The reason for reminders is simple: platelet usage is almost impossible to forecast. Usage tends to be all over the map with a daily average anywhere between 10 to 25 units. More importantly, platelets only remain viable for five days after collection, making inventory management an art, let alone a challenge.

Unfortunately, there are many other reasons why donors are not able to keep their appointments. Most of the reasons fall around what we call "life happens." The sooner a donor can let us know that they'll have to reschedule (we prefer this term versus cancel), the better chance we have of replacing them with another donor.

So, the next time you receive that pesky reminder call from us, know that you are providing an invaluable service to patients as well as helping our Appointment Office fulfill its main goal – Saving Lives!



The "V" Word—Validation

By Patricia Stayner, RN, Projects Director

Many of you may have noticed your apheresis components specially tagged on one appointment or another, watched as the apheresis staff diligently weighed, documented and hand-carried those tagged components to the laboratory, or may have met Baxter or Gambro technical consultants monitoring apheresis machines in the donor area. What's all the fuss about? Validation, fondly known by our staff as "the V word."

According to the American Association of Blood Banks, validation is "establishing recorded evidence that provides a high degree of assurance that a specific process will consistently produce an outcome meeting its predetermined specifications and quality attributes." Whew. Or, as Quality Assurance people like to say, "Say what you do. Do what you say. Prove you did it. Prove it works. Monitor the results." In apheresis, when we introduce a new machine, add a new blood component, upgrade the software on existing machines, or repair a major part, we must validate to make sure our standard operating procedures still work, that the machine performs like we expect it to (or like the manufacturer says it will), and especially that the blood components collected on the new or repaired machine meet the quality standards required for transfusion to patients.

If your platelet, plasma or red cell donation is tagged as a "Validation Product," it will be subjected to more than the usual quality and infectious disease tests. Because of the intensive testing and planning that goes into a validation, all validation products are fully expected to be released for patients. In fact, if a validation will require us to collect apheresis components that must be tested after they expire, we recruit research donors (previous apheresis donors who are temporarily deferred for such things as travel or medications) to give the validation products.

A Moment In History

1795 *In Philadelphia, American physician Philip Syng Physick, performs the first human blood transfusion, although he does not publish this information.*

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

Go With The Flow

By Charles Kou, Stanford Student with the Community Service Writing Program

The Flow Cytometry Lab is an important part of the Stanford Medical School Blood Center (SMSBC) because it benefits blood donors, hospital patients and researchers in a number of ways. It ensures the quality of the blood given by donors, diagnoses blood diseases and disorders, and provides medical data for researchers. SMSBC integrates research programs, which benefit the patients by allowing immediate application of the medical advances made by Stanford researchers.

What Is Flow Cytometry?

Flow cytometry emerged in 1972, when Dr. Len Herzenberg's group at Stanford University did pioneering work on the fluorescence activated cell sorter (FACS). Since then, the technology of flow cytometry has evolved and has served the medical, academic and research communities. In brief, flow cytometry identifies and enumerates different types of cells in the blood by measuring the fluorescent marker that uniquely identifies each cell. First, sample cells are marked using target-specific fluorescent dye molecules, which uniquely identify the different cell types. Next, a laser beam activates the fluorescent dyes on the cells. Each fluorescent marked cell emits a unique signal that is picked up by the optical elements of the machine, which sends the signals to the computer for analysis. The computer then determines the exact number of cells and the exact composition of the blood.

"A little kindness from person to person is better than a vast love for all humankind."

—RICHARD DEHMEL

What Are The Uses Of Flow Cytometry?

Flow cytometry is used to evaluate the quality of the blood given by the donor to ensure that it is safe for transfusion. Some patients receiving transfusions are negatively affected by the presence of specific white blood cells. Patients may be infected by viruses carried on white blood cells, or their immune system might reject the blood from the transfusion as foreign. Therefore, blood given to these patients is filtered and centrifuged to remove the white blood cells. As a final step, flow cytometry determines whether the white blood cells are completely removed.

In addition to its role in evaluating the quality of blood, flow cytometry is also used as a diagnostic tool. Flow cytometry analyzes the blood sample drawn from the patient and provides important data for the physicians treating recurrent chronic infections. For instance, flow cytometry can analyze the number of T-cells in the blood sample of an HIV patient and predict whether the patient will get sick in the future.

The flow cytometry lab also provides an important service to the research community. The researchers at SMSBC can utilize the lab to collect data on the composition of blood, and the DNA content of the cells.

Helping With Histocompatibility

By Rich Sherwood, Stanford Student with the Community Service Writing Program

Did you know that your blood donation to the Stanford Blood Center could help a patient in need of an organ transplant undergo a safer transplant and recover more quickly? Were you aware that the same building that supplies Stanford Hospital with all its blood also matches all of its prospective organ transplant recipients with compatible donors? These and more services are provided by the Center's Histocompatibility Laboratory.

Histocompatibility refers to the matching of a donor and recipient for transplantation so that the transplanted organ is not rejected. In practice, this requires testing donors and recipients for a slew of histocompatibility antigens, proteins expressed on all cells of a person. Differences in these antigens predict the success of a prospective organ transplant since an incompatible transplant can lead to transplant rejection. Another complication of histocompatibility mismatch is referred to as Graft versus Host Disease (GVHD), in which donor immune cells attack recipient tissue and cause immune flare-up and organ failure. Histocompatibility is vital to the success of transplantation.

The Stanford Blood Center Histocompatibility Laboratory, headed by Dr. Carl Grumet, performs histocompatibility testing for all types of organ transplants, including bone marrow transplants, at Stanford Hospital and other local community service agencies. Additionally, the laboratory performs research to enhance donor-recipient matching and to improve recipients' tolerance of an organ transplant.

In its clinical role, the Stanford Blood Center processes all prospective organ transplants at Stanford Hospital, matching the donor with a compatible recipient by testing for serum antibodies and for Human Leukocyte Antigen (HLA) compatibility. The serum antibody tests identify when a recipient has been presensitized to a specific antigen and thus possesses antibodies to this antigen in his/her blood, which would result in rejection of the transplant. For example, if a recipient has already received an organ transplant, he/she may develop antibodies to this foreign tissue that will immediately attack any similar organ that is introduced, endangering the transplant. The major determining factor for histocompatibility is the HLA proteins located on white blood cells that, in a process similar to blood typing, provide a reliable predictor for transplant success. DNA tests can also predict transplant success, as a recipient will be much less likely to reject a transplant if he/she and the donor's histocompatibility genes have similar DNA sequences.

The Stanford Blood Center, in addition to its demanding clinical responsibility, also researches histocompatibility to help future transplant efficacy. Transplants are tracked to assess whether the donor and recipient were compatible enough to allow a successful transplant. For example, after bone marrow transplants, the Blood Center determines how much of the recipient's blood is composed of donor cells, thus ensuring that the amount of transplantation done was adequate. In addition, the Center recently published a study proving that transplanting a small amount of donor bone marrow before organ donation drastically improved transplant acceptance, a surprising and valuable result.

The Center also uses samples from blood donations to facilitate histocompatibility research. Donor blood is scanned for new histocompatibility antigens and for statistical analysis on the frequency of certain forms of antigens. In a recent report, the Center identified a molecule, CD31, previously thought unrelated to histocompatibility. In HLA-identical sibling bone marrow transplants, outcomes were significantly improved when donor and recipient were CD31 identical compared to those who were not.

Additionally, blood donors are key to finding matches for those in need of a bone marrow transplant. Donor bone marrow, if not nearly identical, will cause GVHD, so bone marrow matching is very precise: the chances that a donor's bone marrow will match a recipient's is one in 100,000-1,000,000 for an unrelated donor and one in four for a sibling. Thus, a national database of bone marrow donors who will volunteer if their marrow matches that of a patient in need of a transplant was established in 1986, a database that blood donors can choose to join.

The Stanford Blood Center's Histocompatibility Laboratory is vital to Stanford Hospital for its matching of organ and bone marrow transplants and also contributes extensively to histocompatibility research.

Turn to page 8 to learn more about the National Marrow Donor Program (NMDP).

Fun Stuff

Vampire Bites

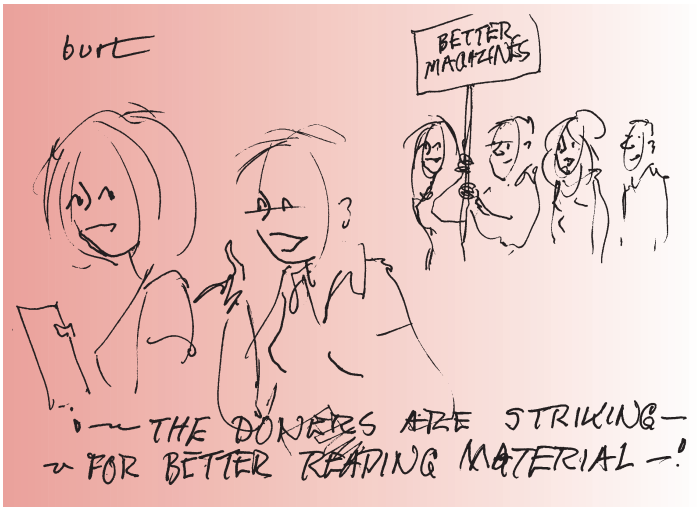
COURTESY: BURTON DUPREE, STANFORD BLOOD CENTER DONOR

Calling All You Creative Cats...

Are you a great cook, cool cartoonist, or wacky wordsmith? We could use your talents in our next newsletter. Help donors boost their hemoglobin levels by sending in a healthy recipe that is loaded with iron. Draw a funny cartoon about the Blood Center. Put your wit to the test with a poem.

Or come up with your own way to entertain us. The sky's the limit. Send your fun stuff to:

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



COURTESY: BURTON DUPREE, STANFORD BLOOD CENTER DONOR

BE A DONOR

A pint of blood is all it takes
To save a life, for goodness sakes.
So hurry down to the Medical School
And join the donors growing pool.
It doesn't hurt, it's not a chore
So what on earth are you waiting for?
GIVE BLOOD

By Mel Hirsekorn, Stanford Blood Center Donor

oldies 99.7fm KFRC .com

Palo Alto Weekly

Stanford Medical School Blood Center

O!

What a Party!

Thursday, August 15
7:30 am – 7:30 pm
Stanford Blood Center
800 Welch Road
Palo Alto
Photo ID required

PARTY WITH KFRC AT THIS ALL-DAY "O" DRIVE!

Enjoy O Foods, O Prizes, and
Donate Type O Blood!
(non O-type friends invited, too!)
Party shirts for everyone!

For appointments call (650) 723-7831

Sponsored by
KFRC-AM/FM and the Palo Alto Weekly

Vampire Vittles

This is a hearty summer salad that's loaded with iron. It's great to take on a picnic or just enjoy on a warm summer night.

Steak And Roasted Vegetable Salad

Total Preparation and Cooking Time: 45 minutes

1	pound boneless beef top loin steaks, cut 1-inch thick
	olive oil-flavored vegetable cooking spray
1	medium zucchini, cut diagonally into 1-inch pieces
1	medium Japanese or baby eggplant, cut diagonally into 1-inch pieces
1	large red, yellow, or green bell pepper, cut into 1-inch strips
1	medium onion, cut into 1-inch wedges
16	small mushrooms
1/4	teaspoon salt
8	cups torn mixed salad greens
3/4	cup nonfat Italian dressing

SEASONING

2	tablespoons balsamic vinegar
2	large cloves garlic, crushed
1	teaspoon dried rosemary leaves, crushed
1/4	teaspoon pepper

Heat oven to 425° F. Lightly spray 15-x 10-inch jellyroll pan with cooking spray. Place vegetables in pan. Generously spray vegetables with cooking spray. Combine seasoning ingredients, drizzle over vegetables. Roast in 425° F oven 30 to 35 minutes or until tender, stirring once.

Meanwhile, heat large nonstick skillet over medium heat until hot. Place beef steaks in skillet; cook 12 to 15 minutes for medium rare to medium doneness, turning once. Let stand 10 minutes.

Season steaks with salt. Trim fat from steaks; carve crosswise into thin slices. To serve, place an equal amount of salad greens on each of four dinner plates. Arrange beef and roasted vegetables over salad greens. Serve immediately with dressing.

NUTRITION INFORMATION FOR ONE SERVING: 258 CALORIES; 27 G PROTEIN; 18 G CARBOHYDRATE; 9 G FAT; 652 MG SODIUM; 65 MG CHOLESTEROL; 4 MG IRON.

Makes 4 servings.

RECIPE COURTESY OF NATIONAL CATTLEMEN'S BEEF ASSOCIATION AND THE BEEF BOARD. WWW.BEEF.ORG

Scarlet Letters

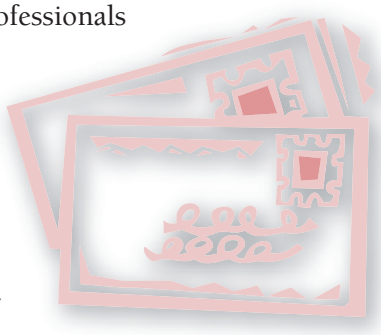
Letters to the editor:
We Want To Hear From You!

Share your thoughts, feelings and stories about the Stanford Blood Center, or let us know about an experience that you've had with us. Donors, volunteers, staff and friends of the Blood Center are invited to write letters that may be published in our next newsletter. This is a special section in the publication that will give YOU a voice. Did someone treat you with extra care? Do you have a question, comment or maybe just a fun anecdote? Please share it with us! Send letters to:

STANFORD BLOOD CENTER
ATTENTION: NEWSLETTER
800 WELCH ROAD
PALO ALTO, CA 94304
OR EMAIL THEM TO: MGASSAWAY@STANFORD.EDU

Please limit letters to no more than 300 words. Letters may be edited.

I have been an avid blood donor since 1958 when I began donating at another blood bank in north San Mateo County. All the people at Stanford Blood Center, including the Mountain View substation, are the best professionals that I have ever encountered. I always thought that I was unique in that I have, to date, donated a total of 245 times between both blood banks. I, however, was surprised to read in your publication that there were five donors that have exceeded the 300th donation. Maybe someday I will accomplish that feat. Thank you for the wonderful publication.



Sincerely,
Anthony Cidonio

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

Anthony Cidonio,
Stanford Blood Center Donor
Burton Dupree,
Stanford Blood Center Donor
Susan A. Galel, MD,
Associate Medical Director
Michele Gassaway,
Community & Media
Relations Coordinator
Mel Hirsekorn,
Stanford Blood Center Donor
Lisa Kohara,
Donor Recruitment Consultant
Charles Kou,
Stanford Student with the
Community Service Writing Program
Mars Mallari,
Apheresis Supervisor
Tessa Moore,
Volunteer Services Manager
Jennifer Reczkowski,
Center Recruitment Consultant
Mike Sage,
Telerecruitment Supervisor
Natalie Schwartz,
Stanford Student with the
Community Service Writing Program
Melisa Shah,
Stanford Student with the
Community Service Writing Program
Rich Sherwood,
Stanford Student with the
Community Service Writing Program
Lisa Singer,
Stanford Student with the
Community Service Writing Program
Patricia Stayner,
RN, Projects Director
John Vonhof,
Stanford Blood Center Apheresis Donor
Vince Yalon,
Administrator of the Stanford Blood Center

Thank You!

STANFORD BLOOD CENTER
800 WELCH ROAD
PALO ALTO, CA 94304

STANFORD BLOOD CENTER OF
MOUNTAIN VIEW
515 SOUTH DRIVE, SUITE 20
MOUNTAIN VIEW, CA 94040

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

STANFORD BLOOD CENTER DONOR HOURS

WHOLE BLOOD DONATIONS –
Palo Alto Center

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

(*open 1st & 3rd Saturday s only)

WHOLE BLOOD DONATIONS –
Mountain View Center

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*

(*open every Saturday)

APHERESIS DONATIONS –
Palo Alto

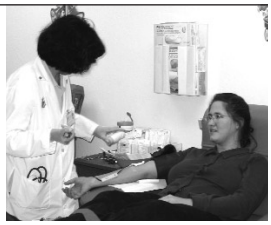
Monday	12:30 pm	–	6:30 pm
Tuesday	12:30 pm	–	6:30 pm
Wednesday	7:00 am	–	1:00 pm
Thursday	12:30 pm	–	6:30 pm
Friday	7:00 am	–	1:00 pm
Saturday	7:00 am	–	1:00 pm

APHERESIS DONATIONS –
Mountain View

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

PALO ALTO AND MOUNTAIN VIEW CENTERS CLOSED SUNDAYS AND HOLIDAYS.

OUR NEWSLETTER NAMING CONTEST WINNER, CHERYL FISHER OF SANTA CLARA, CELEBRATES WITH HER DAUGHTERS AT A SMALL PARTY AFTER DONATING A PINT! "LIFE LINK" WAS HER WONDERFUL SUGGESTION.



LifeLink

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BLOOD CENTER

Stanford Blood Center
800 Welch Road
Palo Alto, CA 94304

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