USC surgeons perform world’s first living-related bloodless liver transplant

William Jennings, 44, a Jehovah’s Witness, has made medical history as the recipient of a living-related liver transplant done without the transfusion of blood or blood products. He received the right liver lobe from his brother, Scott Jennings, 40, and both have recovered well from the surgery.

Randy Henderson, coordinator of USC University Hospital's Transplant-Free Medicine program, said the June 15 operation was the first of its kind anywhere.

The donor was released from the hospital within a week of the operation — his brother a few weeks later. And both appeared before the media at USC University Hospital July 19 alongside hepatologist Jacob Korula and surgical team Rick Solby, Nicolas Jabbour and Yuri Geryk.

Jennings was suffering from primary sclerosing cholangitis — an acute problem associated with a narrowing and inflammation of the bile ducts. The decision to use the living-related option was based on the fact that his condition had not deteriorated to the extent that a cadaver liver would be offered him. On the other hand, if allowed to deteriorate to such an extent, successful transplantation cannot be performed on Jehovah’s Witness patients due to their belief in not transfusing blood products from one person to another. "The Bible commands us to abstain from blood. We take it quite literally," Jennings said. "It doesn’t say anything about organs."

Under these circumstances, the doctors decided to perform the transplant when William Jennings’ blood counts could still be enhanced. The only choice was to use a lobe of his brother’s liver as well as delicate surgical techniques that would prevent the loss of blood.

Since liver transplants often require multiple units of blood, plasma, and platelets, the operation is rare among Jehovah’s Witnesses. And the intricacy of living-related transplants makes them unheard of — until now.

The transplant operation lasted a marathon 14 hours because of the special circumstances surrounding the procedure. Although living transplants usually involve simultaneous operations on recipients and donors, the surgeons made the decision to operate on Jennings first — clamping off blood vessels and salvaging any spilled blood before removing the right half of Jennings’ liver. Because of that, the procedure took twice as long as the 6 or 7 hours liver transplants normally take. If William had started to bleed to death, “we would have allowed him to expire,” Jennings said. In that situation, there would have been no need to proceed with Scott’s surgery.

Fortunately, that didn’t happen, and the prognosis is excellent for both brothers.

“In the future as part of their over-all adult and pediatric living-related program in liver and kidney transplantation,” — Paul Dingsdale

Announcement of Keck gift sparks major media coverage

The July 29 announcement of the $110 million gift to the School of Medicine from the W.M. Keck Foundation received extensive local and national media coverage.

An article appeared in the July 29 Los Angeles Times, on the front page, “above the fold.”

Reporter Ken Weis noted that the grant is part of $1.5 billion that USC expects to be invested in the Health Sciences Campus over the next decade, including $818 million from Los Angeles County to replace the aging LAC+USC Medical Center.

The first $20 million from Keck will go toward building a $40 million research center in neurogenetics — “a hot field of study involving genomics and the workings of the human brain,” Weis wrote.

The article concluded by noting that USC President Steven B. Sample attributes his success to two things: “A huge run-up in the stock market, and the increasing attitude of a large number of people that it may not be in the best interest of their kids to leave them with too much money.”

The July 29 press conference for the official announcement was attended by NBC-4 news, KTLA-5 news, KABC-AM radio and KABC-TV, NBC-4 news radio, KNX-AM radio, the Los Angeles Times, and Good News LA.

“We think that Los Angeles needs to have world-class medical centers,” Robert A. Day, Keck’s grandson, who runs the foundation, told the assembled media.

Simon Ramo, a board member on the Keck Foundation, explained how he had pushed for a financial “booster rocket” to propel USC’s medical school to the top. The school, he said, impressed foundation members with its progress over recent years.

“We are going to build this new research building and fill it with some of the brightest minds in the world,” said President Sample.

“With this money, we’ll be able to pay them healthy salaries, pay their expenses and allow them to bring a couple of postdoc researchers with them,” he added.

Brian Henderson, director of the new Neurogenetics Institute, said the funds would help assemble a top-notch group of researchers to enhance USC’s reputation as a “first-rate medical school. We’re going to steal from the best.”

The Keck gift was also covered by National Public Radio’s “Morning Edition,” KFWB-AM news radio, KNX-AM radio and KROQ-FM radio.


— Paul Dingsdale
The best things in life—like research grants—are free to those who apply themselves.
Researcher seeks ways to alleviate complications of gestational diabetes

Thomas Buchanan is finding ways to help mothers and their children avoid the effects of a potentially deadly disease.

No, it’s not AIDS, and it’s not breast cancer. It’s gestational diabetes, and it strikes down more Americans a year than either of those two illnesses.

Buchanan, professor of medicine, obstetrics and gynecology and physiology and biophysics, has focused on diabetes—more specifically, diabetes in pregnancy—for more than 15 years.

Some women who get gestational diabetes—higher-than-normal blood sugar brought on by pregnancy—run into serious complications during childbirth. Buchanan’s group is suggesting a new strategy for finding out in advance which mothers are most likely to have those complications, and treat them appropriately to prevent problems.

“We’re getting more and more calls about the idea,” Buchanan said enthusiastically. “It’s a concept that’s catching on.”

When a woman develops higher-than-normal blood sugar during pregnancy, the sugar richly nourishes her fetus. That sounds good, but it isn’t.

“The worst complication is essentially the overfeeding of a baby,” Buchanan said. That means babies get fat in the womb, especially around their shoulders and abdomen, causing them to get stuck during childbirth. In turn, that raises the risks for birth trauma to the baby from 2-3 percent in a normal birth to 5-6 percent in a birth involving gestational diabetes.

Under the new strategy, Buchanan suggested, doctors would screen expectant moms for a higher likelihood of complications using two tools: blood sugar tests and ultrasound.

A woman with slightly higher-than-normal blood sugar could simply be monitored carefully by doctors and manage the diabetes nutritionally. A woman with very high blood sugar would be given insulin.

But women in between would get a second screening test. Around the 30th week of pregnancy, doctors would look at the size of a baby’s belly through ultrasound. If a baby’s size is below the 70th percentile for normal babies, the chance it’ll be too big at birth will be about nill,” Buchanan said. “But if it’s above the 70th percentile, then they’re in the at-risk category, and that gives us enough time to treat the mother with insulin before birth.”

Buchanan, who directs the General Clinical Research Center, hopes to pursue a multi-center trial to look at the relationship between blood sugar and the size of babies in the womb.

He also talked about predicting and preventing diabetes in mothers after they give birth, the topic of a current National Institutes of Health-funded study he’s working on with Kjos, Peters and Xiang.

Women who get diabetes during pregnancy often see it go away right after birth. But in a previous study by Buchanan and colleagues of Latina mothers with gestational diabetes, 50 percent of those moms developed type II diabetes (the prevalent form of the disease) by five years after having a baby—a much higher proportion than the rest of the population.

Buchanan is looking for the reasons why. “What we understand is these are women who have weak beta cells in the pancreas,” he said. Beta cells produce insulin, which helps blood sugar get into the body’s cells, where it’s needed.

“If the cells have to work hard, like in pregnancy, they appear to wear out faster than other people’s cells,” he said.

His lab is running a prevention trial using a drug meant to keep those beta cells from failing. Trial results are expected in December of next year. If the trial is successful, it will be possible for the first time to prevent diabetes in very high-risk women.

—Alicia Di Rado
Showcasing the best and brightest of the students and fellows conducting cancer research on the Health Sciences Campus, the Second Annual USC/Norris Comprehensive Cancer Center Grand Rounds & Poster Session was held on July 13.

The competition was sponsored by the Cancer Center Grand Rounds & Poster Session Steering Committee, which is made up of Master's, Ph.D., and M.D./Ph.D. students and Post-Doctoral Fellows working in laboratories affiliated with the Cancer Center; Raymond Mohler, associate professor biochemistry and molecular biology, acted as moderator.

The committee considered 47 abstracts for inclusion in the poster session. Of the students who put forth these submissions, 29 also competed to be a speaker at Grand Rounds. Four speakers and three posters were chosen by a panel of 13 volunteer judges, all of whom were members of the Steering Committee, said Isabel Mard, a graduate student member of that committee. The choice was based on the clarity, content, context, formatting, and verbal presentation of the research. The four Grand Rounds speakers chosen by the committee were:

- Postdoctoral student Sandra Johnson from the Department of Molecular Pharmacology, School of Pharmacy, for her presentation on “Regulation of the Human TATA-Binding Protein (TBP) Promoter by Hepatoblastoma B Virus (HBV) Protein X and Ras Cellular Signaling.”
- Ph.D. student Michelle Luo from the Department of Pathology, USC/Norris, for her presentation on “Minnblad Cycle Hormones After Growth and Signal Transduction in Benign Ovarian Epithelial Tumors.”
- Louis Dubeau, principle investigator
- Ph.D. student Chung Shum from the Department of Pathology, Children’s Hospital, Los Angeles, for his presentation on “Downstream Targets of the Ewing’s Sarcoma EWS-Flt-1 Fusion Gene.”
- Tim Tché Tché, principle investigator
- M.D./Ph.D. student Jinha Park from the Department of Pathology, USC/Norris, for his presentation on "HER-2/new Receptor Recruitment of Protein Tyrosine Phosphatase-1-D to Focal Contacts Leads to Loss of Integrin-Mediated Cell Adhesion."

HSC research awards for June 1999

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<tr>
<th>Principal Investigator(s)</th>
<th>Department</th>
<th>Sponsor</th>
<th>Title</th>
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<tr>
<td>Jonathan D. Buckley</td>
<td>Preventive Medicine</td>
<td>National Childhood Cancer Foundation</td>
<td>Plant Enzymes Effects on Cell Cycle Progression</td>
<td>$326,511</td>
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<tr>
<td>Enrique Calcedon</td>
<td>Pharmacy</td>
<td>U.S. Army Medical Research and Development Committee</td>
<td>Molecular/Cellular Pathways of Hader Cancer Progression</td>
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<td>Richard J. Cote</td>
<td>Pathology</td>
<td>National Cancer Institute</td>
<td>MEF and Related Proteins in AIDS-Related Kaposi Sarcoma</td>
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<tr>
<td>Periak S. Gill</td>
<td>Medicine</td>
<td>National Cancer Institute</td>
<td>Effect of Peame in Kaposi Sarcoma Cell Lines</td>
<td>$60,000</td>
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<td>Periak S. Gill</td>
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<td>Bolar Norton Pharmaceuticals, Inc.</td>
<td>Genetic Determinants of Aromatic Expression and Susceptibility</td>
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<td>Sue Ann Ingles</td>
<td>Preventive Medicine</td>
<td>U.S. Army Medical Research and Development Committee</td>
<td>Radiographic Density; Cancer Inheritance and Acquired Risk in Twins</td>
<td>$442,032</td>
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<tr>
<td>Thomas M. Mark, Gluck Ursin</td>
<td>Preventive Medicine</td>
<td>Regents</td>
<td>Antipsychotic Medications for Treating Patients with Schizophrenia in the California Medicaid</td>
<td>$139,681</td>
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<tr>
<td>Jeffrey S. McIntosh</td>
<td>Pharmacy</td>
<td>Eli Lilly &amp; Company</td>
<td>Antipsychotic Medications for Treating Patients with Schizophrenia in the California Medicaid</td>
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<td>Michael N. Nichol</td>
<td>Pharmacy</td>
<td>Allergen</td>
<td>1999 Allergen Summer Internship</td>
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<td>Andrew Stolz</td>
<td>Medicine</td>
<td>University of California, Davis</td>
<td>Molecular Epidemiology of 3a-HSD in Prostate Cancer</td>
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<td>Daniel O. Shroff</td>
<td>Preventive Medicine</td>
<td>Centers for Disease Control</td>
<td>Occupational Radiation and Energy-Related Health Research Grants</td>
<td>$165,357</td>
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<tr>
<td>J.P. Van Der Meulen, Thomas Buchanan, John T. Nicolle</td>
<td>Medicine</td>
<td>National Center for Research Resources</td>
<td>General Clinical Research Center</td>
<td>$30,602,098</td>
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<td>Anna H. Wu, Mimi Yu, Louis Dubeau</td>
<td>Preventive Medicine</td>
<td>Regents</td>
<td>Gene-Diet/Toxibio Interactions in Breast Cancer in Asians</td>
<td>$287,978</td>
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Remember this: volunteers sought for memory study

The Laboratory of Memory and Memory Disorders in the Department of Neurology seeks volunteers for a short-term study on the effects of estrogen therapy on learning and memory related to both normal aging and Alzheimer’s disease. Eligible participants must be English-speaking women between ages 50 and 84 who have gone through menopause. Potential participants are either in good health or have been diagnosed with mild to moderate Alzheimer’s disease. Participants also should have not used estrogen at least three months before the study enrollment. Study participants will get a free medical and gynecological exam before starting the study.

The deadline for submission of a proposal is August 20. Application forms may be obtained from the Office for Women, Keilh Administration building (KAM), Room 110F (442-2554) and from the Norris Medical library. MFRA Reserve Box #62. 

Etcetera

The USC Medical Faculty Women's Association Research Fund has a limited number of research “mini-grants” available to women faculty of the Health Sciences Campus. The maximum award is $3,000. Propositions are currently being accepted for new grants for preliminary work or short-term investigational funding and — under special circumstances — attendance at a research workshop or course. The deadline for submission of a proposal is August 20. Application forms may be obtained from the Office for Women, Keilh Administration building (KAM), Room 110F (442-2554) and from the Norris Medical library. MFRA Reserve Box #62.

C a l e n d a r

Friday, Aug. 20

Friday, Aug. 27
11 a.m. Hematology Conference. “NHL Updates,” Alexandra Levine, USC. GNH7441. Info: 865-3013