



insidesurgery

LAPAROSCOPIC SURGERY

With the advent of better instrumentation and imaging tools, surgeons are taking a laparoscopic approach to complex procedures traditionally performed with an open incision. This shift towards minimally invasive surgery has dramatically reduced hospital stays and postoperative complications, allowing patients to resume their normal activities much more rapidly. Laparoscopic surgical techniques, many of which were developed by UCSF surgeons, can be used to treat both cancerous and benign conditions.

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Laparoscopic Adrenalectomy

Laparoscopic adrenalectomy is currently the procedure of choice for most adrenal diseases requiring surgical treatment, including pheochromocytomas, adrenal cortical tumors causing Cushing's syndrome or primary hyperaldosteronism. This complex laparoscopic technique can also be used to remove large adrenal tumors that are discovered incidentally and some cancers with limited spread to the adrenal gland, according to Quan-Yang Duh, MD, section chief of Endocrine Surgery at UCSF, which is a referral center for this operation. Dr. Duh has performed more than 250 laparoscopic adrenalectomies—one of the largest series in the world—with excellent results. Good outcomes are the result of close collaboration between surgeons, endocrinologists and anesthesiologists experienced in the treatment of adrenal disease.

Patients who undergo the laparoscopic procedure have less pain from the surgical site than those recovering from the large incision required by open surgery. They are also able to eat and return to normal activity within days instead of weeks of their surgery. Most patients are discharged home after a one- or two-day hospital stay.

Minimally Invasive Parathyroidectomy

A minimally invasive surgical approach is also appropriate for up to two-thirds of patients with primary hyperparathyroidism. To be eligible, the patient must have a definitive finding of a single parathyroid adenoma by preoperative localization studies, usually ultrasonography and sestamibi scan. This is because the minimally invasive approach, which involves small incisions ranging from 1.5 to 3 cm, permits only limited exploration for additional parathyroid tumors.

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University of California
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UCSF

Department of Surgery



LETTER FROM THE CHAIR

This issue of *Inside Surgery* reflects how busy we have been, both in terms of faculty recruitment and clinical innovation.

The Department has been actively recruiting new faculty to meet our increasing clinical needs. We are fortunate that Dr. Hobart Harris, pictured on the back page of this newsletter, has accepted the important role of chief of the Division of General Surgery at UCSF. Dr. Harris has an impressive clinical and research background and is highly respected as an educator. Under his leadership, the Division will continue to integrate surgery with other disciplines to provide comprehensive care for patients with complex diseases.

Dr. Julio Garcia-Aguilar, the new chief of Colorectal Surgery, has expanded clinical services within this specialty and has developed a research program to investigate the optimal use of chemoradiation in the treatment of rectal cancer. Dr. Tom Karl, the new chief of Pediatric Cardiac Surgery, brings to UCSF his international reputation for providing excellent care to children with complex heart problems.

Other new faculty recruits round out our current strengths in vascular, pediatric, endocrine, colorectal, plastic and reconstructive, adult and pediatric cardiothoracic, and breast surgery.

Our new appointments also include faculty from the UCSF-East Bay Surgery Program. This surgical residency training program, previously affiliated with UC Davis, is based at Alameda County Medical Center. This affiliation, which will complement our existing resident education and clinical programs, offers residents valuable surgical experience with a diverse patient population.

This issue highlights clinical innovations in minimally invasive (laparoscopic) surgery. Less invasive techniques have been incorporated into virtually every surgical discipline; in these pages we explore laparoscopic approaches to endocrine, bariatric and colorectal surgery. When performed by a highly skilled surgical team, these new approaches can greatly reduce morbidity and recovery times for patients.

Nancy L. Ascher, MD, PhD
Professor and Chair, Department of Surgery



Precise anatomical knowledge enables the surgeon to perform neck operations with small incisions.

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Several approaches to minimally invasive parathyroidectomy are currently being performed at UCSF, some of which involve the use of a videoscope, according to Duh. With appropriately chosen patients, the results of minimally invasive parathyroidectomy are comparable to those of the traditional open approach.

Esophageal Motility Disorders

For more than a decade UCSF has provided laparoscopic treatment for a range of benign esophageal motility disorders. These include laparoscopic fundoplication for gastroesophageal reflux disease (GERD) and laparoscopic myotomy for the treatment of achalasia. Gastrointestinal surgeons Marco Patti, MD, and Lawrence W. Way, MD, care for these patients through UCSF's multidisciplinary Center for the Study of Gastrointestinal Motility and Secretion.

UCSF has extensive experience with laparoscopic fundoplication, a procedure in which the stomach is wrapped around the lower esophagus to control acid reflux. The surgery is offered to patients who do not respond to medical therapy for the condition, and to younger patients who elect to have the condition surgically repaired rather than undergo long-term medical therapy.

UCSF has more experience than any institution in the world in the use of laparoscopic surgery (Heller myotomy) for achalasia, a disorder in which the lower esophageal sphincter fails to open properly. Results have been so successful that it is now considered the treatment of choice for achalasia, having supplanted balloon dilatation and botox injection.

Minimally invasive surgery for esophageal motility disorders typically involves a 23-hour hospital stay. Patients are usually able to eat the evening following surgery and most return to work within two weeks.

Technical Innovations

The UCSF surgical team is responsible for technical advances that have affected how laparoscopic surgeries are performed in the wider surgical community.

Drs. Duh and Way, for example, developed the most commonly used method for performing laparoscopic gastrostomies and jejunostomies. The team also developed the surgical methods for laparoscopic removal of giant liver cysts and was the first to report a large series of cases using the technique. The UCSF team has devised an innovative intragastric method for performing laparoscopic cystgastrostomy for pancreatic pseudocysts. The approach uses a novel radially expanding trocar, now being marketed by industry as a safer alternative to conventional cutting trocars. UCSF surgeons also authored a series of articles on laparoscopic trocar injuries, showing that the occurrence of retroperitoneal vascular injuries can generally be avoided by following principles of safe insertion.

The Department of Surgery has also served as the clinical testing arm for the development of a laparoscopic robotic device (the de Vinci robot marketed by Intuitive Surgical). The UCSF Videoscopic Surgery Center has recently acquired two of the robots, one for training purposes in the animal lab and the other for surgery in the operating rooms.

CONSULTATIONS AND REFERRALS

For more information, please contact Quan-Yang Duh, MD, Lawrence W. Way, MD, or Marco Patti, MD, at 415/353-2161.



Laparoscopic operation showing use of ultrasonic scissors and laparoscope connecting to a camera.



Magnetic resonance imaging (MRI) of the abdomen showing a large right adrenal pheochromocytoma behind the liver and above the right kidney. This was resected successfully using laparoscopic technique.



Excised pancreas showing a 1-cm insulinoma in the body of the pancreas.

Videoscopic training program

The Department of Surgery offers an extensive training program for community surgeons through its Videoscopic Surgery Center. Since its inception in 1992, the UCSF program in videoscopic surgery has trained approximately 3,000 surgeons in the technical aspects of laparoscopic and thorascopic surgery. Formal training courses include lectures, videotapes, a complete syllabus and lengthy periods of supervised hands-on animal work. The UCSF training program is the most extensive of its type in the United States. Courses cover not only basic and advanced general surgery but also specialized urologic, pediatric, cardiac and hernia repair procedures. The UCSF program has served as a model for the ACS Committee on Emerging Surgical Technology and Education.

BARIATRIC CENTER OFFERS LAPAROSCOPIC WEIGHT LOSS SURGERY

For carefully selected, highly motivated patients, weight loss surgery may offer a good treatment option for morbid obesity. The UCSF Bariatric Surgery Center combines the expert skills of gastrointestinal surgeon Marco Patti, MD, and gastroenterologist James Ostroff, MD, who serve as surgical and medical directors of the Center, respectively. The comprehensive, multidisciplinary program helps patients decide if surgery is the right option for them, and provides ongoing support for those who choose to take this step.

A Major Health Concern

The incidence of morbid obesity reached epidemic proportions in the United States in the last decade, rising from 12% in 1991 to 18% in 1998. A steady increase has been observed in both sexes, and across age groups, races, and educational levels, although the largest increases have occurred in 18 to 29 year-olds, those with college education, and those of Hispanic ethnicity. Defined as a body mass index (BMI) equal to or greater than 30 Kg/m², obesity is caused by a complex interplay of genetic, environmental and psychosocial factors.

Conditions associated with morbid obesity include pulmonary dysfunction, sleep apnea, diabetes mellitus, hypertension, venous stasis, degenerative joint disease and urinary incontinence. These conditions impair quality of life and contribute to increased mortality.

Most morbidly obese patients repeatedly attempt diet and exercise regimens, only to regain their lost pounds at a discouragingly quick pace. The discovery of the *obese (ob)* gene and its protein product leptin opened new doors for research into the pharmacological treatment of obesity, but as yet research has not been translated into clinical applications.

In 1991 the National Institutes of Health called for a consensus conference to define the role of surgery in the treatment of morbidly obese patients and established criteria for the creation of Centers for Bariatric Surgery. The UCSF program, created in 1998, adheres strictly to the NIH guidelines. Surgery is offered only when non-surgical treatments such as diet and exercise have failed, and after patients have been thoroughly screened by a multidisciplinary, highly experienced team that provides long-term follow-up.

In addition to the expertise of Drs. Ostroff and Patti, the UCSF bariatric surgery program draws on the talents of cardiologists, endocrinologists, psychiatrists,

intensivists, radiologists, nurses and nutritionists. Karen Bagatelos, RN, NP, regularly assists in the preoperative screening of patients.

The Evaluation

Patients are initially seen in Dr. Ostroff's office where a complete history and physical evaluation are performed. All patients must be evaluated preoperatively by a cardiologist and a psychiatrist and undergo an abdominal ultrasound to screen for gallbladder stones. Additional consultations may be arranged based on the patient's history and physical findings. These supplementary evaluations can be performed by UCSF specialists or by physicians in the patient's hometown. Test results are discussed with the consulting and referring physicians, and eligible patients are referred to Dr. Patti. Patients are also required to lose 10% of their initial body weight prior to surgery, a requirement that helps select patients who have a full understanding of the rationale for the operation and the mechanism of weight loss.

The Operation

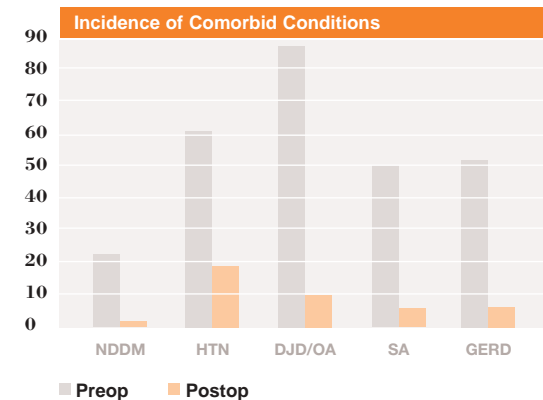
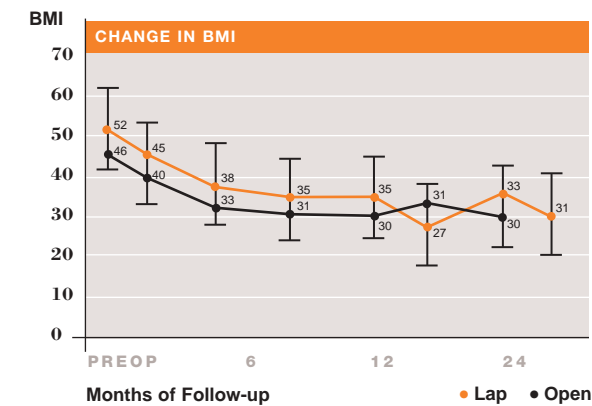
The UCSF program uses the Roux-en-Y gastric bypass, a gastric restriction procedure. A small gastric pouch is isolated from the rest of the stomach, and connected to a loop of jejunum through a small (1 cm) anastomosis. The gallbladder is also removed if stones are detected by the preoperative ultrasound. The operation can be performed laparoscopically in most patients. Very large patients (BMI>60) or those who have undergone previous operations require open surgery through a mid-line incision.

Patients remain in the hospital for two to three days after a laparoscopic bypass, and three to five days after an open bypass, according to Dr. Patti. They are discharged with medications to control pain, reduce gastric acid secretion, and prevent the formation of gallstones.

Follow-Up

Patients are seen in the office two and six weeks postoperatively. Appointments are then scheduled every three months during the first year, and every six months during the second and third year. Monthly support groups are held to bring together pre- and postoperative patients. A guest speaker is often present, ranging from a nutritionist who can discuss dietary questions to a plastic surgeon who can field questions about surgery to remove excess skin after major weight loss.

COMORBID CONDITIONS	PREVALENCE	RESOLUTION/IMPROVEMENT
Depression	45%	62%
Diabetes	19%	93%
Hypertension	15%	85%
Hypercholesterol	45%	68%
DJD/OA	62%	87%
Sleep Apnea	30%	83%
GERD	38%	89%
Asthma	19%	93%



Excellent Results

Between December 1998 and April 2002, 170 patients underwent a Roux-en-Y gastric bypass at UCSF: 24 men and 146 women, whose mean age was 42 years (ranging from 21 to 66). The average preoperative BMI was 48 Kg/m² (ranging from 35 to 76). Seventy-three operations (43%) were performed through a laparotomy, and 97 operations (57%) laparoscopically (including most of those performed during the last 12 months). There was only one anastomotic leak (0.6%) and one death (0.6%), according to Dr. Patti.

Most patients tended to reach or closely approach their ideal body weight within 12 to 18 months, particularly those who exercised regularly. Preoperative comorbid conditions were strikingly reduced. Most patients, for example, were able to stop medications for diabetes or hypertension or sleep well and feel rested for the first time in years.

New Offices, Additional Staff

Given the program's statistical success and the increasing number of patients interested in this procedure, UCSF is expanding support for the bariatric surgery program. The center will move to a new office suite at 350 Parnassus Avenue in early fall, one that will be equipped with furnishings such as chairs and examining tables that comfortably accommodate larger patients. Patients will be able to obtain all necessary consultations in this office. To ensure that qualified patients do not experience long waits to schedule their surgery, the department is recruiting two additional surgeons with expertise in minimally invasive bariatric surgery.

CONSULTATIONS AND REFERRALS

For more information, please call 415/353-2161.



Sonia L. Ramamoorthy, MD, Julio Garcia-Aguilar, MD, PhD, and Madhulika G. Varma, MD.

COLON AND RECTAL SURGERY

The Section of Colorectal Surgery has recently expanded its staff and services to provide the highest quality treatment for colorectal diseases. Section Chief Julio Garcia-Aguilar, MD, PhD, a nationally recognized expert in the field of colon and rectal cancer who joined the faculty this year from the University of Minnesota, leads a collaborative approach to basic science research, clinical research and patient care. Section members include Madhulika G. Varma, MD, Sonia L. Ramamoorthy, MD, and Theodore R. Schrock, MD. Together they provide treatment for cancers of the small intestine, colon, rectum and anus; diverticular disease; inflammatory bowel disease such as ulcerative colitis and Crohn's disease; defecation disorders, including constipation, pelvic floor prolapse and fecal incontinence; and anorectal problems such as hemorrhoids, fissures, and complex fistulas.

Colorectal Cancer

Improved understanding of the pathophysiology of colorectal cancer has led to a number of advances in the treatment of this disease.

Cancer staging has been improved with the use of endorectal ultrasound, an area in which Dr. Garcia-Aguilar has particular expertise.

Ultrasound staging allows physicians to more accurately plan multimodal therapy with medical and radiation oncology. Surgeons are also now able to preserve sphincter function in many rectal cancer patients, thanks to an improved understanding of cancer pathology and advances in surgical techniques. Sphincter-saving operations allow patients to maintain normal bowel function and eliminate the need for a permanent colostomy. Treatment of patients with colorectal cancers is coordinated through the UCSF Mount Zion Clinical Cancer Center, which offers multidisciplinary expertise and the opportunity for selected patients to participate in clinical trials of innovative therapies.

Laparoscopic Surgery

Another faculty addition, Sonia Ramamoorthy, MD, recently completed a colon and rectal surgery fellowship at Washington University, St. Louis, where she obtained advanced training in laparoscopic surgery for colorectal diseases. Under her leadership, UCSF offers laparoscopic colectomy for benign polyps, diverticular disease, inflammatory bowel disease, constipation and prolapse. This minimally invasive approach to intestinal surgery reduces the patient's hospital stay and need for pain medication. In the

future, Dr. Ramamoorthy plans to develop an advanced laparoscopic colorectal surgery continuing medical education course for community-based surgeons.

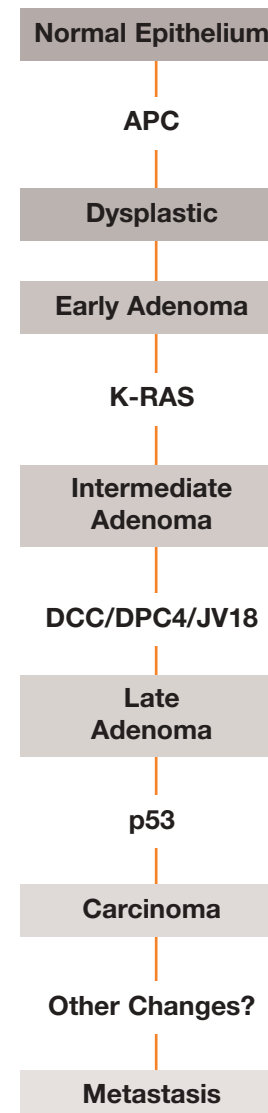
At this time, UCSF does not offer laparoscopic surgery for colorectal cancers. Although early results of a multicenter, NIH-funded trial comparing laparoscopic colectomy to open surgery for colon and rectal cancer are encouraging, long-term recurrence and survival data are still pending. "We feel it is important to have this long-term data before we substitute laparoscopic procedures for open surgery in colorectal cancer," said Ramamoorthy. "However, we are in the process of developing a protocol to study this issue at UCSF."

Defecation Disorders

The Department of Surgery's Center for the Study of Pelvic Floor Disorders, under the direction of Madhulika Varma, MD, is also expanding to accommodate the increasing number of patients who require evaluation for fecal incontinence, constipation and pelvic floor prolapse. Since its establishment in 1995, the center has provided evaluation and treatment for hundreds of patients with pelvic floor dysfunction through its anorectal physiology laboratory.

This fall, the Center will move to new quarters at UCSF Mount Zion as the Center for Pelvic Physiology Testing. The new facilities will offer the most advanced technology for physiologic testing, including endoanal/endorectal ultrasound to determine anatomical abnormalities, anorectal manometry to measure sphincter pressures, elec-

Proposed pathophysiology of colorectal cancer



tromyography to evaluate pelvic nerve function, and defecography to evaluate rectal anatomy and pelvic floor muscle coordination. "These tests are used in conjunction with clinical assessment to better evaluate and plan for treatment of incontinence, constipation and pelvic floor prolapse," said Varma.

The Center also provides a multidisciplinary approach to patients with complex pelvic floor disorders, which includes counseling, medical management, surgery and biofeedback. Urogynecologic evaluation with urodynamics will also be available. Innovative surgical treatment options for fecal incontinence include radiofrequency ablation, artificial sphincters and sacral stimulation for those patients who have failed more conventional treatments. More effective surgical treatments have also been developed to treat severe constipation caused by rectal prolapse, rectocele and Hirschsprung's disease.

Ulcerative Colitis

The development of the ileo-anal pull-through procedure has enabled ulcerative colitis patients to avoid a permanent ileostomy following resection of the colon and rectum. Instead, the rectum is replaced with a "J pouch" made of small intestine to maintain intestinal continuity. This can be particularly beneficial to the quality of life of younger patients with a severe form of the disease. Treatment is coordinated with other members of the UCSF Center for Inflammatory Bowel Disease, which offers medical and surgical treatment options and psychosocial support for patients with both ulcerative colitis and Crohn's disease.

CONSULTATIONS AND REFERRALS

For more information, please contact the Section of Colorectal Surgery at 415/353-2161 (clinical office) or 415/476-6105 (academic office).

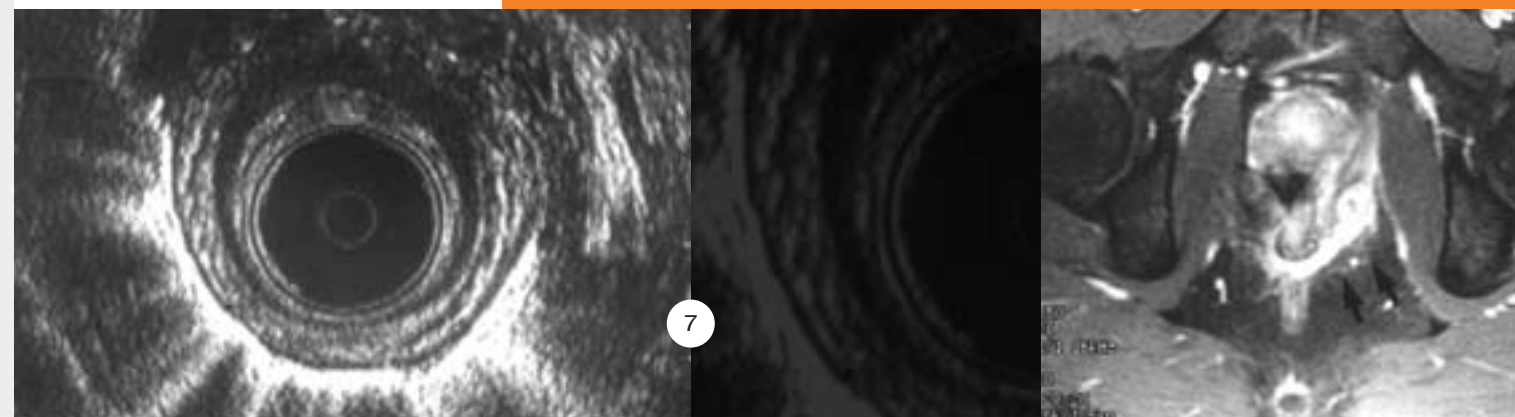
QI REPORTING SYSTEM TO IMPROVE SURGICAL SAFETY

Surgeons routinely report adverse events and surgical complications as part of a weekly morbidity and mortality conference. Discussion usually focuses on the individual's role in the event, however, and rarely examines the larger question of how systems and procedures may have contributed to the outcome.

The UCSF Department of Surgery in January became one of 14 national test sites participating in a study of a risk-adjusted adverse event reporting system for major general and vascular surgical operations. The system, known as the National Surgical Quality Improvement Program (NSQIP), has been used for the last 10 years by the Department of Veterans Affairs Medical Centers, according to Verna Gibbs, MD, who directs the UCSF component of the study. The three-year study, sponsored by the Agency for Healthcare Research and Quality and the American College of Surgeons, will determine whether the NSQIP methodology can be as effective in private sector health care systems as it has been in the VA system in identifying, managing and reducing adverse event rates as measured by 30-day postoperative morbidity and mortality.

As part of the study, preoperative risk data, intraoperative variables and 30-day postoperative outcomes are collected and analyzed for all general and vascular surgery cases. Participating hospitals are then ranked anonymously by the ratio of observed to expected adverse events based upon the risk profile of the patients. The results of these comparisons are provided to each hospital and are used to identify areas where performance can be improved.

(Left) Endoanal ultrasound of a horseshoe fistula and (right) MRI of the pelvis demonstrating a fistula.





HARRIS TO HEAD GENERAL SURGERY

Hobart Harris, MD, a physician-scientist with a special interest in the immune response in sepsis, has been named chief of the Division of General Surgery at UCSF. Harris has been a member of the surgery faculty since 1994, based at San Francisco General Hospital Medical Center.

Harris has particular clinical expertise in the surgical treatment of diseases of the pancreas, liver and biliary tree, and in the treatment of surgical infections and sepsis. His laboratory work is supported by an NIH grant to study the role of triglyceride-rich lipoproteins in the innate host response to endotoxins, such as those released by the Gram-negative bacteria that cause the most deadly form of sepsis.

After receiving his degree from Harvard Medical School, Harris completed a UCSF general surgery residency and a fellowship in hepatobiliary surgery at the University of Hong Kong, Queen Mary Hospital. His many awards include a Robert Wood Johnson Minority Medical Faculty Development Program Fellowship, an America College of Surgeons Faculty Fellowship, and the Royal College of Surgeons Traveling Fellowship.

CONSULTATIONS AND REFERRALS

Dr. Harris can be reached at 415/514-3891.

HONORS AND AWARDS

Nigel W. Bunnett, PhD

Awarded the Viktor Mutt Medal at the 14th International Symposium on Regulatory Peptides

APPOINTMENTS

Peter Anastassiou, MD

Assistant Clinical Professor
Thoracic Surgery

Anthony Azakie, MD

Assistant Professor in Residence
Pediatric Cardiothoracic Surgery

Charles Eichler, MD

Associate Clinical Professor
Vascular Surgery

Cheryl Ewing, MD

Assistant Professor of
Clinical Surgery/Breast Care

Julio Garcia-Aguilar, MD, PhD

Professor in Residence
Colorectal Surgery (Section Chief)

Lawrence Goldstein, MD

Associate Clinical Professor
UCSF-East Bay Surgical Residency
Program

Jay Harness, MD

Clinical Professor
UCSF-East Bay Surgical Residency
Program

Hobart Harris, MD, PhD

Professor
General Surgery (Division Chief)

Elsa Hirvela, MD

Associate Clinical Professor
UCSF-East Bay Surgical Residency
Program

Charles Hoopes, MD

Assistant Professor in Residence
Adult Cardiothoracic Surgery

Tom Karl, MD

Professor
Pediatric Cardiothoracic Surgery
(Division Chief)

Electron Kebebew, MD

Assistant Professor in Residence
General Surgery/Endocrine

John Lane, MD

Assistant Professor in Residence
Vascular Surgery (also at SFGH)

Karen Lane, MD

Assistant Professor in Residence
General Surgery/Breast

Terrence Liu, MD

Associate Clinical Professor
UCSF-East Bay Surgical Residency
Program

Mary McGrath, MD

Professor in Residence
Plastic and Reconstructive Surgery

Kerilyn Nobuhara, MD

Assistant Professor in Residence
Pediatric Surgery

Claude Organ, Jr., MD

Professor in Residence
UCSF-East Bay Surgical Residency
Program (Director)

Laura Pak, MD

Assistant Professor of
Clinical Surgery
Vascular Surgery

Andrew Posselt, MD, PhD

Assistant Professor in Residence
Transplantation/General Surgery

Sonia Ramamoorthy, MD

Assistant Professor in Residence
Colorectal Surgery

Gary Rass, MD

Assistant Professor in Residence
Pediatric Cardiothoracic Surgery

Darren Schneider, MD

Assistant Professor in Residence
Vascular Surgery

Elaine Tseng, MD

Assistant Professor in Residence
Adult Cardiothoracic Surgery (also at
VAMC)

Caesar Ursic, MD

Assistant Clinical Professor
UCSF-East Bay Surgical Residency
Program

Gregory Victorino, MD

Assistant Clinical Professor
UCSF-East Bay Surgical Residency
Program

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