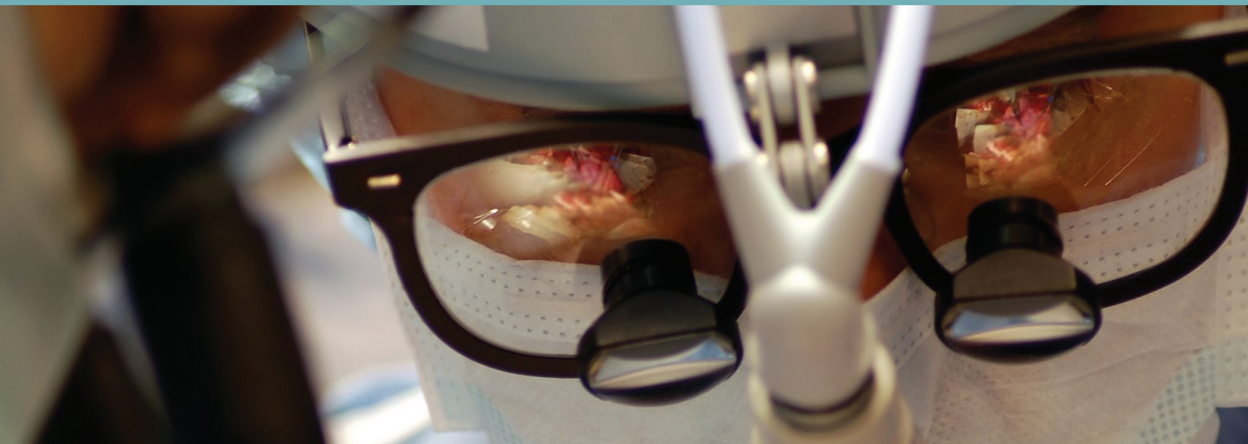


The Division of Transplant Surgery at UCSF



*“Virtually every single person in this country knows someone who has end-stage organ disease and who could benefit from transplantation. UCSF has premier programs in transplantation of almost all the solid organs. Our expert teams of specialists provide outstanding patient care. They offer even the most seriously ill patients the best chance of successful outcomes and ensure patients’ lives after transplant are as normal as possible.”*

– Nancy L. Ascher, MD, PhD  
Professor and Chair, UCSF Department of Surgery  
Isis Distinguished Professor in Transplantation  
Leon Goldman, MD Distinguished Professor in Surgery



The field of transplantation has evolved with astonishing speed: the first successful transplant in the world, a kidney transplant, was performed in 1954. As recently as the early 1980s, the one-year survival rate for liver transplant recipients was only 20 percent. Today, that survival rate has risen to 90 percent.

As one of the oldest and most respected transplant programs in the world, the UCSF Division of Transplant Surgery combines a depth of expertise with outstanding teamwork among faculty and staff to provide excellent care to patients. The most recent outcome data demonstrate that survival rates for both UCSF transplant patients and their transplanted organs are among the highest in the country, even though UCSF treats some of the most seriously ill patients. Some of UCSF's transplant innovations include:

- Living donor program, in which healthy donors can donate one kidney or part of their liver to a transplant patient.
- Paired donor exchange, in which UCSF matches an incompatible donor and recipient pair with another donor-recipient pair, enabling two recipients to receive organs with perfectly matched blood types.
- HIV and transplantation: UCSF has pioneered the successful kidney, liver, pancreas and islet transplantation of HIV+ patients.
- Islet transplantation, in which patients receive the insulin-producing cells from a donor's pancreas, virtually curing them of diabetes.



*The Transplant Program's internationally recognized team includes surgeons and liver and kidney disease specialists, and is supported by specialists in anesthesiology, infectious diseases, heart disease and pharmacology, and by nurse coordinators, social workers, mental health professionals, nutritionists and financial counselors.*

With advances in surgical technique and improved drugs to prevent infection and rejection, organ transplantation is now recognized as the most effective treatment for many diseases. UCSF is a leader in both adult and pediatric transplants for liver, kidney, pancreas and small bowel, attracting patients nationally and internationally. Children, who previously had little hope of survival in the event of organ failure, now thrive as healthy adults with transplanted organs.

At UCSF, each transplant candidate is carefully evaluated by a multidisciplinary team that includes transplant surgeons, gastroenterologists, nephrologists, hepatologists, anesthesiologists, infectious disease specialists, social workers and other health professionals. Patients receive state-of-the-art care for this highly complex procedure and have intensive long-term follow-up.

The Division of Transplant Surgery has a thriving research program and offers a broad portfolio of clinical trials led by principal investigators who are supported by a dedicated staff of trial coordinators and clinical research nurses. The Abdominal Transplant Fellowship program offers a rich educational experience for the aspiring transplant surgeon; some of its graduates have chosen to continue their careers at UCSF and have become leaders in the field.

## Conditions & Treatments

### **Kidney Transplant**

The Division of Transplant Surgery at UCSF has performed more kidney transplants than any other institution in the United States – more than 9,500 since 1964 – and is one of the largest centers for living donor kidney transplants in the country. Each year, the transplant team evaluates about 1,200 patients and performs more than 350 kidney transplants. Its one-year success rate is one of the highest in Northern California, and its pediatric kidney transplant program is one of the largest of its kind in the United States.

In the western United States, UCSF is a major kidney transplant referral center. It is renowned for treating complex cases, including patients with diabetes and those referred from other centers after post-transplant complications. Our many contributions to the field include:

- Evaluation of new immunosuppressive drugs that offer the promise of safer and more successful transplants.
- Advanced surgical techniques such as laparoscopic donor kidney removal or nephrectomy, using tiny incisions, and managing vascular and urological complications after transplant.

### **Liver Transplant**

The Liver Transplant Program at UCSF Medical Center has performed more than 2,700 liver transplants for adults and children since it began in 1988.

The program, designated as a “Center of Excellence” by the U.S. Department of Health and Human Services, does more liver transplants than any other hospital in Northern California and is recognized as one of the nation’s leading centers for pediatric and adult liver transplants.

Adults who receive transplanted livers from deceased donors have a one-year survival rate of 91.04 percent at UCSF, compared to an 89.12 percent average nationwide, according to data compiled by the Scientific Registry of Transplant Recipients.

An innovative procedure, called living donor liver transplant, allows a living person to donate a segment of his or her liver, which grows or regenerates to full size in the recipient (the remainder of the donor's liver also regenerates to full size). The procedure was initially performed in children because it is particularly difficult to find small donor organs. Today, the procedure helps save the lives of adults as well. Our liver transplant surgeons are among the most experienced in the nation in performing living donor transplants for adults and children. Unlike patients with kidney failure who can be supported by dialysis, there is no dialysis-type treatment for chronic liver disease.

### **Pancreas Transplant**

Pancreas transplantation can help manage complications that may result from insulin-dependent diabetes. It can eliminate the need for insulin injections, reduce or eliminate dietary and activity restrictions due to diabetes, and decrease or eliminate the risk of severe low blood sugar reactions.

UCSF Medical Center is a leader in pancreas and pancreas-kidney transplants for patients with diabetes mellitus. We offer three kinds of pancreas transplants:

- A combined pancreas and kidney transplant for diabetics suffering from end-stage kidney disease.
- A solitary pancreas transplant to prevent the onset of diabetic complications in the kidney, including a previously transplanted kidney.
- An islet transplant – a relatively minor surgical procedure which still requires expert, long-term care after the transplant to manage the same risks of rejection experienced by other transplant patients.

Since 2010, we have performed more than 16 pancreas transplants, 18 islet transplants and 44 simultaneous pancreas and kidney transplants. Although combined pancreas and kidney transplants are more complex than solitary kidney transplants and require close post-operative follow-up, our patients have done extremely well and enjoy a life free of dialysis and insulin therapy.

Since 1989, we have performed combined pancreas-kidney transplants in more than 347 type 1 diabetic patients. Our one-year success rates are 100 percent for kidney and 95.45 percent for pancreas, and our one-year patient survival is 100 percent. The five-year patient survival rate is 89 percent.



### **Small Bowel Transplant**

An intestinal transplant is a last-resort treatment option for patients with intestinal failure who develop life-threatening complications from total parenteral nutrition (TPN). In intestinal failure, the intestines cannot digest food or absorb the fluids, electrolytes and nutrients essential for life. Patients must receive TPN, which provides liquid nutrition through a catheter or needle inserted into a vein in the arm, groin, neck or chest. Long-term TPN can result in complications including bone disorders, catheter-related infections and liver failure. Over time, TPN also can damage veins used to administer nutrition via the catheter.

An intestinal transplant is a complex procedure requiring a highly skilled multidisciplinary transplant team, and in some cases may be combined with the transplantation of other abdominal organs, such as the liver or pancreas.



### **Pediatric Kidney Transplant**

When the kidneys stop working, toxic waste products build up in the body, eventually resulting in end-stage kidney disease. A child who reaches end-stage kidney disease will need either dialysis — a mechanical process for filtering waste products out of blood — or a kidney transplant. However, dialysis does not cure kidney failure, whereas a successful transplant offers the closest thing to a normal state.

UCSF's Transplant Program is a leader in performing kidney transplants in infants and children, attracting patients from the entire West Coast.

### **Pediatric Liver Transplant**

Liver transplantation, first performed in 1963, provides an opportunity for a longer, more active life for people in the final stages of liver disease. Advances in surgical techniques and new medications that prevent the body from rejecting the transplanted organ have greatly improved success rates.

Liver transplantation has been used for many liver diseases of childhood, with biliary atresia and related cholestatic disorders accounting for the majority. A



number of inborn errors of metabolism that lead to liver failure, including alpha 1 antitrypsin deficiency, tyrosinemia and others account for the next largest group of patients. Acute hepatic failure has been treated successfully with orthotopic liver transplantation in children, accounting for 5 to 10 percent of patients. Many other less common conditions have been considered for liver transplantation.

The UCSF Liver Transplant Program was established in 1988. It is internationally recognized as one of the leading liver transplant centers for children and adults. It has been designated a “Center of Excellence” by major insurance providers nationwide, with more than 300 pediatric liver transplants performed since 1988. The UCSF Pediatric Liver Transplant Program is a unique multidisciplinary team that includes specialists in gastroenterology, infectious diseases, anesthesiology, nephrology, pharmacotherapy, nurse practitioners, social workers, nutritionists, child life specialists and exercise therapists. Our primary goal is to return transplant recipients to a normal lifestyle.

The UCSF Pediatric Liver Transplant Program is involved in multiple National Institutes of Health-sponsored studies, including but not limited to:

- Childhood Liver Disease Research and Education network (ChiLDREN Protocol)
- Biliary Atresia Study in Infants and Children (BAR BASIC P005)
- Pediatric Acute Liver Failure Group
- Functional Outcomes of Liver Transplant (FOG1/FOG2)

In addition, we also participate in a number of Pediatric Liver Research Studies that are funded by the National Institute of Diabetes and Digestive and Kidney Diseases.



## *Ask Me About Our Research*

The Division of Transplant Surgery at UCSF excels in a broad range of laboratory and clinical research. Interested in learning more? Ask your physician! He or she would be happy to elaborate on the investigations taking place.

We recently organized and participated in a study of withdrawing immunosuppressive drugs from children after transplantation. Sixty percent of children who received living donor liver transplants from their parents remained off immunosuppression for at least one year with normal graft function and had liver biopsies that showed no evidence of rejection. UCSF has received an NIH planning grant for a subsequent larger trial for immunosuppressive withdrawal in children.

### **Pediatric Small Bowel Transplant**

An intestinal transplant may be a life-saving treatment for children with intestinal failure who develop serious complications from total parenteral nutrition (TPN). Similar to adults, long-term TPN can result in complications such as bone disorders, central venous catheter infections and liver failure. After receiving an intestinal transplant, patients can be transitioned from TPN to an oral diet, thus improving their health and quality of life.

## **Research Overview**

### **Basic Science**

An essential function of the immune system is the regulation of its own activities to refrain from attacking healthy tissues and to discontinue an immune response once the threat, such as an invading virus or bacteria, has been successfully eliminated. Research in the past decade has shown that much of the self-control of the immune system can be attributed to a small population of white blood cells called regulatory T cells (Tregs). One of our current studies is investigating how Tregs prevent autoimmune diabetes and transplant rejection in mice, with the hope of eventually translating these discoveries to help human transplant patients. In addition, we are exploring the therapeutic use of Tregs in human patients to halt progression of autoimmune diabetes, and to encourage the immune system to tolerate a transplanted organ rather than rejecting it.

To discover other immune mechanisms that are important to transplantation tolerance, we are studying immune responses to liver transplantation in mouse models and in human patients. Among the various transplanted organs, the liver has the strongest propensity to induce immunological tolerance. Approximately 20 percent of patients and 100 percent of mice receiving liver transplants accept the organs as their own. Therefore, all immunosuppressive drugs can be stopped. Eliminating or minimizing immune suppression has a significant impact on the overall health of patients by reducing the chances of infection and cancer outgrowth, and avoiding drug toxicity. We are studying liver tolerance mechanisms for the benefit of future organ transplant recipients.

We are also discovering more accurate ways to monitor the body's immune response in patients who have received kidney transplants. Because of genetic and biological differences, two patients with the same level of anti-rejection medication in their blood may have very different responses. We are developing a new method of monitoring the immune response which will help us fine-tune the optimal dosage for each patient, reducing the likelihood of organ rejection while minimizing side effects of immunosuppressants.

### **Clinical Research**

Principal investigators in the Transplantation Research Lab are also conducting several human research studies to evaluate the efficacy and safety of newly developed immunosuppressive agents.

Another goal of current clinical studies is to analyze the effects of withdrawal from immunosuppressive drugs. The clinical and mechanistic outcomes of attempting withdrawal are compared to those in groups whose standard treatments are maintained, the objective being to establish how best to manage immunosuppression in various types of patients.

*UCSF's world-renowned physicians not only help transplant patients, but also improve health outcomes for all patients. These discoveries have helped reduce the number of transplants that become necessary, and also have shed new light on the biology of diseases such as liver cancer, hepatitis B and hepatitis C.*

## **Make an Impact Now.** *Plan Ahead.*

Support the Division of Transplant Surgery in research, education and patient care through an outright gift, endowed fund or by means of a bequest. Please contact Regan Botsford, Senior Director of Development, at (415) 502-1573 or [rbotsford@support.ucsf.edu](mailto:rbotsford@support.ucsf.edu).

To learn more, please visit:

<http://transplant.surgery.ucsf.edu>

<http://support.ucsf.edu/giving-areas/organ-transplant>

<https://makeagift.ucsf.edu/transplant>

<http://support.ucsf.edu/trustsandbequests>



*Olivia Lemen (left) donated part of her liver to Amy Baghdadi, who had a rare form of liver cancer. They received comprehensive care from the UCSF Division of Transplant Surgery.*

### *Patient Story: Living Donor Shares Gift of Life*

Amy Baghdadi was a successful attorney with two young children when she received devastating news: the terrible pain in her side was caused by a rare, aggressive form of liver cancer. Her liver was too full of tumors for surgery, and chemotherapy proved ineffective. She came to UCSF and met with transplant surgeons who said she was a good candidate for liver transplantation.

Yet it was a race against time. “The wait for an organ is so long, and my cancer was growing so quickly, that the odds were my cancer was going to metastasize before I could get a cadaveric transplant,” said Baghdadi. Fortunately, UCSF is a world leader in performing living donor transplants, in which a healthy volunteer donates a portion of his or her liver, which is transplanted into the recipient. Because of the liver’s ability to regenerate, both the donor and recipient’s partial livers grow to full size. “Hearing about living donor transplants opened up this whole new world,” said Baghdadi.

Eight people offered to become donors. Olivia Lemen, the daughter of a family friend, was the best match. “Becoming a living donor was a risk, but it was a pretty low risk, and it was something I was willing to take on,” said Lemen.

“When I found out Olivia was a match, I was grateful and elated and incredibly relieved, because it was really my only chance to have any sort of long-term survival,” said Baghdadi. “But I also wanted to make sure this wonderful, healthy person didn’t get herself in trouble, which is why we went to UCSF, where she was in the best hands possible.”

Nancy L. Ascher, MD, PhD, chair of the Department of Surgery, removed about 40 percent of Lemen’s liver. In the next room, John Roberts, MD, chief of the Division of Transplant Surgery, implanted the donated portion of Lemen’s liver into Baghdadi. The two women received outstanding care not only in the operating room, but throughout their recovery period.

“Dr. Roberts and Dr. Ascher came and visited us every day, and are clearly so passionate about their work,” said Baghdadi. “It wasn’t just them – a whole team would come every day to ask how we were feeling, answer our questions, and make sure our medications were right. Everyone was so professional and kind, and that allowed me to relax and just focus on getting well. I developed a connection with them as people. Taking care of this liver will involve a lifelong relationship with UCSF, so I feel very lucky that that relationship is such a positive one.”

Baghdadi is now as active and healthy as she ever was and volunteers with the California Transplant Donor Network to raise awareness about the importance of organ donation. “This experience really brought into focus my priorities,” she said. “I am trying to live my life in a way that celebrates the second chance that I was given.”

Lemen returned to work within a month, and gave birth to her first child the following year. “Amy and I share a bond that is indescribable,” said Lemen. “But it goes beyond us. Our husbands and children and parents are a collective unit now that cannot be matched. Just knowing that I have done something with my life that means something is a gift. That is a gift I will give my children: I can teach my children that we give unconditionally, and what better way to teach than to lead by example.”

To learn more about Amy and Olivia’s story, please visit:  
<http://transplant.surgery.ucsf.edu>

## *Surgery Faculty*



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Professor and Chief, Division of Transplant Surgery  
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Isis Distinguished Professor in Transplantation  
Leon Goldman, MD Distinguished Professor in Surgery



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Director, Abdominal Transplant Fellowship Program



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Professor of Surgery



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**Sang-Mo Kang, MD**

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**Andrew M. Posselt, MD, PhD**

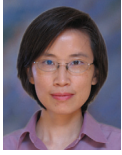
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Surgical Director, Pancreas Transplant Program

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### **John Feiner, MD**

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### **Sonali Joshi, MD**

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Medical Director, Moffitt-Long Anesthesia Workroom



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Community Liaison Director, Liver Transplant Service



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Assistant Clinical Professor of Medicine





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**Bilal Hameed, MD**

Assistant Professor of Medicine



**Jennifer C. Lai, MD, MBA**

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**Marion Peters, MD**

Professor of Medicine



**Jennifer Price, MD**

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**Brian Lee, MD**

Assistant Clinical Professor of Medicine



**Flavio Vincenti, MD**

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**David Wojciechowski, DO**

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## *Pediatric Nephrology Faculty*



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**Paul Brakeman, MD, PhD**

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Medical Director, Pediatric Dialysis Unit



**Marsha Lee, MD**

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**Farzana Perwad, MD**

Assistant Adjunct Professor of Medicine

## *Pediatric Transplant Faculty*



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Director, Pediatric Inflammatory Bowel Disease Program  
Anita Ow Wing Endowed Chair in Pediatrics  
Chair in Pediatric Gastroenterology and Nutrition



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and Transplant Program



**Philip Rosenthal, MD**

Professor of Pediatrics and Surgery  
Medical Director, Pediatric Liver Transplant Program  
Director, Pediatric Hepatology

## Who Will Benefit

The Division of Transplant Surgery embodies UCSF's three-fold mission of patient care, research and teaching.

The Division of Transplant Surgery at UCSF is recognized throughout the world as a leader in the field, and is known for the delivery of both compassionate and innovative care to patients. With the resources of an academic medical center, UCSF provides special services that often are not available elsewhere in the community. Our physicians not only have access to the latest technologies, but they are oftentimes the ones who develop them.

If you are interested in participating or learning more about any of our research studies, please do not hesitate to contact any of the physicians in the Division of Transplant Surgery.

If you would like to support the Division of Transplant Surgery at UCSF through an outright gift, endowment or planned gift, please contact Regan Botsford, Senior Director of Development, at (415) 502-1573 or [rbotsford@support.ucsf.edu](mailto:rbotsford@support.ucsf.edu) to discuss the many options available.

Please visit us online:

<http://transplant.surgery.ucsf.edu>

<http://support.ucsf.edu/giving-areas/organ-transplant>

<https://makeagift.ucsf.edu/transplant>

