



insidesurgery

SURGICAL ONCOLOGY UPDATE

The opening of the UCSF Bakar Cancer Hospital provides a major advance in integrating world-class cancer research and treatment. The new Mission Bay location brings clinicians together with basic scientists in the burgeoning bioscience research park and at the UCSF Helen Diller Family Comprehensive Cancer Center, the only National Cancer Institute (NCI)-designated comprehensive cancer center in the Bay Area. The new hospital also provides multimedia tools in the clinic and hospital rooms to better prepare patients for surgery and postdischarge home care.

Following are some of the advanced approaches offered at UCSF Medical Center, as described by three gastrointestinal, liver and pancreatic cancer surgeons:

- **Complex surgical oncology:** “A number of my patients came to UCSF after being told at other centers, ‘Get your affairs in order – there’s nothing else we can do,’” said Eric Nakakura, MD, PhD. “Because we see a high volume of complex cases, including many patients with recurrent cancer, we are able to operate on many patients who have been deemed ‘unresectable’ elsewhere, improving their survival and quality of life.”
- **Multidisciplinary approach:** By bringing together expert teams, UCSF Medical Center successfully performs highly specialized procedures. For example, one recent patient had a large liver tumor involving the inferior

vena cava and hepatic veins, which required a combined operation with hepatobiliary and cardiac surgeons, as well as a liver transplant surgeon, who performed complex revascularization. “It was a difficult operation, but the patient did very well,” said Carlos U. Corvera, MD, chief of hepatobiliary and pancreatic surgery. “It’s not just the technical aspects of removing the tumor. Our team of residents, nurses and interventional radiologists capture complications early, translating into better outcomes.”

- **Advanced expertise:** The most common tumor of the pancreas today is a fluid-filled cyst, known as an intraductal papillary mucinous neoplasm (IPMN). According to Kimberly Kirkwood, MD, about 15 percent of the general population and nearly 30 percent of older patients have pancreatic cystic lesions. Unlike pancreatic solid tumors, which are

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LETTER FROM THE CHAIR

We are thrilled by the new opportunities provided by the opening of three brand-new hospitals at the UCSF Medical Center Mission Bay campus: UCSF Benioff Children's Hospital San Francisco, UCSF Betty Irene Moore Women's Hospital and UCSF Bakar Cancer Hospital. Our outstanding surgeons now have state-of-the-art facilities with the latest equipment. Every aspect of the

hospitals has been thoughtfully designed to optimize quality of care and promote a healing environment for patients. The move also brings our world-class clinicians side by side with pioneering basic and translational researchers, supporting even greater levels of collaboration.

This edition of *Inside Surgery* outlines some of the latest innovations. Carlos U. Corvera, MD, chief of hepatobiliary and pancreatic surgery, discusses novel agents for treatment of cholangiocarcinoma, as well as a multidisciplinary approach to complex surgical cases involving multiple organ systems. Kimberly Kirkwood, MD, is advancing the assessment and treatment of pancreatic cystic lesions, and collaborates with pharmaceutical chemist Charles Craik, PhD, on developing a new method to risk-stratify these cysts. Eric Nakakura, MD, PhD, partners with chemical geneticist Kevan Shokat, PhD, to test a new drug to treat neuroendocrine tumors.

Madhulika Varma, MD, chief of the section of colorectal surgery, describes advances in minimally invasive approaches, as well as novel initiatives to improve care of patients before, during and after such surgery. Laura Esserman, MD, MBA, director of the UCSF Carol Franc Buck Breast Care Center, leads a radically new model for clinical trials. It harnesses the power of precision medicine and multi-institution collaboration to speed the testing of therapeutics while greatly reducing cost. She also highlights innovations in risk stratification, more-cosmetic approaches such as total skin-sparing mastectomy and other developments.

Hanmin Lee, MD, surgeon in chief of UCSF Benioff Children's Hospital San Francisco and director of the Fetal Treatment Center, highlights the new pediatric thyroid center, the LIFE Clinic – which provides ongoing support for pediatric patients who received care through the Fetal Treatment Center – and ways the new hospital provides enhanced care for both pediatric patients and their families.

We are honored to partner with you in providing the broadest range of treatment options for patients, and are excited by everything that the new hospitals at UCSF Medical Center at Mission Bay are making possible. Thank you for your interest.

Sincerely,

Nancy L. Ascher, MD, PhD

Professor and Chair, Department of Surgery

Isis Distinguished Professor in Transplantation

Leon Goldman, MD Distinguished Professor in Surgery

COLORECTAL SURGERY UPDATE

“UCSF Bakar Cancer Hospital features a lot of integration of systems, which will enhance our treatments,” said Madhulika Varma, MD, chief of the section of colorectal surgery. Spacious operating rooms easily accommodate large equipment needed for robotic surgery and intraoperative radiation, and new communication systems allow surgeons to participate in telemedicine video consults during a case without leaving the operating room.

Varma and her colleagues are leading many initiatives to improve patient care, including:

- **Enhanced Recovery After Surgery (ERAS)**, which improves surgical outcomes and patient experience. Under the direction of surgeon Ankit Sarin, MD, MHA, and anesthesiologist Lee-Lynn Chen, MD, a team of surgeons, anesthesiologists, pain management specialists, nurses and other health care professionals work collaboratively to implement effective, evidenced-based interventions to accelerate recovery. These include efforts to optimize patient health before surgery, tailoring medications and fluids during surgery and using nonopioid pain medications after surgery to support increased mobility and earlier return to eating solid food. In its first year, the program has reduced length of hospital stay and readmissions, decreased patients’ pain scores and shortened time to patients’ first post-operative solid meal.

“A main factor that keeps people in the hospital after colorectal surgery is not having their intestines work, and opioids can affect intestinal motility,” said Varma. “Also, by delivering pain care while using less narcotics, we help people get up and moving without nausea or dizziness. Patients tell me, ‘I didn’t think I would feel this good after having a big surgery,’ and all the interventions have a lot to do with that.”



Madhulika Varma, MD



Ankit Sarin, MD, MHA



Lee-Lynn Chen, MD

- **Reducing infection and readmission rates:** Colorectal surgery is often associated with a higher rate of infection due to bowel involvement. UCSF Medical Center has implemented interventions to reduce infections.

- **Improving patient education and perioperative care:** UCSF Medical Center is part of a UC-wide consortium to improve care for patients undergoing high-risk colorectal surgery, producing educational videos for ileostomy patients, with forthcoming videos about colon and rectal surgery. UCSF Medical Center is also hiring a nurse practitioner to assist recently discharged patients with stoma and medication management, and connects prospective patients with former patients who can help them better prepare.

- **Minimally invasive surgery:** UCSF Medical Center is a leader in laparoscopic surgery, including robotic surgery, enabling surgeons to manipulate instruments with greater degrees of freedom. This is particularly helpful in confined spaces such as the rectum. Also, transanal endoscopic microsurgery (TEM) allows surgeons to insert laparoscopic tools through the anus to conduct complex rectal surgery, improving accuracy while eliminating abdominal incisions.

- **Joint operations:** Colorectal surgeons work closely with other surgical specialists to provide comprehensive care. For example, colorectal and liver surgeons often jointly perform surgery to remove intestinal cancer that has metastasized to the liver. Colorectal and urologic surgeons remove intestinal tumors adhering to the bladder or prostate, and repair rectourethral fistulas related to prostate cancer.



Dr. Varma examines a patient.

Colorectal surgeons work with plastic surgeons to create muscle and skin flaps in cases where large colorectal tumors have been removed.

- **Pioneering new treatments:** The UCSF Center for Pelvic Physiology evaluates patients with fecal incontinence, constipation and pelvic floor prolapse, and tests new therapies. The center recently completed an investigational trial in tibial nerve stimulation, inserting electrodes into the foot for short periods to improve fecal incontinence.

“UCSF Bakar Cancer Hospital brings everyone together to create innovative programs,” said Varma. “There is a lot of energy and excitement about having this new campus in which to grow, and our dedicated doctors and staff are constantly pushing the envelope to help patients in novel ways.”

FOR MORE INFORMATION:

Visit colorectal.surgery.ucsf.edu and eras.surgery.ucsf.edu. To refer a patient, visit colorectal.surgery.ucsf.edu/referrals or call 415-885-3606.



PEDIATRIC SURGERY UPDATE

The new UCSF Benioff Children's Hospital San Francisco offers innovative technology, family-centered care and ease of access. "It's great to have a world-class facility that matches our world-class clinicians," said Hanmin Lee, MD, surgeon in chief and director of the UCSF Fetal Treatment Center. Some of the highlights of the new hospital include:

- **State-of-the-art facilities:** The pediatric operating rooms are fully equipped with tools for minimally invasive procedures and advanced imaging. There are hybrid operating rooms with the capacity to conduct joint interventional radiology, cardiology and surgical cases, as well as an OR with MRI capacity. Patient rooms are fully wired, with large monitors and touch screens for patient education.
- **Child-centered design:** Family members can now accompany pediatric surgery patients until they are under anesthesia. Child-friendly amenities include outdoor patios, expanded child life services, and programs for hospitalized pediatric patients. Soon there will be a playground across the street, where siblings can play.
- **Accommodating whole families:** Every patient room is private, with a pullout bed where a family member can sleep. Ronald McDonald House of San Francisco opened a new facility within the hospital that can accommodate up to 11 families a night, allowing them to stay close to their child. In the coming months, the Nancy and Stephen Grand Family House will open a few blocks away, also providing free temporary housing – for up to 250 people each night.
- **Easier access:** The new hospital is conveniently located in Mission Bay, near US Route 101 and Interstate 280. It is close to the Bay Bridge (I-80) and has several parking facilities, as well as valet parking during business hours.



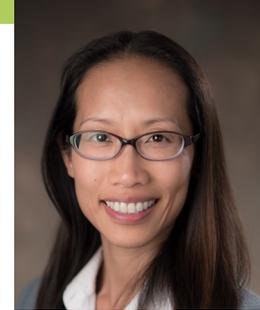
Hanmin Lee, MD



Benjamin Padilla, MD



Roger K. Long, MD



Lan Vu, MD

"Families just love our new hospital," said Lee. "Having a child who is ill is very stressful. We have tried to take away the additional stress that comes from worrying about where your family is going to stay, so people can focus on the health of their child. Marc and Lynne Benioff and many others in the philanthropic community have been amazing in creating this peaceful place for kids to heal."



In addition, UCSF Benioff Children's Hospital San Francisco recently established a thyroid center, jointly led by pediatric and fetal surgeon Benjamin Padilla, MD, and pediatric endocrinologist Roger K. Long, MD. "Pediatric patients with complex thyroid diseases, particularly those who need surgery, often need to see multiple doctors in multiple places," said Lee. "Drs. Padilla and Long work together closely to make it easy for families. They collaboratively decide on the best treatment for patients, and provide excellent care, including surgery and all the other treatments a patient may need."

UCSF Benioff Children's Hospital San Francisco is also the birthplace of fetal surgery. Through the LIFE (Long-Term Infant-to-Adult Follow-Up and Evaluation) Clinic, pediatric surgeon Lan Vu, MD, is leading research on long-term out-

comes for all patients with complex congenital anomalies who receive care through the Fetal Treatment Center. "We're following these patients throughout their childhood, and helping them get timely, early interventions and additional resources when needed, so they can reach their full potential," said Lee.

"We are also actively growing all of our pediatric surgical programs, including



Spaces throughout the children's hospital were built with kids in mind.

cardiac, orthopaedic, neurosurgery, otolaryngology, plastic and pediatric urology surgery," said Lee. "We are a complete, full-service children's hospital and do all the operations for children with the most complex diseases. We're at the intersection of health and helping children."

FOR MORE INFORMATION OR TO REFER A PATIENT:

Visit bayareapediatricsurgery.org.

BREAST CARE UPDATE

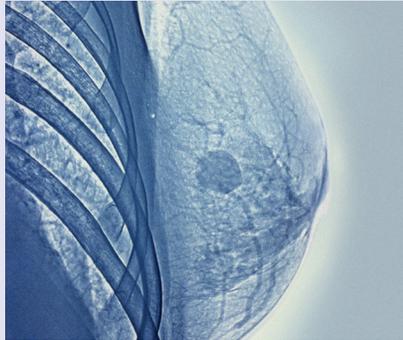
“Our multidisciplinary team is constantly looking for opportunities to improve the way we approach detection, screening, treatment and follow-up for women with breast cancer,” said Laura Esserman, MD, MBA, director of the UCSF Carol Franc Buck Breast Care Center. “All four of our surgeons – Michael Alvarado, Cheryl Ewing, Jasmine Wong and myself – work in concert with our radiation oncologists, medical oncologists, nursing colleagues, genetic counselors and others to pioneer much more targeted, personalized ways to provide treatment according to the biology of each patient’s cancer.”

Some of the latest initiatives include:

- **Revolutionizing clinical trials:** It currently takes more than \$2 billion and over a decade to develop a single new cancer drug. To accelerate this process, Esserman leads an unprecedented national consortium of medical centers and industry partners in the I-SPY 2 TRIAL, which uses adaptive clinical trial design to match promising new therapeutics with stage II/III breast cancer patients whose tumors have been molecularly profiled. I-SPY has already graduated three new drugs that show efficacy for specific patient subgroups, and is testing additional drugs, including novel immunotherapy agents.
- **Improving DCIS treatment:** UCSF Medical Center is pioneering better ways to treat ductal carcinoma in situ (DCIS). “This is a very challenging area in breast surgery,” said Esserman. “We are often too aggressive with some patients, and for a small minority, not aggressive enough.” Her group offers endocrine risk reduction, using imaging to evaluate response, as well as a forthcoming trial for the most aggressive DCIS lesions.
- **Advanced imaging and radiation therapy:** UCSF Medical Center is testing the SentiMag imaging system, which uses magnetic nanoparticles instead of a nuclear medicine test to



Laura Esserman, MD, MBA



localize sentinel lymph nodes, thus reducing a woman’s radiation exposure. Radiologists are also piloting the use of PET-MRI (positron emission tomography–magnetic resonance imaging) and MAMMI (MAMmography with Molecular Imaging) PET to evaluate breast disease and monitor response to therapy. In addition, UCSF leads a registry trial of intraoperative radiation therapy, evaluating the effectiveness of about 30 minutes of targeted radiation immediately after lumpectomy compared with standard treatment of three to six weeks of daily external beam radiation.

- **Better screening protocols:** Opening this fall, the WISDOM study is a five-year, UC-wide effort that will enroll 100,000 women to compare a risk-stratified approach to breast cancer screening with standard annual mammograms. In the intervention group, patients at higher risk will be screened more often, and those at lower risk will be screened less often. “We want to determine which approach is safer, less morbid and preferred by women,” said Esserman.
- **Total skin-sparing mastectomy (TSSM):** UCSF Carol Franc Buck Breast Care Center is a leader in developing, refining and evaluating this technique for women who choose mastectomy. The UCSF surgical group



Interior of the UCSF Bakar Cancer Hospital

has performed more than 1,000 of these procedures. TSSM preserves the entire skin envelope, including the nipple-areola complex. It dramatically improves cosmetic appearance and patient satisfaction while providing similar safety outcomes to standard mastectomy, including surgeries performed prophylactically for patients with inherited risk. “We figured out how to remove all the tissue that carries risk, while leaving the skin and outside appearance intact,” said Esserman.

- **Comprehensive care:** UCSF Medical Center offers a full range of social services and genetic counseling. Its Patient Support Corps provides decision support, including preappointment planning, as well as audio recordings and written summaries of consultations. In the coming months, UCSF will open a concierge-like service, offering screening appointments within 48 hours to expedite coordinated initiation of care.

FOR MORE INFORMATION:

cancer.ucsf.edu/breastcarecenter
Athenacarenetwork.org

To refer a patient, please contact Carrie D’Andrea at 415-885-7490 or carrie.dandrea@ucsf.edu.





Eric Nakakura, MD, PhD



Kimberly Kirkwood, MD



Kevan Shokat, PhD



Charles Craik, PhD



Emily Finlayson, MD, MS

CONTINUED FROM FRONT COVER

typically not detectable until they have become invasive cancers, cystic tumors can be identified early on magnetic resonance imaging (MRI) and computed tomography (CT) scans. Resection is often curative if performed at the proper stage, before tumors become invasive. This can often be done using minimally invasive techniques with a faster recovery. Interestingly, many cystic tumors will never progress to cancer and can be safely monitored, sparing patients unnecessary major surgery.

“One of the most clinically compelling questions in pancreatic disease is which patients with pancreatic cysts need surgery, and which can be safely monitored,” said Kimberly Kirkwood. “I currently use a mosaic of seven clinical, radiographic and cytologic criteria to advise patients. This field is changing very quickly, so it’s critical for such patients to be seen by someone who specializes in the evaluation and treatment of pancreatic cystic tumors.”

■ **Precision medicine:** Rather than taking a one-size-fits-all approach, UCSF Medical Center is discovering which therapies are most likely to be successful for each patient based on the molecular signatures of his or her tumor. For example:

■ **Neuroendocrine tumors:** Nakakura is collaborating with Kevan Shokat, PhD, a leader in chemical genetics, to test a new drug that inhibits the mechanistic target of rapamycin (mTOR) signaling pathway, which plays an important role in some neuroendocrine tumors – a rare tumor that

can produce debilitating hormones. “Each patient’s tumor is a precious resource that we can learn from,” said Nakakura. “We molecularly characterize tumor samples, keep them ‘alive’ by implanting them in mice, then test drug responsiveness of that patient’s tumor.”

■ **Liver tumors:** Corvera is using a similar approach to test novel agents for cholangiocarcinoma. “I have a drug that we’re hopeful might lead to a phase 1 clinical trial, based on a dramatic response in animal models,” he said. “As an academic medical center, one of the most important things we do is provide hope by developing clinical trials that can improve practice.” Corvera and his colleagues also use genomic profiling to test drugs already approved by the Food and Drug Administration (FDA) for other diseases.

■ **Pancreatic cystic tumors:** Kirkwood collaborates with pharmaceutical chemist Charles Craik, PhD, to measure proteases produced by cells lining the cysts to risk-stratify them. The goal is to create a risk profile for each patient that can help guide the extent of surgical resection, if needed, and the frequency of surveillance imaging. Kirkwood and Craik recently received National Institutes of Health (NIH) funding to develop a noninvasive method to identify high-risk cysts through imaging rather than fluid aspiration. Kirkwood also works on several multicenter NCI-funded projects to understand how cancer develops within the pancreas.



Carlos U. Corvera, MD

In addition to having technical expertise in surgical oncology, UCSF Medical Center recently established the Center for Surgery in Older Adults, under the direction of Emily Finlayson, MD, MS. Its geriatric and palliative care specialists help patients and families complete advance directives and articulate treatment goals, and the center’s team of dietitians and physical and occupational therapists help older patients “prehabilitate” for surgery. The center also works to enhance recovery and safe transitions home.

“We are all about integrating clinical medicine with basic science,” said Corvera. “We encourage physicians to refer patients early, providing the greatest opportunities to cure each patient.”

FOR MORE INFORMATION OR TO REFER A PATIENT:

Call 415-353-2161 or 415-353-9888, or visit surgicaloncology.surgery.ucsf.edu or geriatric.surgery.ucsf.edu.



APPOINTMENTS, HONORS AND AWARDS

Honors and Awards

Nancy L. Ascher, MD, PhD, received the 2015 American Society of Transplant Surgeons (ASTS) Pioneer Award, the most distinguished award bestowed upon an individual by the ASTS, for a significant contribution to the field of transplantation. Ascher also received the 2015 Distinguished Service Award from the International Liver Transplantation Society. Dr. Ascher is also president-elect of the Transplantation Society and will assume the presidency later this year. The Transplantation Society is a nongovernmental organization (NGO) that serves as an international forum for the worldwide advancement of organ transplantation.

Michael S. Conte, MD, was awarded a translational research grant from the National Heart, Lung, and Blood Institute's Vascular Interventions/Innovations and Therapeutic Advances (VITA) Program to study the problem of vascular injury and develop prototype medical drugs and devices that effectively prevent restenosis, reduce vascular scarring and improve vascular surgical outcomes. The grant is a collaboration between the Conte Lab and **Tejal Desai, PhD**, director of the Therapeutic Microtechnology and Nanotechnology Laboratory.

The UCSF Department of Surgery recently established the Center for Global Surgical Studies, co-directed by **Rochelle Dicker, MD**, and **Catherine Juillard, MD, MPH**. The center's mission is to improve access to quality surgical care in low-resource settings through research and education.

Emily Finlayson, MD, MS, director of the UCSF Center for Surgery in Older Adults, and general surgery resident **Jennifer Kaplan, MD**, received the Innovations Funding for Education Award for their proposal, "Integrating Interprofessional Learners in High-Risk Surgical Patient Care." Their novel educational model embeds early medical and nurse practitioner students into

interprofessional "prehabilitation" teams to improve the care of older surgical patients. The award was funded by the Academy of Medical Educators Innovation Program, the UCSF Library & Center for Knowledge Management/UCSF Program in Interprofessional Education and Tideswell at UCSF.

M. Margaret Knudson, MD, FACS, director of the San Francisco Injury Center for Research and Prevention, was appointed medical director of the Military Health System Strategic Partnership American College of Surgeons. She will oversee the partnership and assist with the development of education, systems-based practices and research to maintain and advance the clinical knowledge and skills for assuring quality and readiness of the military health system.

General and transplant hepatologist **Jennifer Lai, MD, MBA**, was selected by the *San Francisco Business Times* as a member of the "40 Under 40" Class of 2015. Her patient-oriented clinical research incorporates core principles of geriatrics, applying measures of frailty and functional status to patients with end-stage liver disease awaiting liver transplantation.

Peter C. Muskat, MD, FACS, was appointed chief of surgery for San Francisco General Hospital and Trauma Center. Muskat served as chief surgical consultant for development of the Expeditionary Medical Support hospital (used extensively during the Afghanistan and Iraq wars), and as chief of general surgery, 59th Medical Wing, Lackland Air Force Base, Texas. Muskat then became trauma director for the University of Cincinnati Medical Center, guiding them through two successful verifications as a Level 1 trauma center by the American College of Surgeons.

Peter G. Stock, MD, PhD, was elected the 41st president of the American Society of Transplant Surgeons.

Gregory P. Victorino, MD, FACS, who directs the Highland Hospital Trauma Center for the UCSF-East Bay Surgery Program, received the Siren Award from Alameda County Emergency Medical Services, in recognition of his action,

expertise and care in saving the life of a young father who was hit by a large truck.

A paper by general surgery resident **Emily Huang, MD**, entitled "From Novice to Master Surgeon: Improving Feedback with a Descriptive Approach to Intraoperative Assessment," was chosen by the Association for Surgical Education Program Committee as a Paper of Distinction.

The following general surgery residents received awards for their presentations at the 28th Annual J. Engelbert Dunphy Resident Research Symposium held in March:

- Best Basic Science Presentation:
Gavitt Woodard, MD
- Best Clinical Science Presentation:
Jessica Cohan, MD
- Outstanding Basic Science Presentation:
Benjamin Howard, MD, MPH
- Outstanding Clinical Science Presentation:
Carlie Thompson, MD
- Best "Quick-Shot" Presentation:
Lily Cheng, MD, and Bian Wu, MD (tie)

Second-year general and plastic surgery residents **Jhoanne Bautista, MD, PhD**, **Clara Gomez-Sanchez, MD**, **Greg Haro, MD**, **Audrey Nguyen, MD**, **Quoc-Hung Nguyen, MD**, **Juliet Okoroh, MD, MPH**, **Hunter Oliver-Allen, MD**, **James Ross, MD**, **Oren Shaked, MD**, and **Casey Ward, MD**, were the recipients of surgical loupes given in honor of distinguished alumni at the annual Historical Perspectives from the Department of Surgery and Loupes Ceremony.

Endowed Chairs and Distinguished Professorships

Carlos U. Corvera, MD, was named the Maurice Galante, MD Distinguished Professor in Hepatobiliary Surgery.

Madhulika Varma, MD, was named the Maurice Galante, MD Distinguished Professor in Surgical Oncology.



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www.ucsfhealth.org

Our Physician Liaison Service provides you with improved access to our physicians and medical services. Liaisons can expedite the referral process and assist in obtaining follow-up information and are available to help resolve difficulties.

TRANSFER CENTER

Tel: 415-353-9166
Fax: 415-353-9172

The Transfer Center is staffed 24/7 to coordinate the transfer of patients to UCSF Medical Center. The center provides quick access to our doctors and other members of our team. We evaluate the needs of each patient to ensure that appropriate care is provided. The center can also facilitate your patient's return transfer.

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San Francisco, CA 94143-0940

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Return Service Requested

One of the art installations at UCSF Bakar Cancer Hospital



Mark R. Laret, President and Chief Executive Officer, UCSF Health

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