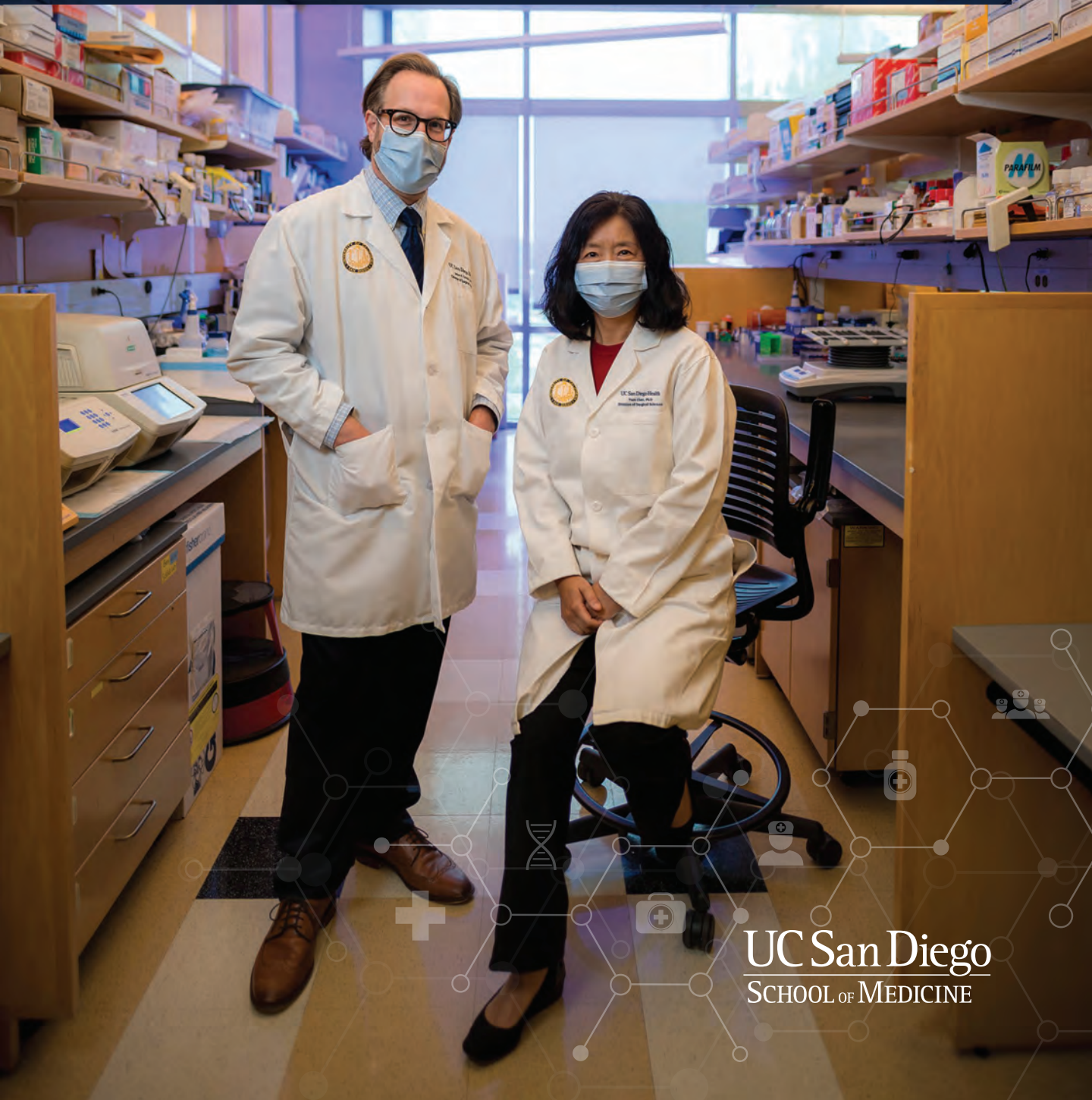


DEPARTMENT OF SURGERY

ANNUAL REPORT 2020-21



UC San Diego
SCHOOL OF MEDICINE

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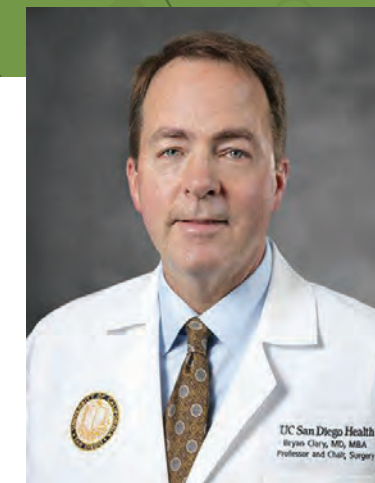
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LETTER FROM THE CHAIR



Dear Colleagues and Friends,

It is difficult to believe that another year has again passed us by. Truth be told, years don't just "pass us by," but instead bring us into the future; a future that we, through our vision and efforts, help to shape.

It has been my practice at this time of year to sit down and read through our prior annual reports. I do so with a sense of pride for past accomplishments and with anticipation of what the next year will hold. These reports lay witness to the incredible transformation of our programs and document important events that have forged our present identity. They tell a story of rapid growth, unparalleled success, new faces and new ideas. They remind us of the immense privilege we have in caring for our patients and the impactful role that friends and supporters have played.

The report that you are now viewing continues this story, and it is my hope that in it you will find encouragement in the midst of another challenging year. While the clouds of COVID-19 hovered over the Department for the entirety of the past year, they could not obscure the many successes that our teams and community collaborators brought forth. In this year's report you will find an incredible example of such partnership in the establishment of the Gleiberman Head and Neck Cancer Center. With their extraordinary \$12 million gift, Hanna and Mark Gleiberman have partnered with us to improve the outcomes of present and future patients with complex head and neck cancers. Their contribution will enable access to world-class care and clinical trials through targeted investments that have a direct impact on both research and the development of the next generation of experts.

In addition to providing an overarching view of the Department and its divisions, each year's annual report has a special emphasis. This year we have chosen to put the spotlight on our research mission. A common misperception regarding surgical research is that its impact is felt only by future patients. While tomorrow's patients certainly benefit, there is ample evidence that today's patients also benefit by receiving care in the milieu of a vibrant research environment. As such, academic surgical departments have an imperative to develop robust research programs.

In this context, the Department in January of this year brought forth a new division, the Division of Surgical Sciences, led by Yuan Chen, PhD; we also named a new Executive Vice-Chair for Research, Jason Sicklick, MD, FACS. They, along with our faculty and divisional leaders, are transforming our research infrastructure and culture, developing new research units (Pods), recruiting new scientists, and investing in our junior faculty and trainees. We are excited to share with you in this report many of the ways in which our faculty are bringing their research talents to bear in the COVID pandemic, as well as in the areas of pancreatic cancer, pediatric congenital facial deformities, rare cancers of the intestinal tract, alcohol-induced liver disease, and head and neck cancer.

We thank you for taking the time to peruse this year's Annual Report and always for your interest and participation in the affairs of the Department. The future is very bright and with your support we cannot wait to see where this year brings us...

Sincerely,

BRYAN M. CLARY, MD, MBA, FACS
Chair, Department of Surgery
UC San Diego



SURGERY BY THE NUMBERS

ACTIVE CLINICAL TRIALS: **45**

RESEARCH FUNDING: **\$10.27 MILLION**

RESEARCH GRANTS: **47 AWARDS**

DIVISIONS: **13**

FACULTY: **139**

RESIDENTS: **76**

FELLOWS: **18**

INPATIENT CASES: **13,732**

OUTPATIENT CASES: **7,644**

OFFICE VISITS: **63,681**

PURSuing A BETTER TOMORROW

The Department of Surgery at UC San Diego has, from its outset, harbored a highly valued bench-to-bedside culture. Members of the UC San Diego Surgery family have forged new approaches for pulmonary hypertension, burn wound coverage, trauma resuscitation, lymph node staging in cancer, otitis, achalasia, and other conditions.

THE BIRTH OF A NEW DIVISION

Our research renaissance began with the birth earlier this year of a new Division of Surgical Sciences (DSS). DSS serves as a nucleus uniting primarily non-clinician scientists in the Department of Surgery. It is a home for their growth, development, and mentorship, where researchers can achieve a common scientific goal by altering discipline-specific approaches, sharing resources, and integrating different disciplines.

Creation of the DSS will also encourage non-clinician scientists and clinician collaborations. Together, the DSS will help facilitate mentorship of junior non-clinician scientists and clinician-scientists, as well as improve the training of post-doctoral fellows, surgical residents, medical students, and Masters students. Our hope is that by breaking down research silos, the resulting increased collaboration may also have a beneficial effect on extramural funding, leading

to even more transdisciplinary collaborations and team science amongst researchers.

At the helm as chief of the Division of Surgical Sciences is **Yuan Chen, PhD**. Dr. Chen earned her B.S. in Chemistry at the University of Science and Technology of China. She then completed a Ph.D. in Biochemistry at Rutgers University. In 1994, she joined the faculty of the City of Hope Comprehensive Cancer Center in Duarte, California. By 2005, she had been promoted to Professor at the Beckman Research Institute of the City of Hope Medical Center. In 2018, she was promoted to the Dean of Transdisciplinary Research and member of the Executive Committee of the City of Hope Cancer Center.

You can read more about the Division of Surgical Sciences on page 60.



In 2020, Dr. Chen was recruited to the UC San Diego Department of Surgery and Division of Surgical Oncology to continue her studies investigating ubiquitin-like modifications and the related regulation of oncogenic pathways and anti-tumor immunity. She has 98 peer-reviewed publications in high-impact journals such as Nature Cell Biology, Nature Communications, Clinical Cancer Research, and Cancer Research. In addition, she has six issued patents.

She has been invited nationally and internationally to lecture on her work. Moreover, she comes with a stellar track record of funding including three active NIH R01s, California Institute of Regenerative Medicine (CIRM) grant and a Pancreatic Cancer Action Network (PanCAN) grant. Finally, she serves as a standing member on NIH study sections and has been an ad hoc member on several additional NIH study sections.



Our faculty and the members of their labs have contributed greatly to the biologic understanding of liver injury, pancreatic cancer, head and neck cancer, lung cancer, sepsis, and many other surgically oriented diseases. With this acknowledgement of our research legacy in mind, our Department has redoubled its efforts this year to advance new scientific ideas, develop new surgical techniques, and deepen our understanding of the pathophysiology of surgical diseases.



DR. JASON SICKLICK APPOINTED EXECUTIVE VICE CHAIR FOR RESEARCH

Another important aspect of our push toward building a better future for our patients was the recent appointment of **Jason Sicklick, MD, FACS**, as our Department's Executive Vice Chair of Research. Dr. Sicklick is a highly accomplished clinician-scientist whose portfolio of research activities spans practice-changing clinical trials, sophisticated translational science, and provocative health services research. His extraordinary record of success in these domains will be fundamental to driving needed change in our research infrastructure, organizational structure, and processes.

Dr. Mark Talamini and **Andrew Lowy, MD, FACS**, skillfully recruited Dr. Sicklick to UC San Diego in 2010 and provided an environment, in collaboration with partners from the Moores Cancer Center, where he has truly blossomed. In a short 10-year period, Dr. Sicklick has helped establish UC San Diego as a premier destination for the care of patients with complex abdominal sarcomas and as one of the leading research centers for understanding the biology of

gastrointestinal stromal tumors. Critical to his success has been a remarkable ability to secure National Institutes of Health (NIH), societal, philanthropic, and industry funding, including an NIH K08 in 2014 that was quickly followed by an NIH R21 in 2016 and two R01 grants in 2019 from the NIH and Food and Drug Administration (FDA). He has secured more than \$1 million dollars in philanthropic grants over the past several years and, along with Razelle Kurzrock, MD, led an industry-funded clinical trial in personalized cancer therapy (I-PREDICT), the results of which were published in *Nature Medicine* this past year.

Dr. Sicklick has served as a research and clinical mentor for countless students and residents and for the past six years has served as an associate program director for the General Surgery Residency. One of his principal roles in that capacity has been in the leadership of the resident research fellowship helping to guide trainees into successful mentored experiences with faculty inside and outside of the Department.

Dr. Sicklick is a graduate of the UCR/UCLA Biomedical Sciences Program, completing his MD from UCLA in 2000. These programs afforded Dr. Sicklick an early introduction to basic and clinical medical research working with Drs. Jeff Matthews, Frances Jurnak, and Julie Freischlag. He matriculated to the General Surgery Residency program at Johns Hopkins during which he completed a three-year research fellowship working in the laboratory of Anna Mae Diehl, MD, a distinguished academic gastroenterologist whose laboratory focused on studying developmental and regenerative pathways in models of chronic liver disease and neoplasia. Dr. Diehl transitioned from Johns Hopkins to Duke University during Dr. Sicklick's research fellowship, which gave me an opportunity to meet him and appreciate his talents. Following residency training, Dr. Sicklick completed a surgical oncology fellowship at Memorial Sloan Kettering Cancer Center, where he furthered his interests in sarcoma and hepatobiliary oncology.



DEPARTMENT OF SURGERY CREATES NEW RESEARCH UNITS

The Department of Surgery research PODs were founded in the Fall of 2020 with the aim of breaking down divisional silos to increase intra- and interdepartmental research in the Education, Health Services Research, and Robotics/Engineering disciplines. Led by **Geoffroy Noel, PhD**, the Education PODs' mission is to create a research community devoted to improving medical and surgical education. The Health Services Research POD, led by **Mahmoud Malas, MD, MHS, FACS**, is dedicated to creating a national center of excellence in outcomes research, epidemiology, and surgical

clinical trials. Finally, the Robotics/Engineering POD is co-led by **Shanglei "Shawn" Liu, MD** and **Tania Morimoto, PhD**. This POD endeavors to bridge the gap between bioengineering and surgery to improve surgical clinical practice. With the intention of fostering collaboration between surgeons, surgeon-scientists, and non-clinical researchers, the PODs are creating the infrastructure for future collaborative studies and grant submissions.



COVID-19

In many ways, 2020 was a year most of us would rather forget. Since the first reports of a deadly respiratory illness in the winter of 2019, our planet has been turned upside-down, rocked by the most impactful pandemic in more than a century.

THE FORTITUDE TO FORGE AHEAD

Too much fear and worry, too much sickness, and too much strife made for memories that could easily overshadow any good that may have come. Our medical teams were pushed to the brink and our family lives were upended. We lost patients and colleagues and loved ones, and many of us suffered our own health crises — COVID-related or not. Add to that widespread political and economic chaos and the year felt practically barren of reason to celebrate.

But surgery is a discipline that is particularly adept at forging ahead through failures and disappointments in its quest to bring healing to patients and communities. Even amidst the greatest global upheaval many of us have ever experienced, we showed our resilience — as individuals and as a team — both in and out of the operating room.

The growth of the Department never stopped. Our ground-breaking research continued and as a result our patients continue to be helped in many novel ways. Our training programs flourished, despite everything that might have derailed our efforts.

Not only did we tackle surgical problems, we took on COVID-19 as a research challenge in and of itself — one that we could understand and conquer through science, innovation and collaboration. Our resulting contributions to the body of COVID-19 knowledge, as described below, became an encouragement and an inspiration during a very discouraging year.

BATTLING COVID-19: FIRST PATIENT ENROLLED FOR ACTIV4 ACUTE INPATIENT CLINICAL TRIAL

Todd Costantini, MD, FACS, along with his collaborators enrolled their first patient into the ACTIV4 Acute Inpatient Clinical Trial. This is part of the National Institutes for Health (NIH) funded Operation Warp Speed, and is a multicenter, randomized study evaluating the optimal anti-thrombotic strategy to limit complications in patients admitted with COVID-19. Dr. Costantini was asked to be the site PI at UC San Diego based on his ongoing work with the CLOTT network, which studies Venous thromboembolism (VTE) in trauma. This has evolved into a truly multidisciplinary effort to coordinate enrollment at both the Hillcrest and Jacobs Medical Center campuses. The team currently includes physicians from Pulmonary Critical Care, Preventive Medicine, Cardiology and research staff in our Division of Trauma.

DEVELOPING MOBILE TELEMANNIPULATION ROBOTS FOR REMOTE EXAMS

Earlier this year, **Tania Morimoto, PhD**, received a \$1.2 million grant to develop an advanced class of mobile telemanipulation robots that allow healthcare workers to safely conduct remote exams and provide quarantined Californians a safe way to interact outside their home. Called UC Iris and funded by UC Multicampus Research Programs and Initiatives (MRPI), these easy-to-operate, low-cost mobile robots grasp objects and open doors, giving operators a sense of true immersion in a remote location. Morimoto and her colleagues will work closely with UC healthcare workers to explore how these robots can improve quality of life for isolated groups and increase their independence. The team is specifically focused on Latino communities, as they represent 71% of fatalities among 18-64 year-old COVID-19 patients.



STUDY: COVID-19 INFECTION COMBINED WITH BLOOD CLOTS WORSEN PATIENT OUTCOMES

While respiratory issues continue to be the most common symptom of a COVID-19 infection, new research indicates the disease could also be associated with hypercoagulability, or increased tendency of the blood to clot. In a new study published November 20, 2020 in the journal *EClinical Medicine* by *The Lancet*, researchers from UC San Diego Health found that blood clots led to an increased risk of death by 74 percent.

Led by **Mahmoud Malas, MD**, division chief of Vascular and Endovascular Surgery at UC San Diego Health, researchers reviewed 42 different studies involving more than 8,000 patients diagnosed with COVID-19. Using random models, the team produced summary rates and odds ratios of mortality in COVID-19 patients with thromboembolism, blood clots — and compared them to patients without these conditions to determine what effect blood clots may have on risk of death.

42 DIFFERENT STUDIES

8,000 PATIENTS

RESEARCHERS DESIGN A RAPID, AT-HOME COVID-19 SALIVA TEST

Partha Ray, PhD, and his collaborators have designed an inexpensive, rapid and accurate testing tool for COVID-19. The diagnostic test can be performed within one hour at home or health care centers without the requirements of expensive instruments or operational training.

Saliva samples are first collected in a tube and mixed with a pre-formed complex that is assembled on magnetic beads. If the virus or viral protein is present, an enzyme is released in the solution. The solution is then separated from the magnetic beads with the help of a magnet. The collected solution is then mixed in a separate tube, with a sucrose (sugar) solution, which is converted to glucose by the enzyme. The glucose formed, which is proportional to the viral load, is then read out by using a common glucometer.

The team's study found the test had a 100 percent sensitivity, meaning it was able to detect all patients who were positive for COVID-19.

DRS. VAHABZADEH-HAGH AND WEISSBROD RECEIVE AIM AWARD

Andrew Vahabzadeh-Hagh, MD, and co-researcher Phillip Weissbrod, MD were recognized this year by UC San Diego's Accelerating Innovations to Market (AIM) for their work to combat viral transmission during endoscopic procedures, be it COVID-19 or viruses in general. The doctors propose a mask for patients to wear during endoscopic procedures that filters air going into and out of a person's respiratory system with easy insertion of endoscope.

AIM is a unique program at UC San Diego wherein the tightly linked efforts between private and public resources manifest in a focused effort to advance novel technologies to market.

HEAD & NECK CANCER CENTER CO-DIRECTOR CREATES COVID-19 PANDEMIC CLINICAL GUIDELINES AND PERSPECTIVES

The California Consortium of swallowing, including speech-language pathologists from UCSD, UC Davis and Stanford University, partnered together to create effective head and neck cancer management regimen in the era of COVID-19. The team outlined how telemedicine can provide a safe and efficient alternative to meeting patients in person. The consortium reviewed multiple methods for maximizing the virtual care experience, including strict criteria for appropriate use of PPE and guidelines for in-person objective evaluation. The summary of work was recently published by the American Speech and Hearing Association. Since its distribution, the article has serviced as a sound guideline for institutions across the country struggling to meet the complex demands of the head and neck cancer population.

NAVIGATING TELEMEDICINE FOR FACIAL TRAUMA DURING THE COVID-19 PANDEMIC

David Hom, MD, FACS, was a co-author for a paper published in *Laryngoscope Investigative Otolaryngology*, which examines the increase of telemedicine and telecommunication support tools into the otolaryngology practice in response to safety and access demands caused by the COVID-19 pandemic. This systematic review of telemedicine for evaluation of face trauma found that telemedically-conducted facial trauma evaluation has the potential to be developed in the areas of multidisciplinary remote consultations, facial trauma triage, patient engagement and postoperative follow-up.

ONLINE AND PANDEMIC ANATOMY LEARNING AT UCSD SCHOOL OF MEDICINE

At the outset of the pandemic, anatomy learning moved abruptly from the dissection laboratory to Zoom sessions and "virtual" laboratories. Students interacted with digital 3D models of anatomical regions developed with the Complete Anatomy platform (3D4Medical).

This fall, first-year medical students embarked on hybrid education with limited in-person learning and precautions that minimize infection risk. Students now study online lessons except for 2 days of on-campus learning, one of which includes anatomy laboratory.

Rigorous safety measures are followed. Students wear masks at all times when on campus. Students are grouped into cohorts of four, each of which constitutes an anatomy dissection group. For other on campus curricular events two cohorts are combined to form a study group of eight students e.g., for case-based learning. Cohorting the students minimizes the risk of any potential virus transmission, and it would facilitate targeted mitigation in the event of an infection. Teaching time has doubled since spacing the students requires teaching each laboratory session twice every week, one-half of the class each time. The full time anatomy facilitators, **Mark Whitehead, PhD** (now emeritus), David Rapaport, PhD, Paul Kingston, PhD, and our new colleague, **Geoffroy Noel, PhD**, appreciate our surgeon colleagues who join us to teach in the laboratory.

Read more about our training efforts on page 18.



Andrew Vahabzadeh-Hagh, MD



Phillip Weissbrod, MD



VACCINE SUPERSTATION

UC San Diego Health, the County of San Diego and the San Diego Padres teamed up to help vaccinate the San Diego community with superstations throughout the county. To accomplish this, they called on medical and non-medical community members to volunteer their time and services. For many members of our department, the experience became a gratifying way to help the community.

CLINICAL HIGHLIGHTS

Compassionate, Inclusive Care

The highly respected surgeons and surgical staff of the UC San Diego Department of Surgery work hard to deliver innovative clinical care to patients every day. Our surgeons perform some of the most advanced surgical procedures in the world, including Pulmonary Throboendarectomy surgery, minimally invasive and robotic surgery, liver transplants and complex cancer resections. Our ground-breaking clinical trials provide patients with a lifeline to hope, and the close-knit team in our UC San Diego Health Trauma Center saves lives every day.

TRAUMA CONTINUES TRADITION OF WORLD-CLASS CARE

Trauma is the leading cause of death in the U.S., yet fewer than eight percent of hospitals have a trauma center. UC San Diego Health — home of the region's first Level 1 Trauma Center — has repeatedly proven to be one of the top performing trauma centers in the U.S. and has among the lowest mortality rates for trauma patients. Our team has provided care for critical injuries in San Diego and Imperial Counties since 1976. The Trauma Center at UC San Diego Medical Center is part of the San Diego Trauma System, a collaborative, lifesaving countywide effort of six hospitals,

where we care for more than 3,200 patients every year. Our state-of-the-art trauma resuscitation unit provides the highest quality of comprehensive care to a larger number of severely injured according to data recently released from a national trauma registry. Our trauma bays, resuscitation suites and surgical intensive care unit (SICU) are equipped with leading-edge monitoring, imaging and life-support technologies. We also have a surgical progressive unit for patients recuperating from surgical treatment of a traumatic injury.

UC SAN DIEGO HEALTH REVIVES NON-BEATING DONOR HEART FOR SUCCESSFUL TRANSPLANTATION

UC San Diego Health is the first hospital on the West Coast to perform heart transplant surgery from a donor after circulatory death, or DCD, using a new portable organ care system. The successful surgery is part of a national interventional clinical trial that could increase organ donation by an estimated 20-30 percent, resulting in less waiting time for patients in need of a new heart.

DCD involves retrieving organs from hospitalized donors who have died because their heart has stopped, either naturally or because life support has been discontinued. In such cases, with prior consent, surgeons remove the organ — within 30 minutes — and connect it to a machine that perfuses the heart with warm blood, reviving and

keeping the organ beating and functional for assessment and possible transplantation. The warm perfusion system can potentially keep the organ viable for longer periods than traditional cold storage, allowing for transporting organs over much longer distances.

"When it comes to how organs are procured and preserved from donors, this machine is changing the paradigm for heart transplants," said **Victor Pretorius, MBChB**, surgical director of cardiac transplant and mechanical circulatory support at UC San Diego Health. "Not only will this increase the number of hearts available for those in need, but it can also optimize the timing of the transplant operation and utilization of operating room resources."

TRANSPLANT TEAM PERFORMS SAN DIEGO'S FIRST HIV LIVER TRANSPLANT

UC San Diego Health is the first hospital in San Diego and only health care system in Southern California to transplant a liver from a donor with Human Immunodeficiency Virus (HIV) into an HIV-positive recipient. The successful surgery is part of a national clinical trial that could result in more

life-saving options and less time on the transplant wait list for HIV-positive patients.

UC San Diego Health is participating in two national clinical trials supported by the HIV Organ Policy Equity (HOPE) Act, which was passed by Congress in 2013. The HOPE

Act permits transplant teams in the United States with an approved research protocol to transplant organs from donors with HIV to qualified recipients with HIV and end-stage organ failure.

"We are excited to be part of this groundbreaking effort that is resulting in more lives saved. The patient who underwent the liver transplant is doing well and we are incredibly

grateful to the donor and family. Both have helped move science forward," said **Gabriel Schnickel, MD**, surgical director of liver transplantation at UC San Diego Health. "The patients who will receive an organ in this trial are very ill and time is critical, so receiving an HIV organ increases their chances of getting a life-saving transplant."

COLORECTAL SURGERY RECEIVES ACCREDITATION FROM NAPRC

The colorectal disease team has spent three years preparing to achieve Accreditation Status from the National Accreditation Program for Rectal Cancer (NAPRC). The accreditation not only requires a multidisciplinary approach to rectal cancer care, but a specific mandate to directly communicate the board's findings to the patient and the referring physician. This has increased satisfaction from our patients and our referring physicians. The ultimate goal is to be sure everyone is on the same page when it comes to caring for patients with rectal cancer. We get one chance to do this right, we absolutely want to do our best.

Our team, led by our NAPRC Program Director, **Nicole Lopez, MD**, and our Program Coordinator, Ellen Fink, PA, has worked hard to establish a framework for our multidisciplinary rectal cancer tumor board. The conference requires weekly participation from physicians who are essential to the care of rectal cancer patients including radiologists, pathologists, medical oncologists, radiation oncologists, and colorectal surgeons. Facilities with the NAPRC accreditation have undergone a rigorous review process that ensures state of the art cancer care for patients with this devastating disease.

Rectal cancer can have significant, and lasting implications

for bowel, urinary and sexual function. The group effort required to adhere to NAPRC standards has stimulated camaraderie and purpose, enhancing our ability to recognize and take advantage of the outstanding skills and experience of our team. We believe this has increased our capacity to approach patients with oncologic rigor in balance with patient values and considerations for quality of life. Our team is supported by a host of experts in the UCSD Moores Cancer Center, who are critical to our expert management of rectal cancer patients, including Urologic Oncology, Gynecologic Oncology, Thoracic Surgery, Palliative Care, Ostomy support and Surgical Oncology. Together, this powerhouse elevates the care for rectal cancer patients in the region. UCSD's program is the first accredited program in Southern California and is one of only 23 centers accredited in the US.

Our team is extremely proud to have earned this distinction as it reflects the talent, hard work and dedication of the entire colorectal disease team at UCSD. Our goals are to build a stronger bonds with the community to facilitate the care of rectal cancer patients in the region and to use our clinical expertise to inform our research, translational and clinical trial efforts in the future.

ANNOUNCING OUR NEW VASCULAR AND ENDOVASCULAR CLINIC

UC San Diego Health is excited to announce the opening of a new clinic for vascular and endovascular surgery at UC San Diego Health in La Jolla, which will help treat conditions in the arteries and veins ranging from venous insufficiency to dialysis access maintenance and peripheral arterial disease.

"Oftentimes when patients require vascular surgery, they need treatment quickly," said **Mahmoud Malas, MD**, chief of vascular and endovascular surgery services at UCSD Health. "This new location allows us to treat patients quickly and effectively. We can see the patient immediately, perform non-invasive testing, diagnose the underlying pathology and take care of the problem all in one place."

The clinic will also be a magnet for research, allowing for

UCSD Health to be a leader in outpatient vascular and endovascular procedures. UC San Diego Health is a leading institution for patient outcome research and quality improvements, and the research done at the new location will continue to expand and innovate cutting-edge practices and technologies in the vascular and endovascular surgery fields.

"When patients come in for vascular and endovascular procedures, they should expect to be treated like family," Malas said. "They're going to have access to the best quality care and treatment from leading physicians who will take exceptional care of them."

UCSD CENTER FOR ASTHMA AND SINUS DISEASE AWARDED CENTER OF EXCELLENCE BY THE WORLD ALLERGY ORGANIZATION (WAO)

The UC San Diego Center for Asthma and Sinus Disease is a multidisciplinary collaboration amongst the Division of Otolaryngology (Rhinology), Division of Rheumatology, Allergy and Immunology, and the Division of Pulmonary, Critical Care, and Sleep Medicine to provide comprehensive patient-centered care and to engage in research endeavors and clinical trials to improve the well-being of patients with asthma and sinus disease. The World Allergy Organization

(WAO) recently named UCSD Center for Asthma and Sinus Disease as a Center of Excellence (one of six centers in the USA) in recognition of UCSD's comprehensive bench-to bedside mission involving multidisciplinary scientific and clinical innovation and education.

RESEARCH HIGHLIGHTS

Research is fundamental to the UC San Diego Department of Surgery. Our rigorous scientific study — from advancing new ideas to developing new surgical techniques and deepening our understanding of the pathophysiology of surgical diseases — is laser-focused on meeting the ever-growing needs of patients. These efforts are led by Vice Chair for Research Dr. Jason Sicklick and Vice Chair of Surgery for Clinical Research Dr. Malas Mahmoud.

LASER-FOCUSED RESEARCH

We encourage our faculty, postdoctoral fellows, surgical trainees, and medical students to use the Department's resources and UC San Diego's world-class research environment to collaborate with an extensive network of researchers locally, nationally and internationally. Such collaborations are the foundation of our research efforts and routinely lead to noteworthy accomplishments and breakthroughs — some of which are reflected in the following research-related highlights from the past academic year.

PANCREATIC CANCER TUMORS USE MULTIPLE MECHANISMS TO AVOID STARVATION

Published in the journal *Cancer Cell*, an international team of researchers, "led by **Andrew Lowy, MD, FACS**, and scientists at UC San Diego School of Medicine and Moores Cancer Center, describe how pancreatic cancer cells use an alternative method to find necessary nutrients, defying current therapies, to help them grow and spread. All cancer cells require a constant supply of nutrients and most achieve this through the creation of vascular networks, however pancreatic cancer cells employ other adaptive mechanisms such as autophagy, also known as self-eating. Autophagy allows nutritionally stressed cancers to digest intracellular proteins, especially denatured or damaged proteins, and use the liberated amino acid building blocks as an energy source to fuel their metabolism. The new data from this research demonstrate the promise of targeting tumor metabolism as a treatment strategy and that success will likely require combining multiple agents for multiple targets.

GRATEFUL PATIENT DONATES \$1 MILLION FOR PEDIATRIC PATIENTS WITH FACIAL DEFORMITIES

Amanda Gosman, MD, FACS, was the recipient of a philanthropic donation of one million dollars to support her research on the quality of life measurements in pediatric patients with facial deformities. This donation was pledged by Mrs. Cathleen A. Tryon and Mr. Richard K. Tryon Jr., through The Cathy and Richard Tryon Pediatric Facial/ Psychological Trauma Research Fund. When Richard Tryon was nine-years-old, he was involved in a serious automobile accident that left him with critical facial injuries that required 10 hours of surgery. It took him approximately three months post-surgery to begin to recover physically, but the psychological impact has taken years to address. It is this deeply personal experience that inspired Tryon and his wife, Cathy, to give back to the university where they first met as students in 1970. Sixty-two years after his childhood car crash, Tryon realized he had the opportunity to help patients who confront the same challenges and emotions he has throughout his life.

GENETIC TESTING COST EFFECTIVE FOR NEWLY DIAGNOSED GIST

Because gastrointestinal stromal tumors (GIST) are sensitive to the targeted small molecule therapy imatinib, oncologists tend to treat all patients with metastatic GIST with this drug. However, because this rare type of cancer is caused by different genetic mutations, imatinib does not help all patients equally. To determine whose cancer may be most responsive, the National Comprehensive Cancer Network suggests that patients undergo genetic testing to identify each individual's tumor mutations. And yet, only 30 percent of patients have genetic testing at the time of diagnosis, likely due to concerns over cost and utility of testing, said **Jason Sicklick, MD**, professor of surgery in the Division of Surgical Oncology at University of California San Diego School of Medicine "We recommend that all patients with a new diagnosis of metastatic GIST undergo genetic testing prior to the initiation of first-line chemotherapy," said Sicklick. "In doing so, those who are unlikely to benefit from imatinib can be given a treatment better suited for their individual tumor."

NIH FUNDS UNDERSTUDIED SOURCE OF POTENTIAL NEOANTIGENS FOR HEAD & NECK CANCER

Theresa Guo, MD, was awarded an NIH KL2 career development award for her work in "Identification of splice variant derived neo-antigens in head and neck squamous cell carcinoma as targets for tumor vaccine therapy." Dr. Guo's overall objective is to investigate alternative splicing events, which are present and functionally active in head and neck squamous cell carcinoma (HNSCC). These splicing events represent an understudied source of tumor-specific protein diversity and potential neoantigens, which can be potential vaccine targets to enhance antitumor immunity. The research will build a foundation for a career that bridges computational methods with translational applications of precision immunotherapy in head and neck oncology.

NIH FUNDS ALCOHOL-ASSOCIATED LIVER DISEASE PHASE ONE STUDY

In October, **Tatiana Kisseleva, MD, PhD**, and her two co-principal investigators Drs. Rohit Loomba, PhD, and Sheldon Morris, PhD, received National Institute on Alcohol Abuse and Alcoholism funding for their U01 grant submission, "Novel IL-23 Inhibitor for the Treatment of Alcohol Associated Liver Disease". Change to: This study examined how a phase 1 dose escalation of the anti-IL-23 antibody guselkumab affected patients with alcohol use disorder and alcohol-associated liver disease. Assessing the pharmacokinetics of guselkumab in this patient population and searching for biomarkers for treatment response are additional aims of the proposed studies. It is quite notable that Dr. Kisseleva's laboratory conducted the preclinical studies in mice that demonstrate the effectiveness of IL-23 blockade as a strategy to improve alcohol-related liver damage. Her insights and perseverance were fundamental in the translation of these findings into the clinical setting. Along with Drs. Loomba and Morris, she is part of a team with world-class expertise in the field of alcohol-related liver injury and in the conduct of clinical trials in this patient population.

DR. JASON SICKLICK RECEIVES THE 2021 RARE IMPACT AWARD

Included among this year's National Organization for Rare Disorders (NORD®) Rare Impact Award honorees was **Jason Sicklick, MD, FACS**, who was recognized for his exceptional work benefiting the rare disease community. The Rare Impact Awards program is part of the Living Rare, Living Stronger NORD Patient and Family Forum, an annual conference that brings patients and families, advocates, health care professionals and other supporters together for learning, sharing and connecting.



322 TOTAL PUBLICATIONS

158 NUMBER OF UNIQUE JOURNALS

MOST FREQUENT JOURNALS:

VASC SURG: **19**
ANN PLAST SURG: **11**
IN VIVO: **9**
INT FORUM ALLERGY RHINOL: **9**
J SURG RES: **8**
J THORACIC CARDIOVASC SURG: **8**

FACULTY AUTHOR REFERENCE TYPES:

FIRST: **45**
MIDDLE: **300**
LAST/CORRESPONDING: **183**

TRAINING HIGHLIGHTS

Training the Next Generation

Surgeons who receive training in our world-class facilities and programs are well-prepared to take on the challenges of the future – even amid a global pandemic. Our instructors have stepped up to provide virtual learning to many of our trainees, and our Department continues to offer fully accredited academic residency training programs in several surgical specialties.

WELCOME DIVISION OF ANATOMY CHIEF DR GEOFFROY NOEL

This year we officially welcomed **Geoffroy Noel, PhD**, to the role of Chief of the Division of Anatomy. Dr. Noel follows in the footsteps of former Anatomy Chief, **Mark Whitehead, PhD**.

Dr. Noel comes to us from McGill University in Montreal where he served as Associate Professor and Director of the Division of Anatomical Sciences. Dr. Noel completed a Ph.D. in Anatomy and Cell Biology at the University of British Columbia (UBC) in 2010 where his principal research involved the role of aquaporin in the pathophysiology of brain edema. On completion of this degree he secured a post-doctoral teaching position at McGill in the Department of Anatomy and Cell Biology for two years before returning to UBC in a tenure track position in the Department of Cellular and Physiology Sciences. In these initial experiences Dr. Noel was quickly recognized for his excellence in the instruction of anatomy, pathology, embryology, and neurosciences. He was recruited back to McGill in 2014 where he remained until his transition to UC San Diego.

As the director of Anatomical Sciences at McGill, Dr. Noel was responsible for anatomy instruction across a broad spectrum of learners including undergraduates, future physicians, nurses, and others. He introduced a number of innovative curricular changes and teaching strategies. These include 3D printing, augmented reality incorporating body donor imaging, peer-instruction methods, and new approaches to body donation. Dr. Noel has consistently earned the respect and admiration of his pupils as evidenced by the regular receipt of institutional teaching awards. He is widely published in the field of anatomy instructional methodology and has been quite active in facilitating anatomical instruction in underserved areas around the world.

TEACHING FROM A DISTANCE: MEDICAL EDUCATORS ASSESS THE EFFECTS OF PANDEMIC ON SURGICAL TRAINING

The Covid-19 pandemic has presented medical educators with the unprecedented challenge of ensuring that those in various stages of medical training can continue to work and learn while minimizing risk to patients, trainees, and the community. In many instances, this provided an opportunity to implement innovative remote learning strategies for acquiring fundamental clinical skills.

Charles Coffey, MD, and colleagues in the UC San Diego School of Medicine sought to understand the student experience with remote learning as well as the resources, structure, and formats that best facilitate learning in this setting. Two hundred UCSD medical students participated in a survey that examined how various features of the curricula impacted student experience with remote learning in both the preclinical and clinical stages of education. The group's findings demonstrated the negative impacts

that the pandemic had on student participation in direct patient care, and highlighted how strategic incorporation of select remote-learning components may permit a favorable student experience, even when opportunities for on-site participation are limited. Their findings have already informed a number of aspects of the medical curriculum at UCSD, and it is hoped that this work will provide valuable insight for other medical educators as they continue to navigate clinical learning during the ongoing pandemic.

VIRTUAL SUB-INTERNSHIPS AND ROTATION: THE NEW TRAINING NORMAL

As the entire world learned to navigate life during a pandemic, the UC San Diego Department of Surgery adapted quickly by establishing virtual programs for medical students and beyond.

Our Division of Plastic and Reconstructive Surgery was the first program in the nation to successfully develop and implement a virtual sub-internship experience for rising fourth-year medical students. **Amanda Gosman, MD, FACS**, **Samuel Lance, MD, FACS**, and **Christopher Reid, MD**, worked with the entire faculty and resident group, led by **Drs. Meera Reghunathan, Riley Dean**, and **Adam Hauch**, to develop a meaningful curriculum and an immersive experience for the students. The goals for the virtual surgical sub-internship were focused on student preparation for residency and remain relatively the same as those outlined by the core competencies for in-person rotations. The components of the curriculum included a self-study syllabus, virtual case reviews, virtual suture lab, educational teleconferences, weekly research meetings, participation in research, and mentorship meetings.

This sub-internship was unique in that the accepted sub-interns per rotation is 2-3 students. Many other programs accept 10-20 sub-interns at a time. The sub-interns in this program receive more time with faculty and

residents in comparison to most models that have since been implemented around the country. The division also took special care to accept all applicants from institutions without home residency programs for plastic and reconstructive surgery. Dr. Amanda Gosman, Division Chief, felt strongly about providing this disadvantaged group the same opportunity as their peers at institutions with plastic and reconstructive surgery residency programs.

In addition to the Division of Plastic and Reconstructive Surgery's program, General Surgery residents from the UC San Diego Department of Surgery held a virtual rotation for fourth year medical students (Our Division of Otolaryngology and Head & Neck Surgery created a similar program). The General Surgery program consisted of a two-week online experience to remotely meet residents, fellows and attendings. Applicants ranked specialties they were interested in – including surgical oncology, trauma/acute care surgery, colorectal, minimally invasive surgery and vascular surgery – and spent a week each on two specialty rotations. Depending on the specialty, a schedule might include one-on-one meetings with a faculty mentor, surgery rounds, virtual meetings to get to know program directors, and a virtual tour of San Diego and the residency at UC San Diego with general surgery residents.



From left to right: **Geoffroy Noel, Ph.D** and **Mark Whitehead, PhD**.
Below: **Charles Coffey, MD**



FIRST SOUTHWEST OHNS BOOT CAMP

The PGY -1 year is the crucial time in surgical residency to learn how to respond to emergencies in "real time." Simulation-based education as introductory boot camps are important to equip the early resident with the necessary procedural skills to become a proficient young surgeon.

By exposing residents early in their training with simulation based training, they get the early opportunity to practice diagnostic, technical and managerial skills before encountering them in emergent "real-life" situations.

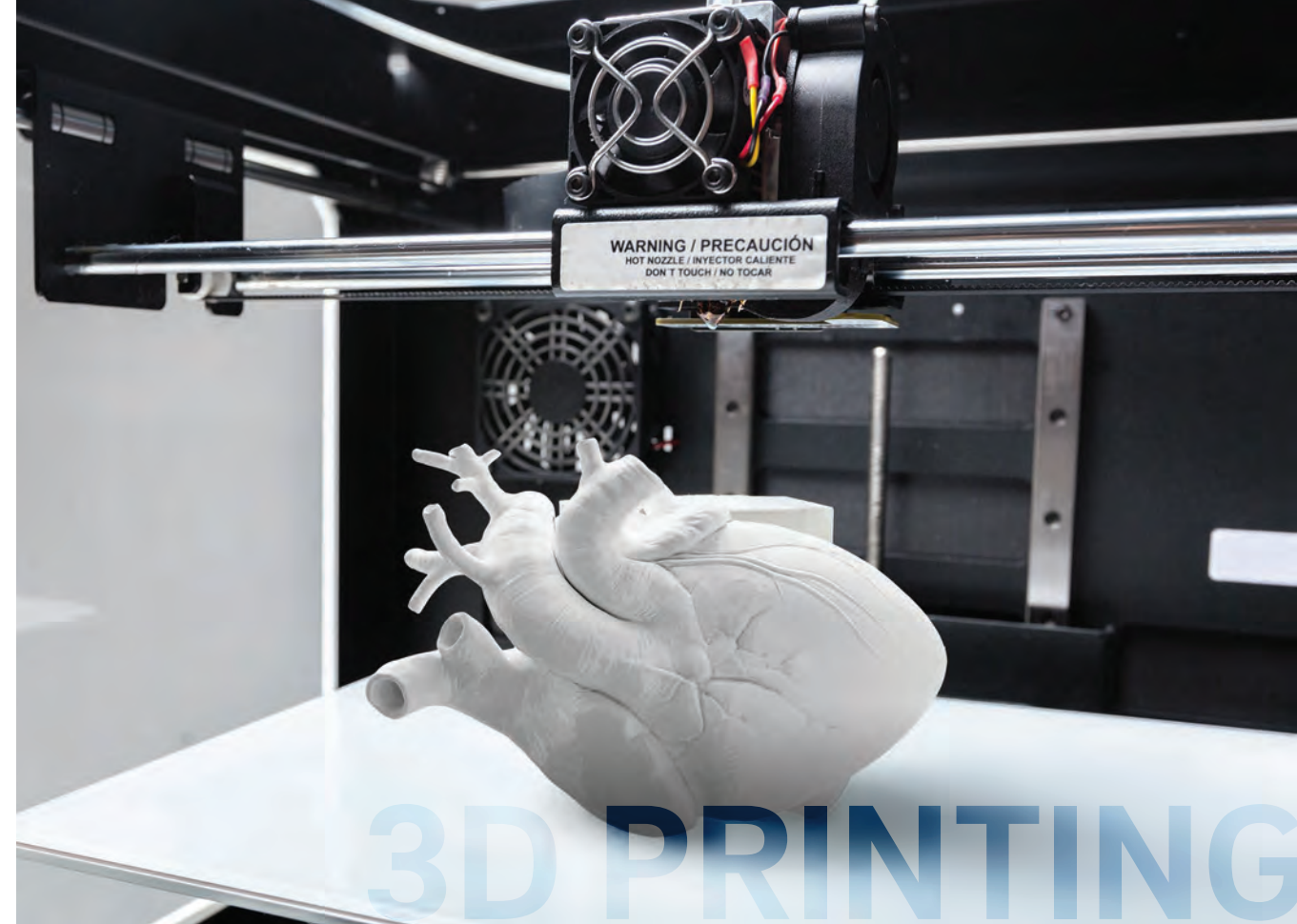
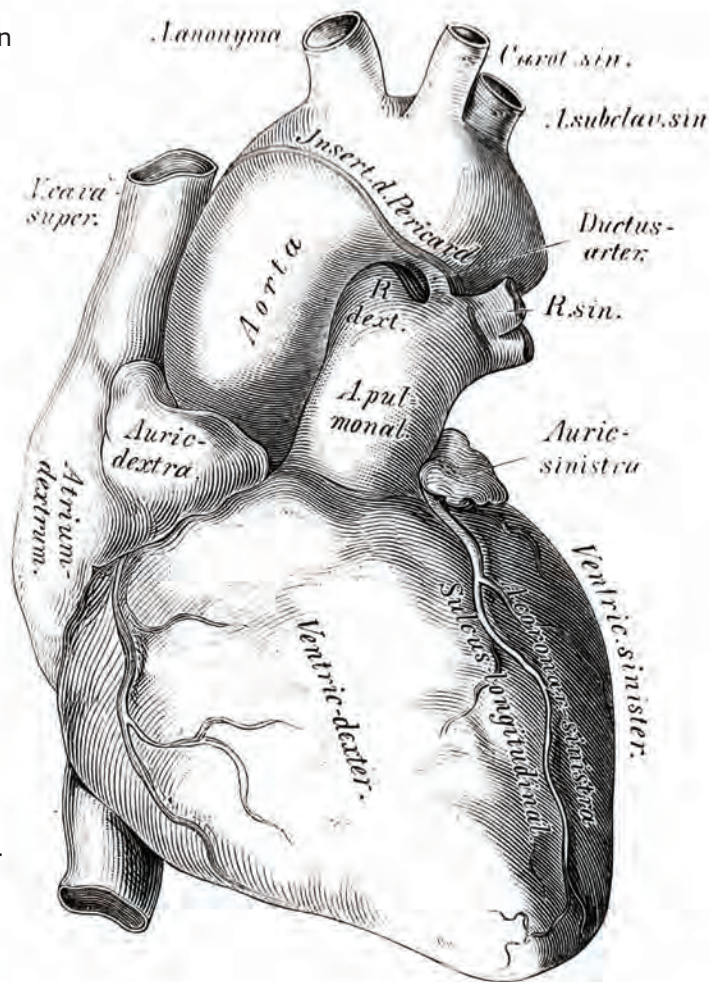
For this purpose, UC San Diego Surgery successfully organized and completed its first Southwest Otolaryngology Hands-on Boot Camp, entitled "Effective Responses to Emergencies in Otolaryngology." A combination of simulation airway stations, pig tracheas, skeletal models and cadavers were used during this boot camp at UC San Diego's Simulation Center and the Center of the Future of Surgery. Residents from UCLA, UCI, Cedars Sinai and UC San Diego attended this hands-on boot camp course. Due to the COVID circumstances, the program was modified so that several of the simulation surgical exercises occurred outdoors and PPEs were worn.

DIVISION OF ANATOMY

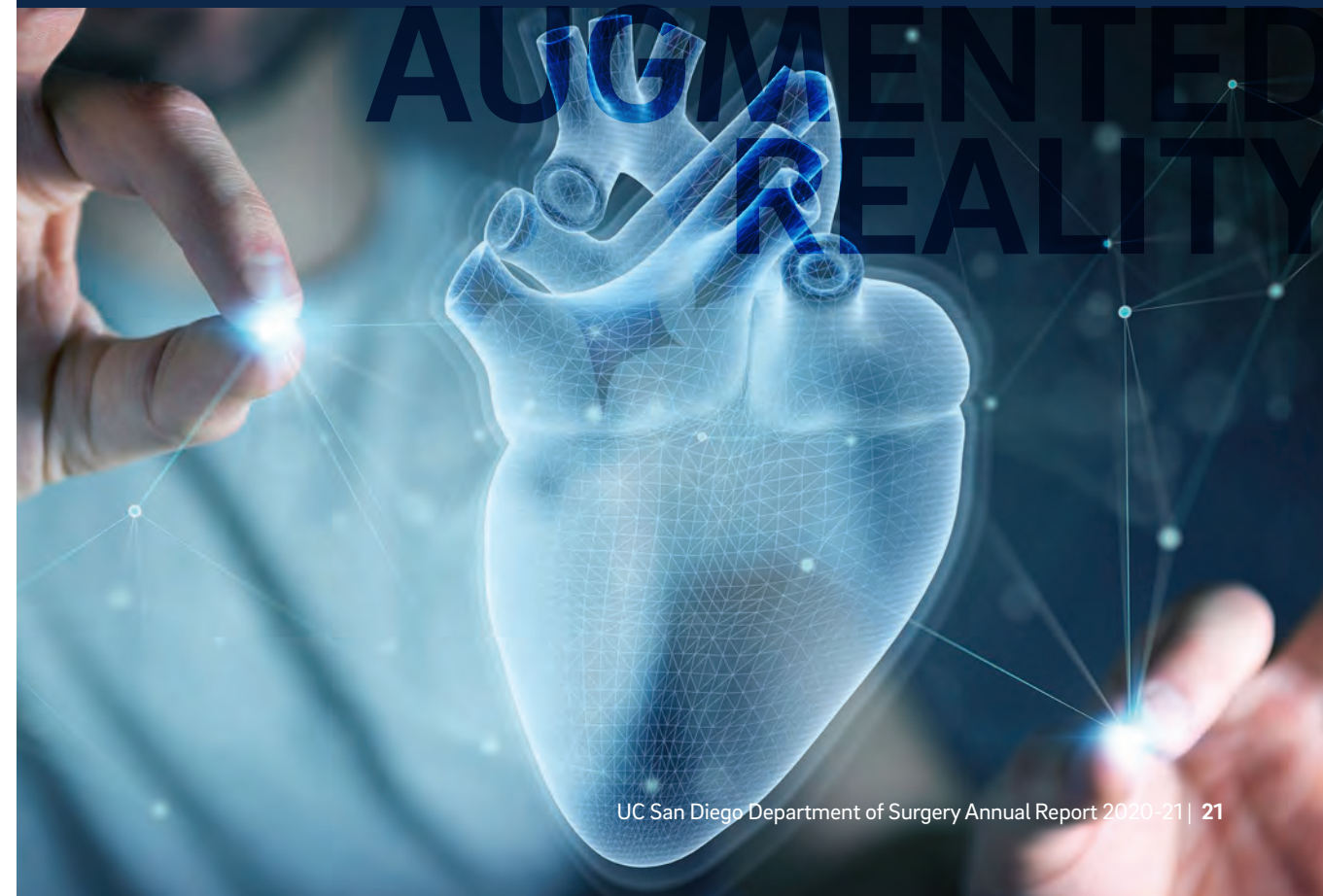
The Division of Anatomy is responsible for the anatomy education of all doctors-in-training at UC San Diego. Our teaching approach centers on the dissection laboratory, where student doctors actively learn about human structure from surgeons equipped with an innovative curriculum that emphasizes clinical applications.

The year 2020 was marked with the succession of **Mark Whitehead, PhD**, by **Geoffroy Noel, PhD**, as Chief of the Division of Anatomy in the Department of Surgery. We have been extraordinarily blessed as an institution by the leadership of Dr. Whitehead, who for three decades served in this capacity and the associated role of directing anatomy instruction for the UC San Diego School of Medicine. He has served this institution with class, grace, and humility, and in doing so modeled traits that are as important as knowledge of anatomy is for future healers.

Dr. Noel transitioned to UC San Diego in the middle of the pandemic and was supported by **Drs. Mark Whitehead, PhD, David Rapaport, PhD, Paul Kingston, PhD**, Drs. Sam Ward, Steve Howe, Murray Reicher, Timothy Bassell, **Joshua Boys, PhD, Ava Armani, MD**, Dorothy Tamayo-Murillo, Jolene Rudell, **Charles Coffey, MD**, and Grant Neifeld. As a team they ensure that our students developed a fundamental appreciation for anatomy despite the physical distancing in the laboratory.



Dr. Noel comes to us from McGill University in Montreal, where he introduced a number of innovative curricular changes and teaching strategies. These include **3D printing, augmented reality (incorporating body donor imaging),** interprofessional near peer-instruction methods and new approaches to body donation.





In 2021, a new MS4 elective was created (SURG423 "Applied Radiological and Surgical Anatomy"), which complements the other two electives offered by the Division (SURG232 and 261). The "Drawing as a Way of Seeing" elective (SURG232), taught by our two artists in residence, Larry and Debby Kline, was able to take place with models through Zoom and a session with our body donors was also organized for the students.

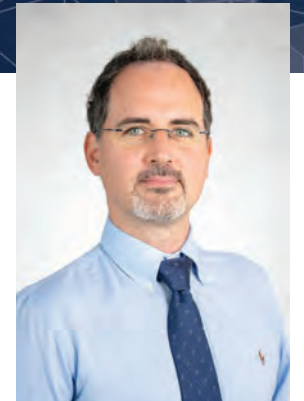
The Division also started a new collaboration with the T. Denny Sanford Institute for Empathy and Compassion at UC San Diego to implement new interventions in the Anatomy laboratory. These interventions guide students as they navigate the line between clinical detachment and empathy, and will complement an overhaul of the Anatomy Thread. The Anatomy Thread was also changed to better simulate the clinical environment, with surgical approaches and suturing techniques taught during the laboratory sessions and an improved integration with radiology.

The visibility of the Division was excellent this year, with many publications from Dr. Noel and the start of a new hub for medical education research—which is reaching new heights with the creation of a Medical Education Research POD in Surgery.

SURG 232 Representing the Human Body: Drawing as a Way of Seeing

Drawing can potentially train the hand "to see" and the eye "to feel." To learn to draw the human body with empathy is to acquire valuable training in visual sensitivity and perception. No special graphic skills are required.

FACULTY



Geoffroy Noel, PhD

CHIEF OF DIVISION
Geoffroy Noel, PhD

**ACADEMIC AFFILIATE
HEALTH SCIENCES
EDUCATOR OFFICE
OF EDUCATIONAL
SUPPORT SERVICES**
Paul Kingston, PhD

**PROFESSOR OF SURGERY
EMERITUS (ACTIVE)**
David H. Rapaport, PhD

PROFESSOR OF SURGERY
Mark Whitehead, PhD

**RECALL FACULTY OF
SURGERY"**
Allen Ryan, PhD
Nigel Woolf, PhD

**UC SAN DIEGO SCHOOL
OF MEDICINE "ARTISTS IN
RESIDENCE"**
Larry and Debby Kline

SELECTED PUBLICATIONS

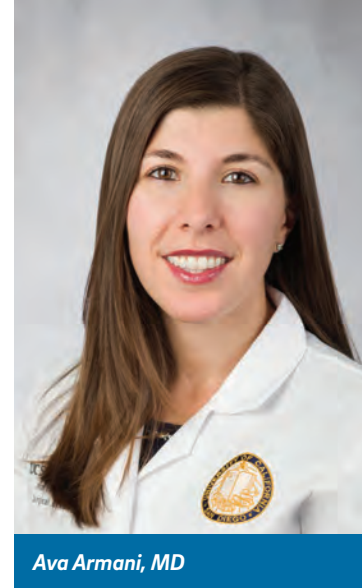
1. Wu A, Maddula V, Singh J, Sagoo MG, Chien CL, Wingate R, Kielstein H, Traxler H, Brassett C, Waschke J, Vielmuth F, Sakurai T, Zeroual M, Olsen J, El-Batti S, Viranta-Kovanen S, Kitahara S, Keay K, Kunzel C, Bernd P, Noël GPJC. Alternatives to Student Outbound Mobility-Improving Students' Cultural Competency Skills Online to Improve Global Health Without Travel. *Med Sci Educ.* 2021 Jun 7;31(4):1-11. doi: 10.1007/s40670-021-01332-9. Epub ahead of print. PMID: 34123512; PMCID: PMC8184130.
2. Wu A, Leask B, Noel G, de Wit H. It Is Time for the Internationalization of Medical Education to Be at Home and Accessible for All. *Acad Med.* 2021 Sep 1;96(9):e22. doi: 10.1097/ACM.0000000000004201. PMID: 34108376; PMCID: PMC8378433.
3. Gao Q, Noël G, Der Khatchadourian Z, Taqi D, Abusamak M, Henley A, Menassa K, Velly A, Emami E, Mongeau L, Tamimi F. Needle-free injection: Dental infiltration anesthesia. *Int J Pharm.* 2021 Jul 15;604:120765. doi: 10.1016/j.ijpharm.2021.120765. Epub 2021 Jun 1. PMID: 34087413.
4. Noël GPJC, Heron J, Naismith C. From 1883 to 2019; Variables Influencing Body Procurement at McGill University. *Anat Sci Educ.* 2021 Feb 15. doi: 10.1002/ase.2063. Epub ahead of print. PMID: 33590720.
5. Wu A, Yu ACX, Chang CS, Goel R, Sagoo MG, Sakurai T, Viranta-Kovanen S, Chien CL, Traxler H, Waschke J, Kitahara S, Keay K, Olsen J, Brassett C, Batti SE, Vielmuth F, Sigmund AM, Zeroual M, Kunzel C, Bernd P, Wingate R, Kielstein H, Noel GPJC. Initiating Students' Reflections on Life's Passing in the Anatomy Course - an International Observation at 14 Universities. *Ann Anat.* 2021 Sep;237:151741. doi: 10.1016/j.aanat.2021.151741. Epub 2021 Apr 21. PMID: 33892095.
6. Wu A, Maddula V, Yu ACX, Goel R, Shimizu H, Chien CL, Wingate R, Sagoo MG, Kielstein H, Traxler H, Brassett C, Waschke J, Vielmuth F, Keay K, Zeroual M, Sakurai T, Olsen J, El-Batti S, Viranta-Kovanen S, Kitahara S, Kunzel C, Bernd P, Noel GPJC. An Observation of Healthcare Professions Students' Perceptions During the COVID-19 Pandemic. *Med Sci Educ.* 2021 Feb 18;31(2):1-9. doi: 10.1007/s40670-021-01240-y. Epub ahead of print. PMID: 33619444; PMCID: PMC7889410.
7. Noël GPJC, Ding W, Steinmetz P. 3D Printed Heart Models Illustrating Myocardial Perfusion Territories to Augment Echocardiography and Electrocardiography Interpretation. *Med Sci Educ.* 2021 Jan 8;31(2):439-446. doi: 10.1007/s40670-020-01177-8. PMID: 34457902; PMCID: PMC8368875.
8. Retchkiman M, Doucet O, Dimitropoulos G, Efanov JI, Lussier B, Habib F, Noël G, Harris PG, Danino MA. Thiel-embalmed porcine placenta: A valid and reusable microsurgical practice model. *Ann Chir Plast Esthet.* 2021 Apr;66(2):115-125. doi: 10.1016/j.anplas.2020.12.001. Epub 2020 Dec 30. PMID: 33388177.
9. Kang ES, Popovic M, Noel G. Integration of Gross Anatomy Laboratory Sessions into Medical Physics Curriculum. *Med Sci Educ.* 2020 Oct 14;30(4):1765-1773. doi: 10.1007/s40670-020-01099-5. PMID: 34457844; PMCID: PMC8368750.
10. Noël GPJC, Dubé J, Venne G. The Unintentional Effects on Body Donation Programs of a Competency-Based Curriculum in Postgraduate Medical Education. *Anat Sci Educ.* 2021 Sep;14(5):675-681. doi: 10.1002/ase.2033. Epub 2020 Dec 5. PMID: 33152170.
11. McBain K, Azimov B, O'Brien J, Noël GPJC, Ventura NM. Evaluating the integration of pre-mortem body donor imaging into a dissection-based medical anatomy course. *BMC Med Educ.* 2020 Oct 23;20(1):384. doi: 10.1186/s12909-020-02300-4. PMID: 33097041; PMCID: PMC7583208.
12. Noël GPJ. Flammability and combustion hazard of preserved human tissues. *Clin Anat.* 2020 Sep;33(6):876-879. doi: 10.1002/ca.23573. Epub 2020 Feb 3. PMID: 31983059.

DIVISION OF BREAST SURGERY

The UC San Diego Division of Breast Surgery, combined with the Division Chief's dual responsibility as Director of the Comprehensive Breast Program, has continued to be highly successful in overseeing the activities of the clinic, infusion, and breast imaging, while expanding clinical and translational research opportunities within the breast cancer program.

We are now at full capacity in the Koman Outpatient Pavilion (KOP) at UC San Diego Health's La Jolla campus, and have expanded into the UC San Diego Medical Center Hillcrest, with plans for a breast center in the Hillcrest outpatient pavilion. COVID presented serious challenges to the delivery of breast care (nationally, many screening programs ceased for a long period of time), but we continued to grow despite these challenges.

Surgically, we remain at three full-time faculty, one full-time nurse practitioner, and two physician assistants who are shared with the team. **Ava Armani, MD, Assistant Professor of Surgery; Sarah Blair, MD, FACS, Professor of Surgery; Anne Wallace, MD, Professor of Surgery, and Vincent Genna, NP**, complete the group. In addition, research fellow, **Tom O'Keefe, MD**, moved from that position to PGY3 general surgery residency and **Harrison Chau, MD**, came in as the new research resident.



Ava Armani, MD

Ava Armani, MD

Dr. Armani continues to build a thriving breast surgery practice. She is our first surgeon to establish a committed clinic in Hillcrest in anticipation of the new outpatient pavilion under development. She has been extremely active in outreach, meeting with primary care physicians and obstetricians to help build out new areas of surgical growth. Despite being out on family leave, upon coming back she immediately exceeded her prior surgical volume.

Dr. Armani is growing her involvement with the American Society of Breast Surgeons (ASBrS). She presented "Controversial areas in axillary staging: Are we following the guidelines?" as an oral presentation at our annual American Society of Breast Surgeons meeting and she was selected to be on the practice advocacy committee of ASBrS after completing her term on the Young Surgeons Working Group Committee. She was also awarded the CalHealthCares Award for her work with the underserved populations.

Sarah Blair, MD, FACS

Dr. Blair continues to be an extremely prolific surgeon within the Division of Breast Surgery. She maintains a highly productive clinical practice while exemplifying the academic surgeon. Dr. Blair is an active member of the American College of Surgeons Clinical Research Program as well as the American Society of Breast Surgeons, for which she was vice chair, and this year she has served as chair of the publications committee. She continues her service as the Vice Chair for Academic Affairs and Faculty Development in the Department of Surgery, where she helps ready faculty for the responsibilities of holding an academic position. Also, she is the Co-Chair of the Department of Surgery Compensation Committee, serves on the compensation committee for the School of Medicine and leads the faculty mentorship program.

This past year, Dr. Blair collaborated with Dr. Andrew Kummel and Dr. Michael Bouvet on a \$750,000 project, Encapsulated Viral Vector for Treatment of Invasive Lobular Carcinoma Breast Cancer. She is collaborating with Dr. Brian Eliceiri and is a co-investigator on a California Breast Cancer Research Program grant entitled "Pharmacological targeting of cholinergic receptors as a novel breast cancer immunotherapy."



Sarah Blair, MD

Vince Genna, NP

Vince has become the front-line provider this past year for our benign breast clinic. He has worked tirelessly with primary care in the community to streamline the processes for this patient population.

Vince completed the UCSD Health Leadership Academy in 2020, where his capstone was focused on how we could best collaborate with U.S. Navy physicians to help care for their breast patients. He continues to have gynecological medical students shadow him in clinic, volunteers for the American Cancer Society Breast Walk annually and also volunteers for Explore Solutions – A Business and Youth Expo, where he provided mentorship to high school students regarding future careers.



Vince Genna, NP



Anne Wallace, MD

Anne Wallace, MD

Dr. Wallace continues as both Division Chief and Director of the Comprehensive Breast Health Program. This past year she served on the UCSD Ambulatory Committee as it restructures the outpatient clinic environment, as well as with the LGBT leadership council working on the transgender team, the Protocol Review Committee, the Cancer Center Cabinet, and the Breast Cancer Athena Project Steering Committee. Nationally, Dr. Wallace serves on the National Comprehensive Cancer Network Committee for Breast Cancer High Risk and served on guideline committees for the American Society for Plastic Surgery. She continues to be both a breast surgical oncologist and a plastic surgeon managing an extremely busy practice. Transgender Chest Surgery combines well with her breast cancer expertise and has become an area of interest for cancer surveillance. The breast program within KOP has grown yearly for new patient visits, despite COVID. Breast cancer analytic cases have increased year after year under her leadership as Director of the Comprehensive Breast Health Center. Dr. Wallace again participated and raised significant money for Pedal the Cause, and was named a San Diego Magazine Top Doctor.

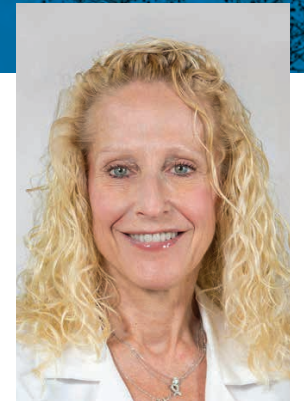
This past year culminated in Dr. Wallace's career research goal of creating a cutting-edge database — specifically, to establish a PDX mice repository of breast cancer tissue cells and collect demographic and clinical data from patients, all while creating an electronic translational database of breast cancer types. Dr. Wallace received a preliminary \$100,000 from a donor to do a pilot project, with a much larger-scale donation in the works for 2021-2022. Her lifetime work on improved imaging methods led to the FDA approved sentinel node agent in 2013, Lymphoseek (Technetium Tc99m Tilmanocept), which was approved by the FDA in 2021 for injection for accurate and precise lymph node identification in pediatric patients with melanoma, rhabdomyosarcoma, and other types of solid tumors. This work speaks to the importance of early phase clinical trials and how that moves science forward.

Dr Wallace has been the recipient of multiple financial donations from grateful patients this past year. This money has been used to help support social services within the breast program, to assist Dr. Blair and her team with lymphedema research, to assist Breast Imaging with Artificial Intelligence research, to pay for the creation of CME for the Transgender Rounds, and to pay for our nurse navigator to learn advanced navigation techniques from a course taught at Duke University.

Dr. Tom O'Keefe completed his two-year research fellowship with Dr. Wallace in 2020 and went on to win the Department of Surgery Research Symposium Clinical Research Paper Award in 2021. Dr. Wallace then took on Harrison Chau, our surgical resident, for two years of research. He obtained a certificate in clinical research, the first half of a master's program at UCSD and he continues to work on many research endeavors.



FACULTY



Anne Wallace, MD

CHIEF OF DIVISION

Anne Wallace, MD

PROFESSOR OF SURGERY

Sarah L. Blair, MD, FACS

SURGICAL ONCOLOGIST

Ava Armani, MD

SELECTED PUBLICATIONS

1. Gabriel RA, Swisher MW, Sztain JF, Curran BP, Said ET, Abramson WB, Khatibi B, Alexander BS, Finneran JJ, Wallace AM, Armani A, Blair S, Dobke M, Suliman A, Reid C, Donohue MC, Ilfeld BM. Serratus anterior plane versus paravertebral nerve blocks for postoperative analgesia after non-mastectomy breast surgery: a randomized controlled non-inferiority trial. *Regional Anesthesia and Pain Medicine*. 2021. In press.
2. O'Keefe TJ, Blair SL, Hosseini A, Harismendy O, Wallace AM. HER2-overexpressing ductal carcinoma in situ associated with increased risk of ipsilateral invasive recurrence, receptor discordance with recurrence. *Cancer Prevention Research*. 2020; 13(9): 761-722.
3. Kuerer, H.M., Blair, S.L. The Virtual Scientific Sessions from the American Society of Breast Surgeons During the COVID-19 Pandemic. *Ann Surg Oncol* 27, 4585–4587 (2020). <https://doi.org/10.1245/s10434-020-08946-0>
4. Swisher MW, Wallace AM, Sztain JF, Said ET, Khatibi B, Abanobi M, Finneran IV JJ, Gabriel RA, Abramson W, Blair SL, Hosseini A, Dobke MK, Donohue MC, Ilfeld BM. Erector Spinae Plane Blocks Versus Paravertebral Nerve Blocks for Postoperative Analgesia after Breast Surgery: A Randomized Clinical Trial. *Reg Anes Pain Med*. 2020, epub ahead of print
5. Yee D, DeMichele AM, Yau C, Isaacs C, Symmans WF, Albain KS, Chen YY, Krings G, Wei S, Harada S, Datnow B, Fadare O, Klein M, Pambuccian S, Chen B, Adamson K, Sams S, Mhawech-Fauceglia P, Magliocco A, Feldman M, Rendi M, Sattar H, Zeck J, Ocal IT, Tawfik O, LeBeau LG, Sahoo S, Vinh T, Chien AJ, Forero-Torres A, Stringer-Reasor E, Wallace AM, Pusztai L, Boughey JC, Ellis ED, Elias AD, Lu J, Lang JE, Han HS, Clark AS, Nanda R, Northfelt DW, Khan GJ, Viscusi RK, Euhus DM, Edmiston KK, Chui SY, Kemmer K, Park JW, Liu MC, Olopade O, Leyland-Jones B, Tripathy D, Moulder SL, Rugo HS, Schwab R, Lo S, Helsten T, Beckwith H, Haugen P, Hylton NM, Van't Veer LJ, Perlmutter J, Melisko ME, Wilson A, Peterson G, Asare AL, Buxton MB, Paoloni M, Clennell JL, Hirst GL, Singhrao R, Steeg K, Matthews JB, Asare SM, Sanil A, Berry SM, Esserman LJ, Berry DA. Association of Event-Free and Distant Recurrence-Free Survival With Individual-Level Pathologic Complete Response in Neoadjuvant Treatment of Stages 2 and 3 Breast Cancer: Three-Year Follow-up Analysis for the I-SPY2 Adaptively Randomized Clinical Trial. *JAMA Oncol*. 2020 Jul 23. PMID: 32701140
6. Swisher MW, Wallace AM, Sztain JF, Said ET, Khatibi B, Abanobi M, Finneran IV JJ, Gabriel RA, Abramson W, Blair SL, Hosseini A, Dobke MK, Donohue MC, Ilfeld. Erector spinae plane versus paravertebral nerve blocks for postoperative analgesia after breast surgery: a randomized clinical trial. *Reg Anesth Pain Med*. 2020 04; 45(4):260-266. PMID: 31969443

DIVISION OF CARDIOVASCULAR & THORACIC SURGERY

The mission of the Division of Cardiovascular and Thoracic Surgery is to deliver outstanding patient care to the community, lead groundbreaking research, and promote inspired teaching.

This past year has been a challenge, to say the least, and it did truly put our ability to stick to our mission to the test.

Despite the pandemic and the challenges it created, our group continued its track record and became a well-recognized national leader in the treatment of end-stage heart and lung disease. Our ECMO and in particular mobile ECMO program came to the rescue of many sick patients, both COVID and non-COVID related, across southern California and neighboring states.

All this was achieved while maintaining our leadership, on a global scale, in the treatment of chronic thromboembolic pulmonary hypertension, and continuing our first-rate reputation in treatment of complex cardiothoracic diseases. Our thoracic oncology program continues to grow, providing state-of-the-art care to patients throughout the region.

So much of what we do is intimately intertwined with what our medical colleagues and partners provide for our patients. The UC San Diego Cardiovascular Institute (CVI) provides the umbrella under which all our disciplines can exist and function as one unit. This year we celebrated our 10th anniversary of the Sulpizio Cardiovascular Center, which is now part of the UC San Diego Cardiovascular Institute. The institute has allowed not only a seamless model for multidisciplinary growth, but has also provided a platform from where many new programs have been launched. We rely on our close academic relation with the Department of Surgery and the expertise it provides for management and advancement of all our academic affairs.

This year, the division's 12 core faculty, two chief CT surgery residents, and 13 advanced practitioners provide care across multiple institutions in San Diego County. The division's heart and lung transplant, adult congenital, ECMO, and thoracic surgery programs continue to be among the most rapidly expanding programs.

Under the leadership of **Travis Pollema, DO**, the ECMO program has experienced tremendous growth and achievement and has grown from a small center (12 patients a year) to a large, high volume (>60 patients per year) regional ECMO center that accepts complex referrals from multiple counties and states. Our ECMO survival rate mirrors the international statistics, despite the heightened acuity of our patients. In 2018, we initiated a nurse-run ECMO program that achieved non-inferior survival and complication outcomes, increased capacity, and significant cost savings.

Furthermore, our mobile ECMO team is the only mobile team in our region. The team has deployed more than 40 times to 15 facilities across four southern California counties within the last year. Early in the COVID-19 pandemic, our program established and led the Southern California ECMO Consortium. Given the limited availability and resources surrounding ECMO, this Consortium allowed for equitable provision of ECMO across our region. The Consortium assessed more than 300 patients, and placed 97 patients on ECMO during the nine-month height of the pandemic. Some of our program's achievements are highlighted in the five recent publications released in 2020 and 2011, and our commitment to continued improvement is evident in our ongoing quality improvement projects and research.

Our program was just awarded the Extracorporeal Life Support Organization's Gold level center of excellence award, which demonstrates an assurance of high-quality standards, specialized equipment and supplies, defined patient protocols, and advanced education of all staff members.

Furthermore, our ECMO program is sharing its experience and expertise by providing program development and education consultation to ECMO programs across the nation, such as Brigham & Women's in Boston. The UC San Diego ECMO team is a truly multidisciplinary effort consisting of CT surgery, Pulmonary Critical Care, Anesthesia Critical Care, Cardiology, ECMO coordinator, ECMO specialists, perfusionists, pharmacy, Palliative Care, and therapists.

The division performed more heart and lung transplants this past year than ever before, with patient outcomes that greatly exceed national standards and expectations and remain at the top in the country. This year we are on track to perform well over 120 heart and lung transplants, despite a pandemic that has affected lives on so many levels. The heart transplant program has again set a record for number of transplants with 73 heart transplants in 2020, and is well on pace in 2021 to perform more than 90 transplants. This achievement is only made possible through close collaboration and team dedication to clinical excellence and innovation and research.

The heart transplant program, under the leadership of **Victor Pretorius, MBChB**, for the second consecutive year has been awarded the Interlink Chairman's award as the nation's No. 1 performing heart transplant program. This distinction is based on Scientific Registry of Transplant Data and INTERLINK's Performance Modeling Program. Our team made advances in transplant innovation, being the only center on the West Coast to have enrolled patients in the TransMedics DCD heart transplant trial. This trial assessed the effectiveness of resuscitating hearts from donors where the heart has stopped beating prior to procuring the hearts. To see these hearts beating outside of a body in a "box" is truly astounding. Our dedicated procurement and transplant teams allowed us to be the third highest enroller in the nation for the trial. As the trial neared completion, our team implemented a mobile team to perform normothermic regional perfusion (NRP) to procure DCD hearts. The success with both the DCD procurement methods has allowed a 40 percent increase in donor heart availability to benefit our advanced heart failure population.

In collaboration with transplant infectious diseases, the heart transplant program has spearheaded an effort to use previously discarded Hepatitis C donor organs. It has performed more than 30 transplants with hearts from hepatitis C viremic donors, and has been able to cure all recipients from hepatitis C with medical therapy. Currently we are enrolling patients in a study to assess the effectiveness of preventing hepatitis C transmission with prophylactic medical therapy.

Furthermore, our team has honed its expertise in serving congenital heart disease patients with transplantation and has already performed 15 transplants in patients with single ventricle physiology patients. In collaboration with our UC San Diego Health abdominal transplant team, we have performed multi organ transplants in many of these patients including heart, lung, liver and kidney. An amyloid interest group has been formed to work with many of these patients up for transplant. With advances in medical therapy for amyloidosis, these patients now derive excellent benefit from transplantation. Similarly, an interest group in cardiomyopathy has combined medical and gene therapy with transplantation to save multiple patients who previously had no treatment option.

Sulpizio Cardiovascular Center, 10th anniversary



A few of our major accomplishments over the last decade:

- » Ranked #23 in the country for Heart & Heart Surgery by US News & World Report 2021
- » Ranked #2 in the nation for one-year patient survival rates among heart transplant programs with 100 to 120 heart transplants performed annually
- » Ranked #1 in the nation for one-year patient survival rates among programs with 50 to 75 lung transplants performed annually
- » Performed the first heart transplant from a donor after circulatory death (DCD) on the West Coast.
- » Home of the only mobile ECMO program south of Los Angeles
- » Became the largest pulmonary thromboendarterectomy center globally, while maintaining the best short and long-term outcomes.
- » Home of the only comprehensive Adult Congenital Heart Disease program south of Los Angeles
- » Became the region's only intensive cardiac rehabilitation program at the Step Family CV Rehabilitation & Wellness Center, providing: Teaching kitchen, multi-purpose workout area, and a comprehensive gym

FACULTY



Michael M. Madani, MD

CHIEF OF DIVISION
Michael M. Madani, MD

PROFESSORS OF SURGERY

Joelle Coletta, MD
Stuart Jamieson, MB
John Nigro, MD
Victor Pretorius, MD
Patricia A Thistlethwaite, MD, PhD

ASSOCIATE PROFESSORS OF SURGERY

John Artrip, MD
Eugene Golts, MD
Steven Howe, MD
Mark Kearns, MD
Mark Onaitis, MD
Travis Pollema, DO

ASSISTANT PROFESSOR OF SURGERY

Joshua Boys, MD

ADJUNCT FACULTY:

Srujan Ganta, MD
Daniel Gramins, MD
Tad Pratt, MD
Antonios Sideris, MD

This year we have also recruited an additional faculty with expertise in heart failure, heart transplant, and mechanical circulatory support. **Mark Kearns, MD**, was our second advanced surgical fellow in the heart failure group. During his advanced training, he gained tremendous experience, but more importantly exhibited great dedication and excellent clinical care, combined with great ability for teamwork. We were able to successfully recruit Dr. Mark Kearns as a new faculty. Over the last year he has been a moving force behind DCD heart transplantation.

Under the leadership of **Eugene Golts, MD**, our lung transplant team has continued its growth at a steady rate, and grew to the largest number of lung transplants ever performed this past year, despite the limitations and challenges of COVID. This year, the team is on track to finish 2021 with more than 50 lung transplants, which is unprecedented at UC San Diego. Like the heart transplant program, lung transplant survival statistics also surpass the national benchmarks. Based on the Scientific Registry of Transplant Recipients data, our most recent 30-day survival is 98.51% (US average 97.71%), one-year survival is 98.53% (US average 89.07%) and the three-year survival is 82.05% (US average 75.21%). These numbers place us at No. 1 in the country for the programs of similar size and No. 2 in the country overall for one-year survival. The waitlist mortality rate is also substantially lower than expected (observed 0 per 100 person years vs. expected 19.1 per 100 person years). The lung transplant program has demonstrated this sustained track record despite extremely complex patients in need of advanced therapeutics.

while continuing to expand the program in La Jolla. Our Thoracic surgeons currently provide services at many affiliated hospitals. In addition to UCSD's main campuses and the VA, we provide full coverage at Kaiser Permanente and Scripps Encinitas.

Our congenital program at Rady's also continue to have steady growth. Under the leadership of **John Nigro, MD**, the program includes all aspects of pediatric and congenital cardiac surgery, including transplants and ventricular assist devices (VADs). **John Artrip, MD**, who was successfully recruited last year, is now the director of the Adult Congenital Program, a multidisciplinary program between the CVI and the Rady's Hospital. The program has had an exceptional growth, and we have seen a significant increase in referral and surgical volume with excellent outcomes. The pediatric as well as the adult congenital cardiac surgical volumes have remained steady, with excellent outcomes and with mortality and complication rates consistently below the national average. The adult congenital program will be undergoing a formal evaluation and accreditation process in the Fall of 2021.

Srujan Ganta, MD, from Edmonton is currently in his second year of advance training in congenital cardiac surgery.

Our partnership with Loma Linda University Medical Center in Murrieta has continued its successful affiliation. Under the leadership of **Steven Howe, MD**, the program has continued to grow a very formative presence of UCSD's Cardiovascular & Thoracic services in the Inland Empire. Our program development at Loma Linda Murrieta has succeeded in markedly improving hospital quality metrics and volume growth. Furthermore, we have been instrumental in building a new structural heart program with exponential growth and exceptional patient outcomes in these programs.

Last but not least, this year we surpassed 4,500 PTE (Pulmonary Thrombo-Endarterectomy) surgeries, the flagship of our program on the national and global stage. This is by far the largest number of such operations in the world, and UC San Diego continues to maintain the best outcomes despite more complex and higher risk patients. We continue to be the world's leader in treatment of this disease through a dedicated multidisciplinary team of individuals from a variety of specialties who are fully committed and genuinely passionate about this disease. Through this collaboration with pulmonary vascular medicine and interventional cardiology, UC San Diego continues to be the national leader in Balloon Pulmonary Angioplasty (BPA), which is utilized for treatment of Chronic Thromboembolic Pulmonary Hypertension (CTEPH) in patients who are not surgical candidates.

The division's Accreditation Council for Graduate Medical Education (ACGME) approved Cardiothoracic Surgery Fellowship continues to be a highly competitive program, which again drew more than 120 well-qualified applicants for one position. Our top-choice candidate was once again matched this year. In addition, as mentioned above, we also provide non-ACGME approved advanced fellowships in adult heart transplant and MCS programs, and in congenital program at Rady Children's Hospital.

Our thoracic oncology program continues its growth under leadership of **Mark Onaitis, MD**. The thoracic oncology group has witnessed a steady growth across the county, and has established a lung cancer screening at Hillcrest,



INTERLINK Chairman's award as the nation's No. 1 performing heart transplant program based on SRTTR data and INTERLINK's Performance Modelling Program.

DIVISION OF COLON AND RECTAL SURGERY

The Division of Colon and Rectal Surgery at UC San Diego provides innovative, high-quality, evidence-based care to patients with complex conditions, such as inflammatory bowel disease, colorectal and anal cancers, anorectal fistula and diverticular disease, as well as complex pelvic floor disorders.

Recognized as national leaders in the field of medical robotics, colorectal cancer and colorectal innovation, we seek to provide the most advanced colorectal care in the region.

AMBULATORY CARE

The Division of Colorectal Surgery saw a record 6,256 new patients in FY 2021. Despite the constraints of COVID-19, the division increased the number of new visits by 25 percent over FY 2020. Our telehealth presence has been a welcome addition for patients. Approximately 18 percent of all colorectal visits are video or telephone encounters. A recent study by resident **Jared Matson, MD**, and medical student Rachel Segal showed that 87 percent of colorectal patients felt that the telemedicine visit met their expectations for a doctor's appointment.

The division also opened a new clinic in the beautiful city of Rancho Bernardo, enhancing our clinical footprint in the surrounding San Diego community. This clinic is part of a larger community care model at UC San Diego Health.

CANCER CARE

The colorectal disease team spent three years preparing to achieve Accreditation Status from the National Accreditation Program for Rectal Cancer (NAPRC). The accreditation not only requires a multidisciplinary approach to rectal cancer care, but a specific mandate to directly communicate the board's findings to the patient and the referring physician. This has increased satisfaction from our patients and our referring physicians. The ultimate goal is to be sure everyone is on the same page when it comes to caring for patients with rectal cancer. We get one chance to do this right, we absolutely want to do our best.

Our team, led by our NAPRC Program Director, **Nicole Lopez, MD**, and our Program Coordinator, **Ellen Fink, PA**, have worked hard to establish a framework for our multidisciplinary rectal cancer tumor board. The conference requires weekly participation from physicians who are essential to the care of rectal cancer patients including radiologists, pathologists, medical oncologists, radiation oncologists, and colorectal surgeons. Facilities with the NAPRC accreditation have undergone a rigorous review process that ensures state of the art cancer care for patients with this devastating disease.

Rectal cancer can have significant and lasting implications

for bowel, urinary and sexual function. The group effort required to adhere to NAPRC standards has stimulated camaraderie and purpose, enhancing our ability to recognize and take advantage of the outstanding skills and experience of our team. We believe this has increased our capacity to approach patients with oncologic rigor in balance with patient values and considerations for quality of life. Our team is supported by a host of experts in the UCSD Moores Cancer Center who are critical to our expert management of rectal cancer patients including Urologic Oncology, Gynecologic Oncology, Thoracic Surgery, Palliative Care, Ostomy support and Surgical Oncology. Together, this powerhouse elevates the care for rectal cancer patients in the region. UCSD's program is the first accredited program in Southern California and is one of only 23 centers accredited in the U.S.

Our team is extremely proud to have earned this distinction as it reflects the talent, hard work, and dedication of the entire colorectal disease team at UC San Diego. Our goals are to build a stronger bonds with the community to facilitate the care of rectal cancer patients in the region and to use our clinical expertise to inform our research, translational and clinical trial efforts in the future.

FACULTY ACHIEVEMENTS

Sonia Ramamoorthy, MD, FACS, FASCRS

Dr. Sonia Ramamoorthy was appointed to the UC Regents Committee on Health Services this past spring. The UC Regents Health Services Committee provides strategic direction, oversight, and has the delegated authority on matters pertaining to the University's health professions schools, academic health centers, health systems, non hospital clinics and student health and counseling centers. The committee is composed of members of the UC Regents, the President of UC Health, Dr. Carrie Byington, the chancellors of UCSD, UCLA and UCSF, and the representative health sciences vice chancellors, and chief executive officers. As the sole faculty representative to the committee, Dr. Ramamoorthy represents the interests of all the health sciences faculty throughout the entire UC System. Dr. Ramamoorthy was nominated by the UCSD academic senate and chosen through a competitive selection process by the UC wide academic council. She received final approval by UC President Michael Drake and the UC Regents to serve in this role for three years starting this Spring.

Shanglei Liu, MD, MAS

Assistant Professor of Surgery Shanglei Liu, MD, MAS, is a returning addition to the UC San Diego surgery team. He first came to UC San Diego for undergraduate training, where he graduated with a Bachelor of Science degree in Bioengineering in 2007, with a minor in Chemistry. He then attended medical school at UC San Diego, obtaining his Medical Degree in 2012. After this, he continued with UC San Diego for General Surgery Residency between 2012-2017. During this time, he completed an additional two-year research fellowship with the Department of Minimally Invasive Surgery, with a focus on novel medical devices and robotic surgery. At the same time, he also obtained a Masters in Advanced Studies in Medical Device Engineering at the Jacobs School of Engineering. Upon completing his residency training, Dr. Liu went on to complete a fellowship in Colon and Rectal Surgery at The Mayo Clinic in Rochester, Minnesota. Throughout his training, Dr. Liu has worked with teams of engineers and local start-up companies on several medical device patents in the fields of robotic surgery, colorectal surgery, surgical ergonomics, and medical informatics. His research passion is rooted in advancing the field of surgery by pushing the boundaries of technological advancements.

Sam Eisenstein, MD

Dr. Sam Eisenstein was elected to Co-Chair the Surgery Research Network for the Crohns and Colitis Foundation. In this role, Dr. Eisenstein will oversee and support the development of surgical trials for IBD patients nationwide.



Shanglei "Shawn" Liu, MD

Conferences UCSD Colorectal Faculty Participation

Participation in national, regional and local surgery meetings via virtual platforms remained robust thru the pandemic with the Division of Colorectal Surgery presenting at several key surgical forums in fiscal year 2021.

- » American College of Surgeons (ACS)
 - NSQIP
 - Clinical Research Program Dissemination and Implementation Committee
 - Informatics Committee
 - Cancer Surgery
 - Standards Program
- » American Society of Colon and Rectal Surgeons (ASCRS)
 - Young Surgeons Committee
 - IBD Committee
 - Executive Committee
 - Health Economics Committee
 - Surgical Leadership Institute Webinars
- » International Surgical Society
- » IBD Rounds Mt Sinai Toronto
- » San Diego Colorectal Collaborative
- » Connect Up Robotics Symposium

Nicole Lopez, MD

Dr. Nicole Lopez has completed her bioinformatics fellowship and is now board certified in General Surgery, Surgical Oncology, Colorectal Surgery and Bioinformatics! Dr. Lopez is using her talents to help design Synoptic op reports and epic registries for rectal cancer programs nationwide through her involvement with the American College of Surgeons Commission on Cancer.

Sean Flynn, MD

Since arriving at UC San Diego, Dr. Sean Flynn, has done an outstanding job in his progression through the General Surgery training program. He has taken full advantage of the rich academic environment afforded by the program and institution. Sean continues to be a critical leader for our residency in his role as administrative chief, and will no doubt serve us proud in his next position. These efforts, as well as many others, have culminated in his successful match to his first choice at the University of Southern California. No doubt a spectacular achievement. Please join us in congratulating Dr. Flynn!

Lisa Parry, MD and Benjamin Abbadessa, MD, FACS

Dr. Lisa Parry and Dr. Benjamin Abbadessa were selected to participate in the UCSD Health Leadership Academy. The Academy is an 18-month program focused on the development of our next generation of healthcare leaders.

Jared Matson, MD

Dr. Jared Matson is a Captain in the Air Force destined for a career in colorectal surgery, having completed two years of clinical research. With two major chapters in surgery textbooks, including one in the iconic Greenfield Textbook and six manuscripts, we are excited to welcome Dr. Matson back on the clinical wards.



Colon and Rectal Surgery team gathering

FACULTY



Sonia Ramamoorthy, MD

CHIEF OF DIVISION

Sonia Ramamoorthy, MD, FACS, FASCRS

PROFESSOR OF SURGERY

Bard Cosman, MD, FACS, FASCRS

ASSOCIATE PROFESSORS

Samuel Eisenstein, MD
Nicole Lopez, MD
Lisa Parry, MD

ASSISTANT PROFESSORS OF SURGERY

Ben Abbadessa, MD, FACS
Shanglei Liu, MD, MAS

SELECTED PUBLICATIONS

1. Zhao B, Hollandsworth HM, Lopez NE, Parry LA, Abbadessa B, Cosman BC, Ramamoorthy SL, Eisenstein S. Local excision versus radical resection in patients with rectal neuroendocrine tumours: a propensity score match analysis. *ANZ J Surg.* 2020. Dec;90(12):E154-E162.
2. Stringfield SB, Parry LA, Eisenstein SG, Horgan SN, Kane CJ, Ramamoorthy SL. Experience with 10 years of a robotic surgery program at an Academic Medical Center. *Surg Endosc.* 2021. [Epub ahead of print]
3. Tsai L, Ma C, Dulai PS, Prokop LJ, Eisenstein S, Ramamoorthy SL, Feagan BG, Jairath V, Sandborn WJ, Singh S. Contemporary Risk of Surgery in Patients with Ulcerative Colitis and Crohn's Disease: A Meta-Analysis of Population-based Cohorts. *Clin Gastroenterol Hepatol.* 2020 Oct 27:S1542-3565(20)31497-X
4. Hollandsworth HM, Stringfield S, Klepper K, Zhao B, Abbadessa B, Lopez NE, Parry L, Ramamoorthy S, Eisenstein S. Multi-quadrant surgery in the robotic era: a technical description and outcomes for da Vinci Xi robotic subtotal colectomy and total proctocolectomy. *Surg Endosc.* 2020 Nov;34(11):5153-5159.
5. Zhao B, Hollandsworth HM, Lopez NE, Parry LA, Abbadessa B, Cosman BC, Ramamoorthy SL, Eisenstein S. Outcomes for a Large Cohort of Patients with Rectal Neuroendocrine Tumors: an Analysis of the National Cancer Database. *J Gastrointest Surg.* 2021 Feb;25(2):484-491.
6. Zhao B, Lopez NE, Eisenstein S, Schnickel GT, Sicklick JK, Ramamoorthy SL, Clary BM. Synchronous metastatic colon cancer and the importance of primary tumor laterality - A National Cancer Database analysis of right- versus left-sided colon cancer. *Am J Surg.* 2020 Aug;220(2):408-414.
7. J Matson, S Ramamoorthy, NE Lopez. The Role of Biomarkers in Surgery for Ulcerative Colitis: A Review. *J Clin Med.* 2021 Jul29 (15):3362.
8. Hauch A, McKee R, Li WY, Crowley JS, Ramamoorthy S, Dobke M. Rectovaginal Fistula Repair 1 Year Later: Lessons Learned. *Ann Plast Surg.* 2020 Dec 15; Publish Ahead of Print. Online ahead of print.
9. Peters WR, Ramamoorthy S, Healthcare Economics Committee of the American Society of Colon and Rectal Surgeons. Delivery of Colorectal Surgical Care in 2018: Results of the 2018 ASCRS Compensation Survey. *Dis Colon Rectum.* 2020 Jul; 63(7):887-889
10. Cheverie J, Matson J, Ramamoorthy S. Anatomy and Physiology of the Small Bowel. *Dimick/Mulholland and Greenfield's Surgery: Scientific Principles and Practice, 7th ed. Chapter 47; Wolters Kluwer Health*
11. Matson J, Ramamoorthy SL. ICG Image-Guided Surgery with the Assessment for Anastomotic Safety. *Innovative Endoscopic and Surgical Technology in the GI Tract, Fuchs and Horgan ed. Springer 2021*
12. Seghal R, Matson J, Mostaghi O, Vaidya E, Kari E, Freidman R, Ramamoorthy S, Harris J.P. Surgical patient experience with a novel telemedicine program in the COVID-19 era. *Telehealth and Medicine Today.* 2021, 6(1).
13. Blitzer RR, Eisenstein S. Venous Thromboembolism and Pulmonary Embolism: Strategies for Prevention and Management. *Surg Clin North Am.* 2021 [In Press].
14. Bhamra AR, Bertucci Zoccali M, Chapman BC, Davids JS, Eisenstein S, Fish DR, Sherman KL, Simianu VV, Zaghiyan KN. Practice Variations in Chemodeneration for Anal Fissure Among ASCRS Members. *Dis Colon Rectum.* 2021 [Epub ahead of print].
15. Santillan CS, Huang C, Eisenstein S, Al-Hawary MM. MRI of Perianal Crohn Disease: Technique and Interpretation. *Top Magn Reson Imaging.* 2021 Feb 1;30(1):63-76.

DIVISION OF HEPATOBILIARY AND TRANSPLANT SURGERY

The Division of Hepatobiliary and Transplant Surgery is the leading abdominal transplant program in San Diego and is a regional referral center for the surgical treatment of liver disease and cancers.

The program performs liver, kidney and multi-organ transplantation, as well as complex liver and bile duct surgery for cancer and benign conditions.

As the only academic transplant program in San Diego, the UC San Diego transplant program had the best year for volume and outcomes in the history of the transplant program, performing 223 total abdominal transplants. Even more impressive is that outcomes for both the liver and kidney transplant programs are not only better than expected, but better than the national average. This quality has been maintained despite exponential growth.

The liver transplant program performed 91 liver transplants, which is a record for both UC San Diego Health and San Diego. The program has the best one-year liver and patient survival for all liver transplant programs in Southern California and ranks No. 7 nationally for similar sized transplant programs. UC San Diego Health liver transplant program's patients have a shorter wait time for liver transplantation than other regional transplant programs due to multiple innovative programs that have increased access to liver transplant for our patients. These programs include participation in the HOPE Trial, which works to place HIV positive donor organs into HIV positive recipients. UC San Diego Health completed the first HIV-to-HIV liver transplant in Southern California this year. The liver transplant program also operates the only living donor liver transplant program in San Diego and is one of only a handful of programs in Southern California to do so.

Our program uses Transmedics liver perfusion pump, an innovative technology that allows warm storage of organs for transplant. This technology improves immediate function in transplanted livers and may address the organ

shortage by allowing use of more marginal livers for transplant. Working closely with our colleagues in heart and lung transplant, we specialize in combined thoracic abdominal transplantation including heart liver, lung liver, and heart kidney transplants. Trained in pediatric liver transplantation, living donor transplantation, and hepatobiliary surgery, our surgeons are highly skilled and able to take on the most complex vascular and re-operative patients.

Despite the challenges to kidney transplant and living donation during the pandemic, our kidney transplant program completed 132 transplants, including 37 living donor transplants in 2020, and more than 30 living donor transplants year-to-date in 2021. Currently, one third of transplant recipients on our waitlist receive kidneys from living donors, which has increased over the last several years and is important in our region, where patients can wait more than a decade for a living donor transplant. UC San Diego Health is a partner center in San Diego with the National Kidney Registry (NKR), which offers paired and chain donation, and we are one of the top performing

centers in the country. With NKR, we were able to do our first remote living donor and voucher donor last year. These novel programs are creating more and more opportunities for life-saving transplants. Our outcomes are excellent and above expected for both living and deceased donor transplant, maintained with increasing volume. UC San Diego Transplant surgery also performs pediatric kidney transplantation at Rady Children's Hospital and is in process of building a pediatric liver transplant program. The team also covers local organ procurements for Lifesharing, the San Diego organ procurement organization.

The hepatobiliary surgery group includes nationally renowned hepatobiliary surgeon and Chair of the Department of Surgery, **Bryan Clary, MD, FACS**, as well as **Gabriel Schnickel, MD, MPH**, and **Jennifer Berumen, MD**. The group is well-known for complex hepatobiliary surgery for cholangiocarcinoma and hepatocellular carcinoma, as well as vascular resections for pancreatic cancer, sarcoma and renal cell carcinoma. The practice has grown to nearly 200 procedures a year, both minimally invasive and open procedures for benign and malignant disease. For patients with malignancy, the group works closely with a multi-disciplinary team of oncologists, radiologists, surgeons, and hepatologists to provide personalized state of the art cancer care at Moores Cancer Center at UC San Diego.

Kristin Mekeel, MD, FACS, has served as the Chief of the Division of Transplant and Hepatobiliary Surgery since 2017. She also serves as Vice Chair, Quality for the Department of Surgery and Director of Surgical Quality for UC San Diego Health. In addition to leading the transplant program, Dr. Mekeel has taken the lead on several high-profile quality and safety initiatives for the Department of Surgery and UC San Diego Health, including improving prophylaxis compliance for deep vein thrombosis and pulmonary embolism, and development of a novel tool to capture adverse events and case complications combining multiple quality databases. She leads the institutional National Surgical Quality Improvement Program, the Surgical Quality Committee, and the Medical Directors Group. Dr. Mekeel is also Vice Chair of the Health Sciences Faculty Committee and has active membership in multiple institutional committees and councils. Dr. Mekeel also earned a Master's of Science in Healthcare Quality and Patient Safety from Northwestern University after two years of study.

Gabriel Schnickel, MD, is the Surgical Director of Liver Transplantation and has led the program to its most successful year ever in both outcomes and volume in liver transplantation. He has created a collaborative multi-disciplinary team that is excelling in the care of liver transplant patients before and after transplant. Dr. Schnickel is the primary surgeon for the Living Donor Liver Transplant program at UC San Diego, which started in the fall of 2019, and has spearheaded the Transmedics liver perfusion pump trial. In addition to his transplant practice, Dr. Schnickel is also an experienced hepatobiliary surgeon specializing in minimally invasive liver resection, complex liver and bile duct resection, and vascular resection for pancreatic cancer, sarcoma and renal cell carcinoma. He is the go-to surgeon for intra-operative assistance for many surgical specialties at UC San Diego. Dr. Schnickel was promoted to Professor of Surgery this year, which

was well deserved. Dr. Schnickel serves nationally on the American Society of Transplant Surgeons Business Practice Committee and the National Medical Advisory Committee of the American Liver Foundation.



We are excited to add Dr. Aleah Brubaker to the team
From left to right: **Dr. Justin Parekh, Dr. Kristin Mekeel, Dr. Aleah Brubaker, Dr. Jennifer Berumen and Dr. Gabriel Schnickel**

Jennifer Berumen, MD, is the Director of the Living Donor Kidney Transplant program and the Surgical Director of Kidney Transplantation at Rady Children's Hospital. Dr. Berumen also specializes in dialysis access, hepatobiliary surgery, and general surgery in patients with cirrhosis. Dr. Berumen leads the living donor kidney transplant program, which has thrived under her watch with increasing volume, increasing complexity and excellent outcomes. Dr. Berumen has been particularly successful working with the National Kidney Registry to increase the opportunity for a living donor transplant for patients with a donor who is not a match. Our participation in NKR has also increased transplants for our deceased donor waitlist, as we are allotted kidneys at the end of donor chains. Dr. Berumen is an Associate Professor for the Department of Surgery. Other directorships for Dr. Berumen include the Director of Wellness for the Department of Surgery and Associate Program Director for the Residency Program. In these roles, she has spearheaded a peer support group for residents and faculty, a resident wellness program including group social and relaxation activities, and faculty burnout interventions. Dr. Berumen was recognized by the residents at the Teacher of the Year for 2020, which is an enormous honor. Nationally, Dr. Berumen is a Board Member of the National Organ Transplant Alliance and the National Kidney Registry. She is also a member of the American Society of Transplant Surgeons Standards and Quality Committee, and the American Society of Transplantation UNOS/OPTN Policy Committee.

HONORS/AWARDS

Dr. Mekeel

San Diego's Top Docs 2021

Dr. Berumen

2021 UCSDH Academy of Clinician scholars Whitehill Prize for Excellence – recognizing excellence in teaching, advocating for residents, modeling compassion, and encouraging research projects.



Dr. Gabriel Schnickel and Dr. Justin Parekh perform a liver transplant.



Our highly reliable surgical team prepares for a living donor liver transplant.

Justin Parekh, MD, leads the kidney transplant service as the Surgical Director of Kidney Transplantation and continues to serve as the Director of Quality for Abdominal Transplantation. Dr. Parekh's leadership has led to more than 50% growth in our kidney transplant volume over the last two years by increasing the use of marginal kidneys judiciously while preserving excellent long-term outcomes. He supports multiple QI projects designed to enhance patient care and system efficiencies, including helping to develop a solid organ transplant quality committee which standardizes our quality and safety care for transplant across the system. From a research standpoint, Dr. Parekh is part of a team working on a national transplant quality program as part of the broader NSQIP initiative called TransQIP. This is the first national database for transplant surgical outcomes, and he has published important novel papers on practice variation and outcomes in transplant surgery across the United States. His research interests focus on surgical quality, acute liver failure, and organ utilization.

We are pleased to announce the addition of **Aleah Brubaker, MD, PhD**, to our transplant surgical team. Dr. Brubaker will be joining the team in the upcoming year after completing a transplant fellowship at Stanford Hospital and Clinics. Dr. Brubaker completed a combined MD/PhD at Loyola University in Chicago, with her PhD focused on integrated cell biology and wound healing in surgical patients. In addition to her clinical responsibilities in the adult and pediatric transplant programs, Dr. Brubaker will pursue translational science research in the microbiome, focusing on the urinary microbiome, recurrent infection, and rejection in post-transplant patients. The team cannot wait for her to start.

Tatiana Kisseleva, MD, PhD, continues her highly innovative and respected research work in the areas of liver fibrosis, the development of hepatocellular carcinoma, and alcohol-related fibrosis and cirrhosis, with a goal of developing anti-fibrotic molecules. Her lab is also one of few groups that can isolate hepatocytes, Kupffer cells, hepatic stellate cells, and endothelial cells used for translational research. Dr. Kisseleva had more than 25 peer reviewed publications published in the last two years, including her research on immunotherapy targets in cholestatic liver fibrosis, which was published in the prestigious Proceedings of the National Academy of Sciences. She also received funding for four R-01 National Institutes of Health (NIH) grants, making her one of the most successfully funded researchers in the Department of Surgery. She is a reviewer for NIH study section and teaches grant writing at UC San Diego Health. An international expert in her field, she traveled across the U.S., Europe and Japan as an invited speaker. She mentors seven post-doctoral fellows and graduate students in her lab, as well as UC San Diego medical students and residents.

FACULTY



Kristin Mekeel, MD

CHIEF OF DIVISION

Kristin Mekeel, MD, FACS

ASSOCIATE PROFESSORS

Tatiana Kisseleva, MD, PhD
Justin Parekh, MD

ASSISTANT PROFESSORS OF SURGERY

Jennifer Berumen, MD
Gabriel Schnickel, MD

SELECTED PUBLICATIONS

1. Clinical effectiveness of COVID-19 vaccination in solid organ transplant recipients. Aslam S, Adler E, Mekeel K, Little SJ. *Transpl Infect Dis.* 2021 Jul 29:e13705. doi: 10.1111/tid.13705. Online ahead of print. PMID: 343242
2. Impact of diabetes and chronic dialysis on post-transplant survival in combined heart-kidney transplant recipients. Parekh JR, Lam J, Chau H, Berumen J, Schnickel GT, Mekeel K. *Clin Transplant.* 2021 Jul;35(7):e14338. doi: 10.1111/ctr.14338. Epub 2021 May 18. PMID: 33948985
3. Successful heart and kidney transplantation from a deceased donor with PCR positive COVID-19. Sigler R, Shah M, Schnickel G, Pretorius V, Dan J, Taremi M, Aslam S. *Transpl Infect Dis.* 2021 Jul 28. doi: 10.1111/tid.13707. Online ahead of print. PMID: 34322981 No abstract available.
4. Impact of diabetes and chronic dialysis on post-transplant survival in combined heart-kidney transplant recipients. Parekh JR, Lam J, Chau H, Berumen J, Schnickel GT, Mekeel K. *Clin Transplant.* 2021 Jul;35(7):e14338. doi: 10.1111/ctr.14338. Epub 2021 May 18. PMID: 33948985
5. Impact of diabetes and chronic dialysis on post-transplant survival in combined heart-kidney transplant recipients. Parekh JR, Lam J, Chau H, Berumen J, Schnickel GT, Mekeel K. *Clin Transplant.* 2021 Jul;35(7):e14338. doi: 10.1111/ctr.14338. Epub 2021 May 18. PMID: 33948985
6. Understanding the Impact of Pneumonia and Other Complications in Elderly Liver Transplant Recipients: An Analysis of NSQIP Transplant. Schnickel GT, Greenstein S, Berumen JA, Elias N, Sudan DL, Conzen KD, Mekeel KL, Foley DP, Hirose R, Parekh JR. *Transplant Direct.* 2021 Apr 23;7(5):e692. doi: 10.1097/TXD.0000000000001151. eCollection 2021 May. PMID: 33912659 Free PMC article.
7. Impact of diabetes and chronic dialysis on post-transplant survival in combined heart-kidney transplant recipients. Parekh JR, Lam J, Chau H, Berumen J, Schnickel GT, Mekeel K. *Clin Transplant.* 2021 Jul;35(7):e14338. doi: 10.1111/ctr.14338. Epub 2021 May 18. PMID: 33948985
8. Understanding the Impact of Pneumonia and Other Complications in Elderly Liver Transplant Recipients: An Analysis of NSQIP Transplant. Schnickel GT, Greenstein S, Berumen JA, Elias N, Sudan DL, Conzen KD, Mekeel KL, Foley DP, Hirose R, Parekh JR. *Transplant Direct.* 2021 Apr 23;7(5):e692. doi: 10.1097/TXD.0000000000001151. eCollection 2021 May. PMID: 33912659 Free PMC article.
9. Immunotherapy-based targeting of MSLN+ activated portal fibroblasts is a strategy for treatment of cholestatic liver fibrosis. Nishio T, Koyama Y, Liu X, Rosenthal SB, Yamamoto G, Fuji H, Baglieri J, Li N, Brenner LN, Iwaisako K, Taura K, Hagood JS, LaRusso NF, Bera TK, Pastan I, Brenner DA, Kisseleva T. *Proc Natl Acad Sci U S A.* 2021 Jul 20;118(29):e2101270118. doi: 10.1073/pnas.2101270118. PMID: 34253615
10. Interleukin-17 in Liver Disease Pathogenesis. Li N, Yamamoto G, Fuji H, Kisseleva T. *Semin Liver Dis.* 2021 Jun 15. doi: 10.1055/s-0041-1730926. Online ahead of print. PMID: 34130335

DIVISION OF MINIMALLY INVASIVE SURGERY

The Division of Minimally Invasive Surgery at UC San Diego remains on the forefront of academic minimally invasive surgery. This year has been exciting despite challenges posed by the pandemic. We have seen ongoing advancements in the care of our patients, the investigation and development of new technology, and the training of future surgeons.

All surgeons in the division are active at the Bariatric and Metabolic Institute, and we are proud to continue with active accreditation and no citations. We continue to maintain our Level 1 certification from the American College of Surgeons.

The group remains extremely active in the implementation and development of new surgical technology. Under the guidance of **Santiago Horgan, MD, FACS**, we continue work in the world's first Center for Fluorescence-Guided Surgery. Our specific focus is on the application of indocyanine green in laparoscopic cholecystectomy, as well as identifying novel techniques for its use in other procedures. The group recently received another sizable grant to investigate the use of ICG across multiple procedures. We have been asked to present our fluorescent cholecystectomy findings at the American College of Surgeons Clinical Congress in October 2021.

The group continues to be active in the research realm, publishing papers related to paraesophageal hernia treatment, GERD pathophysiology and treatment, LINX, and transhiatal esophagectomy. One paper on GERD pathophysiology was selected as "editors choice" in the journal of Digestive Diseases. The group finalized the development a surgical textbook titled "Innovative Endoscopic and Surgical Technology of the GI tract" (with **Dr. Horgan** and **Dr. Karl Fuchs** as senior editors).



In the ever-expanding field of surgical robotics, UC San Diego surgeons remain in the lead. With Xi robots at both La Jolla and Hillcrest campuses, case volume has grown, and procedural advancement has continued in the last year. **Ryan Broderick, MD**, and the division continue to work closely with our UCSD Engineering colleagues, including **Tania Morimoto, MD, PhD**, for development of flexible robotics for use in percutaneous access and endoscopic surgery. Faculty in the division were leaders in implementing technology to overcome restrictions in place from the COVID pandemic; video visits were implemented early to provide continued care for our patients and protect our staff during trying times.

We have maintained our minimally invasive surgery fellowship accreditation with no citations (our last review was in 2019). The fellowship will continue to train two fellows per year, with the goal of creating academic surgeons.

Santiago Horgan, MD, FACS, is a Professor of Surgery and Chief, Division of Minimally Invasive Surgery. He serves as the Chief of the Bariatric and Metabolic Surgery as well as the Center for the Future of Surgery and the Vice Chair of Business Development. He is the founder and Director of the Center for Fluorescence-Guided Surgery. He is an internationally recognized expert in advanced surgical techniques and a pioneer in minimally invasive robotic surgery, treatment of morbid obesity, and is a specialist in surgery of the esophagus.

Garth R. Jacobsen, MD, is a Professor in the Clinical X Series and serves as the Director of the General Surgery residency program. The residency is in great shape, as evidenced by outstanding fellowship matches, ACGME survey results, and 100% board pass rates. Dr. Jacobsen continues to push the forefront of robotics in hernia repair and looks to implement a robotic single anastomosis duodenal switch program in the upcoming year.

Bryan J. Sandler, MD, FACS, is an Associate Clinical Professor and serves as the co-director of the Minimally Invasive Surgery fellowship. Dr. Sandler remains very active in the Center for the Future of Surgery and hosts animate labs on a weekly basis, ranging from an intern boot camp to complex robotic surgery.

Ryan Broderick, MD, is an Assistant Professor of clinical surgery in the Clinical X series, and an alumnus of the UC

San Diego General Surgery residency as well as Minimally Invasive Surgery fellowship program. Dr. Broderick is building his clinical practice (foregut, hernia, and bariatrics) while seeing patients at both the La Jolla and Hillcrest locations. He is a core leader of our research group and works closely with Dr. Morimoto as a bridge to the UC San Diego Department of Engineering.

Eduardo Grunvald, MD, is a clinical professor of medicine and serves as Medical Director of the Weight Management Program within the Bariatric and Metabolic Institute, a program of the Division of Minimally Invasive Surgery. He provides full time medical bariatric services to further enhance the care of our patients and augment their excellent outcomes. Dr. Grunvald continues to develop clinical, educational, and scholarly partnerships between various divisions. He represents the division on a national committee developing obesity medicine education competencies for promoting and standardizing knowledge and skills on the medical and surgical treatment of obesity across medical schools in the U.S.

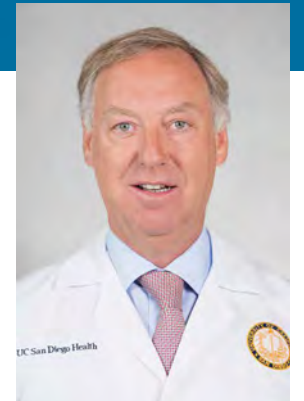
Tania Morimoto, MD, PhD, is an Assistant Professor in the Department of Mechanical and Aerospace Engineering and the Department of Surgery. She leads a robotics lab focused on developing flexible and soft surgical robots for improved dexterity, manipulation, navigation, and safety. She was awarded funding from the NSF Smart and Connected Health program for her proposal titled "Human-in-the-loop Design and Control of Handheld Robotic Instruments for Laparoscopic Surgery." Dr. Morimoto started a joint appointment with the division as of July, 2019.



Society of Gastrointestinal and Endoscopic Surgeons (SAGES) Annual Meeting 2021.

From left to right: Michael Genz, MD, Gene Yang, MD, Santiago Horgan, MD, Estella Huang, MD, Joaquin Serra, MD, Samantha Wu, Jonathan Li, MD, Hannah Hollandsworth, MD, Alice Race,, MD, Michael Bouvet, MD, Garth Jacobsen, MD and Ryan Broderick, MD.

FACULTY



Santiago Horgan, MD

CHIEF OF DIVISION

Santiago Horgan, MD, FACS

PROFESSOR OF SURGERY

Garth R. Jacobsen, MD, FACS

ASSOCIATE PROFESSOR OF SURGERY

Bryan J. Sandler, MD, FACS

ASSISTANT PROFESSORS OF SURGERY

Eduardo Grunvald, MD
Lalita Tantisira, MD
Deepa Sannidni, MD
Tania Morimoto, MD
Ryan Broderick, MD

SELECTED PUBLICATIONS

1. Cheverie JN, Neki K, Lee AM, Li JZ, Dominguez-Profeta R, Matsuzaki T, Broderick RC, Jacobsen GR, Sandler BJ, Horgan S. Minimally Invasive Paraesophageal Hernia Repair in the Elderly: Is Age Really Just a Number? *J Laparoendosc Adv Surg Tech A*. 2021 Mar 11. doi: 10.1089/lap.2020.0792. Epub ahead of print. PMID: 33709788.
2. Fuchs KH, DeMeester TR, Otte F, Broderick RC, Breithaupt W, Varga G, Musial F. Severity of GERD and disease progression. *Dis Esophagus*. 2021 Feb 11:doab006. doi: 10.1093/dote/doab006. Epub ahead of print. PMID: 33575739.
3. Broderick RC, Lee AM, Blitzer RR, Zhao B, Lam J, Cheverie JN, Sandler BJ, Jacobsen GR, Onaitis MW, Kelly KJ, Bouvet M, Horgan S. It's not always too late: a case for minimally invasive salvage esophagectomy. *Surg Endosc*. 2020 Sep 17. doi: 10.1007/s00464-020-07937-2. Epub ahead of print. PMID: 32940794.
4. Broderick RC, Lee AM, Cheverie JN, Zhao B, Blitzer RR, Patel RJ, Soltero S, Sandler BJ, Jacobsen GR, Doucet JJ, Horgan S. Fluorescent cholangiography significantly improves patient outcomes for laparoscopic cholecystectomy. *Surg Endosc*. 2020 Oct 14. doi: 10.1007/s00464-020-08045-x. Epub ahead of print. PMID: 33052527.
5. Dominguez-Profeta R, Cheverie JN, Blitzer RR, Lee AM, McClain L, Broderick RC, Sandler BJ, Jacobsen GR, Horgan S, Kunkel DC. More beads, more peristaltic reserve, better outcomes: factors predicting postoperative dysphagia after magnetic sphincter augmentation. *Surg Endosc*. 2020 Oct 30. doi: 10.1007/s00464-020-08013-5. Epub ahead of print. PMID: 33128078.
6. Lee AM, Holmgren J, Broderick RC, Horgan S. Endoscopic ultrasound: a powerful tool to modify treatment algorithms in opioid-induced achalasia [published online ahead of print, 2020 Aug 26]. *Surg Endosc*. 2020;10.1007/s00464-020-07882-0. doi:10.1007/s00464-020-07882-0
7. Broderick RC, Horgan S, Fuchs HF. Robotic Transhiatal Esophagectomy [published online ahead of print, 2020 May 13]. *Dis Esophagus*. 2020; doi:10.1093/dote/daaa037
8. Broderick R, Fuchs KH, Breithaupt W, et al. Clinical Presentation of Gastroesophageal Reflux Disease: A Prospective Study on Symptom Diversity and Modification of Questionnaire Application. *Dig Dis*. 2020;38(3):188-195. doi:10.1159/000502796 – Editor's Choice Award

HONORS/AWARDS

Dr. Broderick

- » Dr. Broderick received the University of California San Diego Academy of Clinical Scholars: Whitehill Prize of Excellence.

DIVISION OF OTOLARYNGOLOGY SURGERY

Our surgeons are committed to providing the most advanced medical and surgical care in the world. We offer services and specialized training for otology and neurotology, head and neck surgery, facial and reconstructive surgery, surgical oncology, laryngology and thyroid and parathyroid surgery. Many surgeons in our Division are also heavily involved in research, and this year marked many scientific milestones for the Division.

COVID-19 has had an unprecedented impact on the entire healthcare service delivery system. Providers have scrambled to provide patients with efficient, high-quality care while preserving the safety and well-being of both parties. Organizations across the globe immediately instituted mandatory truncation in the volume of in-person encounters to reduce transmission rates.

This dramatic shift in practice was profoundly impactful in the delivery of care to individuals diagnosed with head and neck cancer. The nature of the disease requires a collaborative multi-disciplinary team approach, which inherently involves a high volume of patients visits.

This, in large part, is due to the sequelae from radiation treatment that carries elevated toxicities and can plague patients' quality of life.

Speech-language pathologists play a critical role in head and neck cancer management across the continuum of care. Clinicians are tasked with managing essential functions, including speaking and swallowing, using a variety of methods which include behavioral assessment and instrumental techniques. It is essential that clinicians see patients before, during, and after treatment to ensure safety and optimal function. Many of these services were immediately disrupted and subsequently halted by the COVID-19 pandemic.

The California Consortium of Swallowing, including speech-language pathologists from UCSD, UC Davis and Stanford University, partnered together to chronicle efforts to generate an effective head and neck cancer

management regimen in the era of COVID-19. The team outlined how telemedicine can provide a safe and efficient alternative to the in-person model. Multiple methods to maximize the virtual care experience were reviewed. This also included strict criteria for appropriate use of PPE and for in-person objective evaluation. The summary of work was recently published by the American Speech and Hearing Association. Since its distribution, the article has serviced as a sound guideline for institutions across country struggling to meet the complex demands of the head and neck cancer population.

UCSD Center for Asthma and Sinus Disease awarded Center of Excellence by the World Allergy Organization (WAO).



SUO bootcamp participants in front of the Telemedicine -CFS building

The UC San Diego Center for Asthma and Sinus Disease is a multidisciplinary collaboration amongst the Division of Otolaryngology (Rhino), Division of Rheumatology, Allergy and Immunology, and the Division of Pulmonary, Critical Care, and Sleep Medicine to provide comprehensive patient-centered care and to engage in research endeavors and clinical trials to improve the well-being of patients with asthma and sinus disease. The World Allergy Organization (WAO) recently named UCSD Center for Asthma and Sinus Disease as a Center of Excellence (one of six centers in the USA) in recognition of UCSD's comprehensive bench-to-bedside mission involving multidisciplinary scientific and clinical innovation and education.

ACCOMPLISHMENTS

It has been a momentous year for Otolaryngology/Head and Neck Surgery as we coped with the ongoing pandemic. Our program moved from 61 to 26 in ranking in *US News* and *World Report*. With our inclusion in the rankings, we help make UC San Diego No. 1 for healthcare in San Diego.

Jeffrey Harris, MD, PhD was also honored as the primary discussant for the NEJM CPC at the Grand Rounds of the Departments of Neurology and Medicine at Mass General Hospital on April 8, 2021.

We are pleased to announce that health system leadership has approved a pathway for the transition of the Division to become an independent academic department. The process for this transition is a multi-year endeavor and will begin with the division's clinical programs functioning as a hospital-based department effective in the new academic year. The Division will remain as an academic division in the Department of Surgery until its application for campus designation as an independent department is complete. This achievement could not have occurred without the vision, support, and leadership the Chair of Surgery, **Bryan Clary, MD, FACS** and our very talented faculty.

Also this year, **Joseph A. Califano III, MD**, and colleagues received a major, transformative, philanthropic gift establishing the "Hanna and Mark Gleiberman Head and Neck Center." This will enable Dr Califano and the Head and Neck team to continue to provide world-class care to our community and forge new innovative research in the decades to come. In addition, Dr. Califano was the recipient of an endowed chair from the Iris and Matthew Strauss Family.

Rick Friedman, MD, PhD, and **Mark Schwartz, MD**, who direct UCSD's Acoustic Neuroma Program, were ranked #1 by Vizion for being the highest volume AN center in the US with best outcomes compared to more than 120 hospitals in the U.S.

RESEARCH

Dr. Theresa Guo Secures NIHKL2 Award

Theresa Guo, MD, was awarded an NIH KL2 career development award for her work in "Identification of splice variant derived neo-antigens in head and neck squamous cell carcinoma as targets for tumor vaccine therapy." Dr. Guo's overall objective is to investigate alternative splicing events, which are present and functionally active in head and neck squamous cell carcinoma (HNSCC). These splicing events represent an understudied source of tumor-specific protein diversity and potential neoantigens, which can be potential vaccine targets to enhance anti-tumoral immunity. The research will build a foundation for a career that bridges computational methods with translational applications of precision immunotherapy in head and neck oncology.

Dr. Ryan Orosco Receives SUSTAIN Award

Dr. Ryan Orosco's work focuses on moving futuristic technologies from the engineering lab toward potential use in the clinical setting. He received a 12-month SUSTAIN (Supporting Under-represented Scholars in Translational and Interdisciplinary Networks) Award from the ACTRI. He will continue his translational robotic surgery research with his engineering colleague, Dr. Michael Yip. Tissue modeling studies may lead to improvements in transoral robotic surgery methods. Additional work in semi-autonomy explores methods to train robots to perform surgical tasks like suctioning and suturing.



Residents learning at the Temporal Bone Lab.

Charles Coffey, MD, was chosen to receive the 2021 Leonard Tow Humanism in Medicine Award, presented by The Arnold P. Gold Foundation. This prestigious award is given annually to a faculty member who demonstrates both clinical excellence and outstanding compassion in the delivery of care and who shows respect for patients, their families, and healthcare colleagues.

Philip Weissbrod, MD, and **Michael Yip, PhD**, received funding for their Multi-PI National Institutes of Health R21 research titled, "Robotically Controlled Intraluminal Instruments for Flexible Endoscopic Intervention." The grant aims to develop and validate a robotic instrumentation approach for bronchoscopy procedures.

Theresa Guo, MD, was selected as the American Head and Neck Society-American Academy of Otolaryngology – Head & Neck Surgery Foundation Young Investigator Combined Award for her proposal entitled, "Establishing immunogenicity of splice variant derived neoantigens in HNSCC." The purpose of the award is to support a collaborative AHNS/AAO-HNSF research project by fostering the development of contemporary basic or clinical research skills focused on neoplastic disease of the head and neck among new full-time academic head and neck surgeons.

Carol Yan, MD, received an American Rhinologic Society (ARS), American Academy of Otolaryngology – Head & Neck Surgery Foundation (AAO-HNSF) and the Centralized Otolaryngology Research Effort (CORE) New Investigator Award for her proposal entitled, "Olfactory Stem Cells in Post-viral Olfactory Dysfunction."

Robert Saddawi-Konefka, MD, a PGY4 resident, received the SITC 2021 Annual Conference Young Investigator Travel Award. Funding was awarded to support presentation of his abstract, "Sequencing Immunotherapy before Lymphatic Ablation Unleashes cDC1-Dependent Antitumor Immunity in HNSCC."

Ryan Orosco, MD, launched a first-in-man Phase I/II clinical trial. This is an intraoperative imaging study that evaluates a novel drug (ALM-488), designed to make surgery safer through the fluorescent illumination of nerves. This study is being carried out in collaboration with Harvard and Stanford.

Rick A. Friedman, MD, PhD, received two NIH R01 awards for "The genetic basis for age-related hearing loss in outbred mice" and "The genetics of functional decline in the aging vestibular system: A Genome-Wide Association Study (GWAS) and gene expression analysis in aging mice and humans."

Jeffrey Harris, MD, PhD, and **Rick Friedman, MD**, received a \$1.2 philanthropic grant to study a GWAS analysis in Meniere's disease using a cohort of over 800 samples collected from patients with known phenotypes. Dr. Harris was also honored as the primary discussant for the NEJM CPC at the Grand Rounds of the Departments of Neurology and Medicine at Mass General Hospital this past spring.

OTOLARYNGOLOGY HEAD & NECK BOOT CAMP

We also successfully completed our 2nd Annual Southwest Otolaryngology Hands-on Boot Camp entitled "Effective Responses to Otolaryngology Emergencies" on Aug. 7 at the UCSD CFS and Simulation labs. Nine programs (UC Los Angeles, University of Southern California, Cedars Sinai, UC Irvine, Mayo-Arizona, University of Arizona, University of Nevada, LV, U.S. Naval Medical Center and UCSD) came to our course with their junior residents and some of their visiting faculty. The attendees and faculty were very impressed by our state-of-the-art Center for the Future of Surgery teaching facilities. This hands-on boot camp was again a huge success thanks to **David Hom, MD**, as the lead for this great learning opportunity.



FACULTY



Jeffrey Harris, MD, PhD

CHIEF OF DIVISION

Jeffrey Harris, MD, PhD

PROFESSORS OF SURGERY

Kevin Brumund, MD
Joseph Califano, MD
Daniela Carvalho, MD
Rick Friedman, MD
David Hom, MD
Anthony Magit, MD
Quyen Nguyen, MD, PhD
Deborah Watson, MD
Paul Schalch, MD
Robert Weisman, MD
Erika Zettner, PhD

ASSOCIATE PROFESSORS OF SURGERY

Matthew Brigger, MD
Charles Coffey, MD
Adam DeConde, MD
Tina Friesen, MD
Sapideh Gilani, MD
Shelby Leuin, MD
Anthony Magit, MD
Javan Nation, MD
Philip Weissbrod, MD
Jiang Wen, MD

ASSISTANT PROFESSORS OF SURGERY

Morgan Bliss, MD
Jansen Cornelius, MD
Jacqueline Greene
Theresa Guo, MD
Elina Kari, MD
Ryan Orosco, MD
Meghan Spriggs, AuD, CCC-A
Andrew Vahabzadeh-Hagh, MD
Carol Yan, MD

SELECTED PUBLICATIONS

1. Meta-analysis of risk of occult lymph node metastasis in the irradiated, clinically NO neck. Finegersh A, Moss WJ, Saddawi-Konefka R, Faraji F, Coffey CS, Califano JA, Brumund KT, Orosco RK. Head Neck. 2020 Sep;42(9):2355-2363.PMID: 32432819
2. Lee JH, Mohamed T, Ramsey C, Kim J, Kane S, Gold KA, Faraji F, Califano JA. A Hospital-Wide Intervention to Improve Compliance With TNM Cancer Staging Documentation. J Natl Compr Canc Netw. 2021 Aug 27:1-10. doi: 10.6004/jncn.2020.7799. Epub ahead of print. PMID: 34450596.
3. Coffey CS, MacDonald BV, Baxter SL, Shahrini B, Lander L. Remote Medical Education in Clinical Core Clerkships During the COVID-19 Pandemic. Medical Science Educator, 2020; 14:1-8.
4. Carol H Yan, Farhoud Faraji, Divya P Prajapati, Benjamin T Ostrander, Adam S DeConde. Self-reported olfactory loss associates with outpatient clinical course in COVID-19. Int Forum Allergy Rhinol 2020 Jul;10(7):821-831. doi: 10.1002/alr.22592. Epub 2020 Jun 7.
5. Moshtaghi O, Saliba J, Gupta M, Mehranpour P, Tawfik KO, Ren Y, Schwartz MS, Friedman RA. Predicting Functional Outcomes and Length of Stay Following Acoustic Neuroma Resection. Laryngoscope. 2021 Mar;131(3):644-648. PMID: 32757415
6. Revisit Rates for Pediatric Tonsillectomy: An Analysis of Admit and Discharge Times. Gilani S, Bhattacharyya N. Ann Otol Rhinol Laryngol. 2020 Feb;129(2):110-114. Ann Otol Rhinol Laryngol. 2020. PMID: 31526022
7. Advances in Facial Reanimation: Management of the Facial Nerve in the Setting of Vestibular Schwannoma. Funk, EK, Greene, JJ. Curr Otorhinolaryngol Reports. 2021 Mar; https://doi.org/10.1007/s40136-021-00343-9
8. Pang J, Nguyen NP, Luebeck J, Ball L, Finegersh A, Ren S, Nakagawa T, Flagg M, Sadat S, Mischel PS, Xu G, Fisch K, Guo T, Cahill G, Panuganti B, Bafna V, Califano J. Extrachromosomal DNA in HPV mediated oropharyngeal cancer drives diverse oncogene transcription. Clin Cancer Res. 2021 Sep 21:clincanres.CCR-21- 2484-A.2021. PMID: 34548317
9. Hitomi Sakano, M.D., Ph.D.1,2, Aria Jafari, M.D.2, Wisam Allehaiby, M.A.S.2,3, Jeffrey P. Harris, M.D., Ph.D.2 Otol & Neurotol Title: Spontaneous Intracranial Hypotension may be an under-recognized cause of Endolymphatic Hydrops Otol Neurotol.2020 Aug;41(7):e860-e863.doi: 10.1097/MAO.0000000000002665.
10. Crawford KL, Lee JH, Panuganti BA, Burton, B, Jafari A, Hom DB, Watson, D. Change in surgeon for revision rhinoplasty: the impact of patient demographics and surgical technique on patient retention, . Laryngoscope Investigative Otolaryngology (Nov 2020) https://doi.org/10.1002/lio2.496
11. Kari E, Gillard DM, Go JL, Chuang N, Llaci L, Naymik M, Knowles JA, Leal SM, Rangasamy S, Huentelman M, Liang W, Friedman RA, Fisher L, Loggins M, Emmanuel N, Schrauven I (2020)
12. Joe Saliba, Amir Mohammadzadeh, Kareem O Tawfik, Junie S Carriere, Marc S Schwartz, Quyen T Nguyen, Rick A Friedman. The Direct Costs of Microsurgical Resection of Vestibular Schwannomas. PMID: 31868780,DOI: 10.1097/MAO.0000000000002546
13. Richter F, Shen S, Liu F, Huang J, Funk E, Orosco R, Yip MC. Autonomous Robotic Suction to Clear the Surgical Field for Hemostasis using Image-based Blood Flow Detection. IEEE Robotics and Automation Letters (RA-L). 2021 April;6(3): 1383-90

DIVISION OF PLASTIC AND RECONSTRUCTIVE SURGERY

In the Division of Plastic and Reconstructive Surgery, we recognize and value the impact education and research have on the patient experience. The Division has continued the planned expansion of our clinical footprint for patients, enrichment of our educational offerings for fellows, residents, and medical students, and engagement in research projects.

This academic year saw many exciting developments for the Division of Plastic and Reconstructive Surgery. In July 2020, the Division introduced a new Plastic Surgery Residency Program Director, **Samuel Lance, MD, FACS**. Dr. Lance has served as Associated Director of the program since December of 2017, working steadily at improving the excellence of education in the program and enriching resident well-being. Dr. Lance has developed a multifaceted plan to continue elevating the residency experience. During the 20/21 integrated residency interview season, 306 students applied for residency, 40 were invited to interview, and 2 new residents entered the program.

Also contributing to an elevated education experience, **Chris Reid, MD**, took on the role of Director of the Plastic Surgery Grand Rounds Program. The pandemic brought multiple challenges to providing quality educational experiences, but it also allowed the Division to rethink some educational processes. Many institutions restructured didactic offerings by leaning into the introduction of web conferencing as a way to bring otherwise out-of-reach experts to the podium. Dr. Reid and the entire faculty body embraced the concept that resulted in 24 Visiting Grand Rounds speakers from across the nation and 5 Visiting Professors from professional societies and associations in the 2021 academic year.

The Division did not lose sight of the value of in-person hands-on training, though. The 2021 academic year saw the introduction of the Innovative Training Lab Series: Excellence in Plastic and Reconstructive Surgery. The Innovative Training Lab Series offers monthly sessions

in topics at the forefront of plastic and reconstructive surgery. Residents experience a wide variety of clinical areas, including basic anatomy, surgical techniques, burn surgery, hand surgery, peripheral nerve surgery, limb salvage, cleft and craniofacial reconstruction, aesthetic surgery, and microvascular surgery. Attendees walk away from this program with the advanced technical skills knowledge required to pursue more specialized facets of plastic surgery. The monthly lab series will take a progressive approach to learning surgical skills beginning with anatomy labs, microvascular training techniques using synthetic vessels and nerves, and hands-on saw bones courses. During the 20/21 academic year, there were 11 cadaver and microsurgery labs held as part of the inaugural year of the lab series.

In February of 2021, we proudly welcomed our newest faculty member, **Katharine Hinchcliff, MD**, Assistant

Professor of Plastic Surgery and Division of Plastic Surgery, Director of Hand and Peripheral Nerve Surgery. Dr. Hinchcliff was a welcome addition to the UC San Diego Health multidisciplinary team approach to hand surgery, pediatric hand surgery, extremity reconstruction, peripheral nerve repair and brachial plexus repair, enabling the medical center to care for a new patient population in-house. In March 2021, the Division also saw the addition of two Navy Plastic and Reconstructive surgeons, **Eamon O'Reilly, MD**,

and **Eamon O'Reilly, MD**. The addition of these two surgeons was part of a mutually important new agreement signed with the Navy to enhance patient care at UC San Diego Health and provide an expanded arena for our local Navy collaborators to achieve surgical excellence.

The faculty remained active in professional activities. During the 2020 California Society of Plastic Surgeons annual meeting, the Division was well-represented, with

The Division of Plastic Surgery is dedicated to helping shape the field to be more diverse and inclusive. We believe in fostering a culture where every student, trainee, faculty, staff, and patient feels their voices are heard, their views are respected, and their values are represented. In November, the Division proudly launched our official Plastic Surgery Mentorship program. This program is meant to provide support and 1:1 mentorship to students who are interested in learning how to help our field make sure underrepresented groups in surgery, from economically disadvantaged backgrounds, or without home plastic surgery programs can find a successful path to a career in surgery. During the first cycle of the Mentorship Program, the Division received more than 40 applicants for the mentorship program. The inaugural UC San Diego Plastic Surgery Diversity, Equity and Inclusion Mentor-Mentee Workshop was held in April with 18 learners from 15 different medical schools across the U.S. and Mexico.



Diversity, Equity and Inclusion Mentor-Mentee Workshop group photo



Dr. Meera Reghunathan, PY3, working with a DEI Mentee during the Mentor-Mentee Workshop

19 UC San Diego Plastic Surgery faculty, residents, fellows, recent alumni, and PSIG medical students presenting 13 Poster Presentations, 5 Paper Presentations, and 3 Career Day Sessions. The Division faculty, residents and medical students were responsible for 17 presentations at the 2020 American Society of Plastic Surgery annual meeting, PSTM. The 2nd Annual UC San Diego Plastic Surgery Research Symposium was held in May 2021 with the keynote address being delivered by **Evan Matros, MD, MMSc**.

There were 17 abstract presentations by fellows, residents and medical students.

The faculty also had a productive year of scholarly publication and grant activity. The Division saw a 116% increase in articles, with 67 publications by faculty and a 233% increase in book chapters, with 20 books chapters by faculty in 2020-2021. Residents and fellows also increased activity by 16%, with 22 articles in the '20-21 academic year. Additional scholarly productivity highlights included eight active faculty grants and more than 75 conference presentations.

SELECTED PUBLICATIONS

1. A Single-Center Retrospective Review of Perioperative Complications and Reoperation Rates Between Open Cranial Vault Remodeling and Distraction Osteogenesis for Unilateral Coronal Craniosynostosis. *J Craniofac Surg.* 2021 Jun 30. Kamel GN, Wong A, Segal RM, Carbullido MK, Hornacek M, Ewing E, Lance SH, Gosman AA. PMID: 34191770.
2. Career Development in Plastic Surgery. *Plast Reconstr Surg.* 2021 Jun 01; 147(6):1441-1449. Carbullido MK, Hornacek M, Reid CM, Gosman A. PMID: 34019517.
3. The Influence of Academic Pedigree on Integrated Plastic Surgery Resident Training Location. *J Surg Educ.* 2021 May 05. Davis GL, Dean RA, Reid CM, Gosman AA. PMID: 33965359.
4. Long-Term Treatment Outcomes of Primary Alveolar Bone Grafts for Alveolar Clefts: A Qualitative Systematic Review. *Cleft Palate Craniofac J.* 2021 Feb 25; 1055665621995047. Carbullido MK, Dean RA, Kamel GN, Davis GL, Hornacek M, Segal RM, Ewing E, Lance SH, Gosman AA. PMID: 33631994.
5. The Implementation of an Acute Pain Service for Patients Undergoing Open Ventral Hernia Repair with Mesh and Abdominal Wall Reconstruction. *World J Surg.* 2021 Apr; 45(4):1102-1108. Said ET, Drueding RE, Martin EI, Furnish TJ, Meineke MN, Sztain JF, Abramson WB, Swisher MW, Jacobsen GR, Gosman AA, Gabriel RA. PMID: 33454790.
6. Establishing a Virtual Curriculum for Surgical Subinternships. *Plast Reconstr Surg.* 2020 10; 146(4):525e-527e. Dean RA, Reghunathan M, Hauch A, Reid CM, Gosman AA, Lance SH. PMID: 32970022.
7. Regenerative and stem cell-based techniques for facial rejuvenation. *Exp Biol Med (Maywood).* 2021 Aug; 246(16):1829-1837. Crowley JS, Liu A, Dobke M. PMID: 34102897.
8. Subclinical Infection of the Silicone Breast Implant Surface as a Possible Cause of Capsular Contracture: A Follow-Up. *Aesthetic Plast Surg.* 2020 08; 44(4):1148-1150. Dobke M, Hauch A, Crowley J. PMID: 32766898.
9. What Behaviors Define a Good Physician? Assessing and Communicating About Noncognitive Skills. *Acad Med.* 2021 Jun 22. Warm EJ, Kinnear B, Lance S, Schauer DP, Brenner J. PMID: 34166233.
10. Preparing for Plastic Surgery Residency Interviews in a Virtual Era. *Plast Reconstr Surg Glob Open.* 2020 Oct; 8(10):e3178. Dean RA, Patel AA, Shen AH, Griffith LP, Lance SH. PMID: 33173690.
11. Multidisciplinary clinic for care of children with complex obstructive sleep apnea. *Int J Pediatr Otorhinolaryngol.* 2020 Nov; 138:110384. DeVries JK, Nation JJ, Nardone ZB, Lance SH, Stauffer JA, Abichaker GM, Bhattacharjee R, Lesser DJ. PMID: 33152975.
12. Hand Surgery Referral Pattern Preferences Among Primary Care Physicians in Academic Centers in the Southeastern United States. *Ann Plast Surg.* 2020 12; 85(6):622-625. Jain A, Hermiz S, Suliman A, Herrera FA. PMID: 33170581.
13. Management of Giant Sacral Pseudomeningocele in Revision Spine Surgery. *Int J Spine Surg.* 2020 Oct; 14(5):778-784. Al Jammal OM, Wali AR, Lewis CS, Zaldana MV, Suliman AS, Pham MH. PMID: 33097586.
14. Detailed analysis of the impact of surgeon and hospital volume in microsurgical breast reconstruction. *Microsurgery.* 2020 Sep; 40(6):670-678. Reid CM, Parmeshwar N, Brandel MG, Crisera CA, Herrera FA, Suliman AS. PMID: 32304337.
15. The Ideal Microsurgery Fellowship: A Survey of Fellows and Fellowship Directors. *J Reconstr Microsurg.* 2021 Feb; 37(2):167-173. Reghunathan M, Zaldana-Flynn M, Rose J, Crisera CA, Reid CM. PMID: 32871603.
16. Detailed analysis of the impact of surgeon and hospital volume in microsurgical breast reconstruction. *Microsurgery.* 2020 Sep; 40(6):670-678. Reid CM, Parmeshwar N, Brandel MG, Crisera CA, Herrera FA, Suliman AS. PMID: 32304337.
17. The Chimeric Scapulodorsal Vascularized Latissimus Dorsi Nerve Flap for Immediate Reconstruction of Total Parotidectomy Defects With Facial Nerve Sacrifice: Building a New Program and Preliminary Results From 25 Cases. *Ann Plast Surg.* 2021 05 01; 86(5S Suppl 3):S379-S383. Li SS, Mangialardi ML, Nguyen QT, Orosco RK, Honart JF, Qasemyar Q, Kolb FJ. PMID: 33976066.
18. Bailey CM, Hinchcliff KM, Moore Z, Pu LLQ. Dog Bites in the United States from 1971 to 2018: A Systematic Review of the Peer-Reviewed Literature. *Plast Reconstr Surg.* 2020 Nov; 146(5):1166-1176. PMID: 33136964.
19. Hinchcliff KM, Pulos N, Shin AY, Stutz C. Morbidity of Nerve Transfers for Brachial Plexus Birth Injury: A Systematic Review. *J Pediatr Orthop.* 2021 Feb 1; 41(2):e188-e198. PMID: 33177353.

HONORS/AWARDS

Amanda Gosman, MD, FACS

Dr. Amanda Gosman was named Co-Editor of Plastic and Reconstructive Surgery Global Open and received the 2021 UCSD Health Sciences Women Leadership Award for extraordinary leadership in surgery. Dr. Gosman also received a \$1 million dollar philanthropic donation to support her research on quality of life for children with facial differences, as well as a \$50,000 grant for Advancing Pediatric Health Disparities.

Chris Reid, MD

Dr. Chris Reid became certified by the American Board of Plastic Surgery and received a UCSD AoSC grant for his reduction of work-related musculoskeletal disorders in plastic surgeons via introduction of a posture-training device research.

Frederic J. Kolb, MD

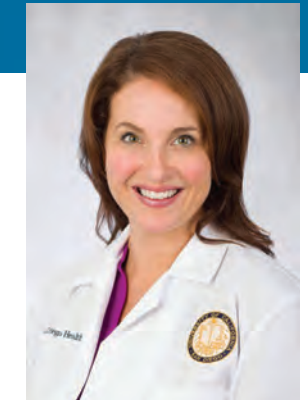
Dr. Frederic Kolb received a UCSD AoCS grant for his Robotic mastectomy: A histologic quality assessment of the technique" research.

Marek Dobke, MD, PhD

Dr. Marek Dobke was a named Co-Pi in an NIH R01 grant on the topic of tissue repair, extracellular vesicular biogenesis, and the control of immune responses. Dr. Dobke was also honored for Most Frequently Cited Article in Aesthetic Plastic Surgery.

Ahmed S. Suliman, MD, FACS

Dr. Ahmed Suliman was elected to President of the San Diego Plastic Surgery Society.



Amanda Gosman, MD

CHIEF OF DIVISION

Amanda Gosman, MD, FACS

PROFESSORS OF SURGERY

Marek Dobke, MD, PhD
Amanda Gosman, MD, FACS
Frederic Kolb, MD

ASSOCIATE PROFESSORS OF SURGERY

Mark Rechnic, MD
Ahmed Suliman, MD, FACS

ASSISTANT PROFESSORS OF SURGERY

Katharine Hinchcliff, MD
Samuel Lance, MD, FACS
Christopher Reid, MD



Division Faculty and Residents

From left to right: Anthony Kordahi, Frederic Kolb, Samuel Lance, Sean Li, Chris Reid, Marek Dobke, Alvin Wong, Sarah Crowley, Michelle Zaldana Flynn, Amanda Gosman, Paige Mclean, Garrison Leach, Mark Rechnic, Riley Dean, Ahmed Suliman

DIVISION OF PEDIATRIC SURGERY

Committed to improving the health and welfare of children and adolescents living in San Diego County, the Division of Pediatric Surgery provides comprehensive surgical care in subspecialties such as general abdominal, trauma, oncology, neonatal and colorectal surgery.

The Division of Pediatric Surgery supports an ever-evolving clinical mission. This year, the Division flexed to care for older trauma patients and young adults with our partners in adult care handling the height of pandemic patient flow. We adjusted our clinical operations to extend to telemedicine. All elective surgical patients were tested for COVID-19 to protect our patients, families, and care-givers. It was important to our Division that we provide whatever care needed in the safest way possible. COVID-19 may have changed a lot about our society and how we practice medicine, but no matter how much things change, the Division will always be a safety net to the children of San Diego.

One of the highest priorities of the Division of Pediatric Surgery is the exposure of medical students, residents, and fellows to pediatric surgery. Learners of all levels have the opportunity to participate in the life-changing care provided to children. The Division has a strong history of advocacy in terms of pediatric trauma on both a national and international level. From a research standpoint, the Division has more than 30 active IRB (Institutional Review Board) projects, and members of the Division have presented research at most national meetings for the last several years. Our faculty have also participated in the organization and implementation of the national Pediatric Surgery Transition to Fellowship Course (AKA boot camp). Members of the Division have also participated in multiple successful quality projects, and the quality of the care provided by the Division of Pediatric Surgery is under continuous evaluation and improvement.

The practice of Pediatric Surgery is considered an honor and privilege by the faculty, and we are striving to improve the care we provide. Telemedicine has taught us we can provide this care via a new medium. The impact of Covid-19 on our community has strengthened our resolve to provide care, educate learners and improve the quality of our care through research. We look forward to the challenges that are ahead and hope that all of us are safe and healthy moving forward.

FACULTY ACHIEVEMENTS

Steven Bickler, MD

Dr. Steven Bickler continues his work in international health. This year he has published several articles and presented to organizations such as the World Congress of Surgery, American College of Surgeons and College of Surgeons of East, Central and Southern Africa on the current status of international health programs.

Timothy Fairbanks, MD

Dr. Timothy Fairbanks is the Division Chief. He is active in the administration of all the pediatric surgical sub-specialties in San Diego. He was the course director for the national Pediatric Surgery Transition to Fellowship Course. UCSD/Rady was the host site, although the course was unfortunately held virtually.

Romeo Ignacio, MD

Dr. Romeo Ignacio is the Trauma Medical Director at Rady Children's Hospital. He is active in clinical research and has mentored many student and resident projects. He has been successful grant funded for this work. He also serves many important roles on national meetings and committees.

Benjamin Keller, MD

Dr. Benjamin Keller completed fellowship in July of 2020. In Dr. Keller's first year with the team, he has proven invaluable in clinical care and is currently performing additional training in critical care.

Karen Kling, MD

Dr. Karen Kling is the heart and soul of the pediatric surgery fellowship program. She continues her leadership in the educational content for students, residents and fellows. She has presented her research at multiple national conferences.

David Lazar, MD

Dr. David Lazar is a proud UC San Diego general surgery residency alumnus. He has proven to be a clinical work horse, building a diverse clinical practice. He is also proud to serve as the liaison to UCSD general surgery residents. He continues multiple research projects and leads our Quality Initiative projects.

Nicholas Saenz, MD

Dr. Nicholas Saenz provides excellent care for general surgery patients and specialized multidisciplinary surgical care to pediatric surgical oncology patients.

Hari Thangarajah, MD, MPH

Dr. Hari Thangarajah is the Medical Staff Section Chief. He continually strives for quality improvement and is active in various clinical research projects. His patient satisfaction scores are among the highest in the hospital across all specialties.

AWARDS

Sykes, A., "Balloons for Kids: Anatomic Candidacy and Optimal Catheter Size for Pediatric Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA)," winner Clinical Investigations Paper competition at the American College of Surgeons Excelsior Society annual meeting (2021-2022)

BOOK CHAPTERS

Sisson B., Ignacio R., Martin M. (2021) Pediatric Surgery and Clinical Care. Surgical Critical Care and Emergency Medicine.

Sykes A., Ignacio R., Fallat M. (2021) Ovarian Tumors. Pediatric Surgery.

Halbach J., Ignacio R. (2021) Thoracic Trauma. Pediatric Trauma.

Prieto J., Ignacio R. (2021) Peripheral vascular Injuries. Pediatric Trauma

Dimutru A., Ignacio R. (2021) Trauma Resuscitation and Initial Evaluation. Pediatric Trauma

Sykes A., Ignacio R. (2021) Principles of U.S. Navy Humanitarian Missions, in Expeditionary Surgery at Sea. A Practical Guide for Maritime Surgical Teams



From left to right: David Lazar MD, Ben Keller MD, Romeo Ignacio MD

FACULTY



Timothy Fairbanks, MD

CHIEF OF DIVISION
Timothy Fairbanks MD, MBA

PROFESSORS OF SURGERY
Stephen Bickler MD
Karen Kling MD
Nicholas Saenz MD

ASSOCIATE PROFESSOR OF SURGERY
Romeo Ignacio MD

ASSISTANT PROFESSORS OF SURGERY
David Lazar MD
Benjamin Keller MD
Hari Thangarajah MD, MPH



SELECTED PUBLICATIONS

- Ovarian volume ratio is a reliable predictor of ovarian torsion in girls without an adnexal mass. Hartman SJ, Prieto JM, Naheedy JH, Ignacio RC, Bickler SW, Kling KM, Saenz NC, Fairbanks TJ, Lazar DA. *J Pediatr Surg.* 2021 Jan;56(1):180-182. doi: 10.1016/j.jpedsurg.2020.09.031. Epub 2020 Oct 6. PMID: 33121739.
- Patience is a virtue: Multiple preoperative visits are associated with decreased recurrence in pediatric pilonidal disease. Prieto JM, Thangarajah H, Ignacio RC, Bickler SW, Kling KM, Saenz NC, Garcia SV, Lazar DA. *J Pediatr Surg.* 2021 May;56(5):888-891. doi: 10.1016/j.jpedsurg.2020.09.013. Epub 2020 Sep 22. PMID: 33046223.
- Laparoscopic duodenojejunostomy for superior mesenteric artery syndrome in a 13 year-old boy
- JM Prieto, JL Halbach, RC Ignacio, DA Lazar - *Journal of Pediatric Surgery Case Reports*, June 2021
- Identifying Risk Factors for Enteral Access Procedures in Neonates with Congenital Diaphragmatic Hernia: A Novel Risk-Assessment Score. James M. Prieto a, Matthew T. Harting FAAP b, Richard Y. Calvo c, Jeanne M. Carroll d, Alicia G. Sykes a, Romeo C. Ignacio FAAP a, Ashley H. Ebanks b, David A. Lazar FAAP a, for the Congenital Diaphragmatic Hernia Study Group, *Journal of Pediatric Surgery.* 2021 Feb 24.
- Assessment of Surgical Care Provided in National Health Services Hospitals in Mozambique: The Importance of Subnational Metrics in Global Surgery. Cossa M, Rose J, Berndtson AE, Noormahomed E, Bickler SW. *World J Surg.* 2021 Jan 31.
- Regulation of the Nfkbiz gene and its protein product I κ B in animal models of sepsis and endotoxic shock. Casas A Jr, Hawisher D, De Guzman CB, Bickler SW, De Maio A, Cauvi DM. *Infect Immun.* 2021 Jan 11.
- Inclusion of Children's Surgery in National Surgical Plans and Child Health Programmes: the need and roadmap from Global Initiative for Children's Surgery. Seyi-Olajide JO, Anderson JE, Kaseje N, Ozgediz D, Gathuya Z, Poenaru D, Johnson W, Bickler SW, Farmer DL, Lakhoo K, Oldham K, Ameh EA; Global Initiative for Children's Surgery. *Pediatr Surg Int.* 2021 Jan 5.
- Expanding the genotypic spectrum of ACTG2-1 related visceral myopathy. Kiely N, James, Megan Lau, Katayoon Shayan, Jerica Lenberg, Rebecca Mardach, Romeo Ignacio Jr., Jonathan Halbach, Lillian Choi, Soma Kumar, Katarzyna A. Ellsworth; Cold Spring Harbor Laboratory Press. 2021 April 27.
- Extremes of Age are Associated with Differences in the Expression of Selected Pattern Recognition Receptors and ACE2, the Receptor for SARS-COV-2: Implications for the Epidemiology of COVID-19 Disease. Stephen W. Bickler, MD; David M. Cauvi, PhD; Kathleen M. Fisch, PhD; James M. Prieto, MD; Alicia D. Gaidry, MD; Hariharan Thangarajah, MD; David Lazar, MD; Romeo Ignacio, MD; Dale R. Gerstmann, MD; Allen F. Ryan, PhD; Philip E. Bickler, MD, PhD; Antonio De Maio, PhD. *BMC Medical Genomics* 2021 April 2021
- Attitudes Affecting Decision-making for Use of Radiologic Enteral Contrast in the Management of Pediatric Adhesive Small Bowel Obstruction: A Survey Study of Pediatric Surgeons. Acker SN, Diaz-Miron J, Ignacio RC, Russell KW, Lofberg K, Shew SB, Peterson PN, Kelley-Quon LI, Jensen AR, Lee J, Padilla B, Smith CA, Kastenber ZJ, Azarow KS, Ostlie DJ, Wang KS, Inge TH; Western Pediatric Surgery Research Consortium. *J Surg Res.* 2021 Jul 10;267:536-543. doi: 10.1016/j.jss.2021.06.004. Epub ahead of print. PMID: 34256196.



At Left: Dr. David Lazar and team prep for work in the OR. At Right: Dr. David Lazar

PODIUM PRESENTATIONS:

- » Pediatric Trauma in the California-Mexico Border Region: Injury Disparities by Area Deprivation Index. Accepted for oral presentation at the 80th Annual Meeting of the American Association for the Surgery of Trauma and Clinical Congress of Acute Care Surgery (A. Sykes) (September-October 2021)
- » Balloons for Kids: Anatomic Candidacy and Optimal Catheter Size for Pediatric REBOA. Accepted for oral presentation at the 2021 Department of Surgery Virtual Annual Research Symposium (A. Sykes) (May 2021)
- » Trial and Error: Learning from Malpractice Claims in Childhood Surgery. Accepted for oral presentation at the 2021 Department of Surgery Virtual Annual Research Symposium (J. Prieto) (May 2021)
- » Balloons for Kids: Anatomic Candidacy and Optimal Catheter Size for Pediatric REBOA. Accepted for QuickShot at the 80th Annual Meeting of the American Association for the Surgery of Trauma & Clinical Congress of Acute Care Surgery (A. Sykes) (May 2021)
- » Modified Laparoscopic Gastrostomy Tube Placement in Children: Does Subcutaneous Suture Type Matter? Accepted for an oral presentation at the International Pediatric Endosurgery Group (A. Sykes) (May 2021).
- » Under-5 Mortality and Access to Surgical Care & Estimated Number of Pediatric Deaths Avertable by Scaling Up Surgical Care at First-Level Hospitals in Low and Middle-Income Countries. Accepted for recorded session at the American Pediatric Surgery Association 2021 (A. Sykes) (June 2021).
- » Alicia D. Gaidry MD, Renee Douglas RN, Kelly Wisecarver RN, Cindy Burgal RN Kevin Smith RN Berda Taylor, Matthew Derkrikorian RN, Hari Thangarajah MD, David Lazar MD, Timothy Fairbanks MD, Romeo C Ignacio, Jr MD, Breaking Down the Silos: 35 years of Collaboration between Adult and Pediatric Trauma Services, Accepted for podium presentation for the Western Pediatric Trauma Conference (July 2021).
- » A. G. Sykes, Modified Laparoscopic G Tube Placement in Children: Does Subcutaneous Suture Type Matter, Accepted for presentation at the International Pediatric Endosurgery Group (June 2021)



DIVISION OF SURGICAL ONCOLOGY

The Division of Surgical Oncology maintains a robust clinical and research enterprise and has the distinction of offering clinical programs that draw patient referrals nationally and internationally.

Our faculty are at the forefront of treatment for patients with GI stromal tumor, esophagogastric, hepatobiliary-pancreatic, and peritoneal malignancies, and in the use of fluorescence guided surgery.



All division members are active in basic and/or clinical research, and division members are funded by the National Institutes of Health/ National Cancer Institute, the Veterans Administration, and Stand Up to Cancer, among others. Residents interested in surgical oncology are strongly encouraged to join one of these laboratories during their research years.

In 2020, the Division of Surgical Oncology continued to grow its research portfolio, while maintaining its central role in the care of solid tumor oncology patients during the COVID-19 pandemic. In the research domain, the faculty made important contributions to our understanding of the basis and treatment of oncologic disease, to developing guidelines for the care of surgical oncology patients, and to the numerous surgical societies and national organizations supporting cancer patients.



From left to right: Research fellows Hiroto Nishino and Michael Turner, Dr. Bouvet and research associate Siamak Amirfakhri

Among the highlights in the realm of clinical care, UC San Diego continues to be a national referral center for the care of gastrointestinal stromal tumor and other complex gastrointestinal sarcoma patients under the strong leadership of **Jason Sicklick, MD**. Programs in cytoreductive surgery/HIPEC have remained robust and the endocrine and pancreatic surgery volumes continue to grow.

Patient outcomes have improved under the leadership of **Jula Veerapong, MD**, who directs the ERAS program. The marked improvement in multiple quality indicators has led to the expansion of ERAS to numerous services throughout the health system. Since the hiring of the ERAS Program Coordinator in February 2019 and launching the ERAS Program in July 2019, the 30-day morbidity, median hospital length of stay, and readmission rates have decreased from FY2019 through FY2020 for the Surgical Oncology and Colorectal Divisions. These results have persisted through FY2021.



From left to right to: Dr. Abdul-Rahman Jazieh, MD, MPH, Chair of the Department of Oncology and Dr. Andrew M. Lowy, Chief Division of Surgical Oncology at King Abdulaziz Medical City. Dr. Jazieh hosted Dr. Lowy as a visiting professor in February, 2020.

In the past year, a clinical trial for patients undergoing Heated Intraperitoneal Chemoperfusion (HIPEC) surgery led by **Joel Baumgartner, MD**, was completed and demonstrated a shortened length of stay for patients who received the experimental agent. This was presented by Dr. Baumgartner at the American College of Surgeons Clinical Congress in Fall 2021 and will prompt a change in clinical practice.

It was another very successful year for the Division in terms of securing grant funding. **Rebekah White, MD, FACS**, and **Michael Bouvet, MD**, received new R01 awards focusing on the study of pancreatic cancer, while **Andrew M. Lowy, MD, FACS**, and **Dr. Sicklick** received foundation awards focusing on pancreatic cancer and sarcoma, respectively. All surgeon-scientists within the division now hold R01 awards from the NIH, a truly spectacular achievement. **Herve Tiriatic, PhD**, developed multiple funded academic-industry translational collaborations based on his expertise in the evaluation of novel therapeutic agents in organoid model systems. Drs. White and Tiriatic, along with Dr. Dannie Engle from the Salk Institute, received an award from Padres Pedal the Cause to study organoids from chronic pancreatitis issues.

Division members continued to publish in high-impact journals, including *Cancer Cell*, *Cancer Discovery*, *Nature Communications*, *Clinical Cancer Research*, *Oncogene*, *JAMA Oncology*, *JCO Precision Oncology*, *Annals of Surgery*, *Annals of Surgical Oncology*, and *Journal of the American College of Surgeons*. Among the highlights was a study from Dr. Lowy's laboratory published in the journal *Nature Communications*, demonstrating the impact and mechanism of the tumor-penetrating peptide, iRGD, in improving

response to chemotherapy in pancreatic cancer. This has led to the development of a Phase 2 clinical trial that will be run by SWOG and led by UC San Diego investigators.

Dr. Baumgartner led a multi-institutional study of the natural history of low-grade mucinous neoplasm of the appendix, which was published in *Annals of Surgical Oncology*. **Kaitlyn Kelly, MD**, used data from UC San Diego to demonstrate differential responses to neoadjuvant chemotherapy in Hispanic patients with gastric cancer, with results published in the *Journal of Surgical Oncology*. Dr. Sicklick's laboratory has made multiple discoveries that contribute to our understanding of the biology of GI Stromal Tumor, including demonstrating the importance and cost-effectiveness of tumor genetic testing, work that was published in the *JAMA Network journal*.

HONORS/AWARDS

Dr. Sicklick

Named Executive Vice Chair for Research, Department of Surgery

2020 San Diego's Top Doctors in *San Diego Magazine*

Honoree, National Organization for Rare Disorders (NORD) Rare Impact Award

Recipient, UC San Diego Foundation's 2021 Excellence in Stewardship Award

Dr. Lowy

2020 San Diego's Top Doctors in *San Diego Magazine*

Honored by NCI for 6 years of service as Chair, Pancreatic Cancer Task Force

Receipt of Translational Research Award from The Lustgarten Foundation

Dr. Baumgartner

Receipt of Academy of Clinician Scholars Award for "Pilot Study of Cell-Free Circulating Tumor DNA after Surgery for Peritoneal Metastasis"

Dr. Bouvet

Receipt of RO1 "Molecular Imaging Probe(s) for Optical Surgical Navigation of Pancreatic Cancer"

Dr. Veerapong

2020 San Diego's Top Doctors in *San Diego Magazine*

Dr. White

Elected President of SUS (Society of University Surgeons)

Receipt of RO1 "Combining Irreversible Electroporation with Immunotherapy for the Systemic Treatment of Pancreatic Cancer"

Dr. Kelly

Named Co-Disease leader for GI Oncology, UC San Diego Moores Cancer Center

Named Vice-Chair of Surgical Clinical Trial Development for American College of Surgeons Clinical Research Program Cancer Care Standards Development Committee

Division members continue to play leadership roles both within the Department and the UC San Diego Health System. Dr. Lowy serves as Associate Clinical Director of the Moores Cancer Center. Dr. White serves as Director of the GI Oncology Multispecialty Clinic Services at UC San Diego Medical Center, Hillcrest. Dr. Veerapong continues to lead the ever-expanding ERAS program at UC San Diego. Dr. Bouvet serves as co-director of the new UC San Diego Center for Fluorescence Guided Surgery. As noted, Dr. Sicklick now serves the Executive Vice Chair for Research in the Department of Surgery. Dr. Yuan Chen was named Chief of the newly formed Division of Surgical Sciences, and she will continue in her role as a member of the Division of Surgical Oncology. Dr. Joel Baumgartner continues to serve as the Co-director for medical student education. Several members of the division co-lead oncology disease teams within Moores Cancer Center including; Dr. Baumgartner, Melanoma, Dr. Kelly, GI and Dr. Sicklick, Sarcoma.

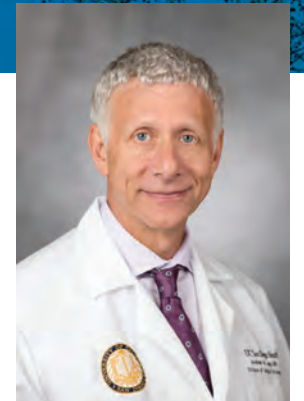


Celebrating GIST Awareness Day:
From left to right: *Shruti Bhargava, PhD, Chih-Min Tang, PhD, Ashwyn Sharma, MD, Jason Sicklick, MD, Hyunho Yoon, PhD, Partha Ray, PhD, Jacob Davis, BS*



From left to right: *Drs. Jennifer Berumen (Transplant/Hepatobiliary), Dr. Kaitlyn Kelly, Dr. Mark Zhao (current chief resident)*

FACULTY



Andrew M. Lowy, MD

CHIEF OF DIVISION

Andrew M. Lowy MD, FACS

PROFESSORS OF SURGERY

Bryan Clary, MD, MBA
Jason Sicklick, MD, FACS
Michael Bouvet, MD, FACS
Yuan Chen, PhD

ASSOCIATE PROFESSORS OF SURGERY

Joel Baumgartner, MD
Kaitlyn Kelly, MD
Jula Veerapong, MD
Rebekah White, MD

ADJUNCT FACULTY OF SURGERY

Ray Partha, MD

SELECTED PUBLICATIONS

1. Hurtado de Mendoza T, Mose ES, Botta GP, Braun GB, Kotamraju VR, French RP, Suzuki K, Miyamura N, Teesalu T, Ruoslahti E, Lowy AM, Sugahara KN. Tumor-penetrating therapy for 5 integrin-rich pancreas cancer. *Nat Commun*. 2021 Mar 9;12(1):1541. doi: 10.1038/s41467-021-21858-1.PMID: 33750829
2. Baumgartner JM, Riviere P, Lanman RB, Kelly KJ, Veerapong J, Lowy AM, Kurzrock R. Prognostic Utility of Pre- and Postoperative Circulating Tumor DNA Liquid Biopsies in Patients with Peritoneal Metastases. *Ann Surg Oncol*. 2020 Sep;27(9):3259-3267. doi: 10.1245/s10434-020-08331-x. Epub 2020 Aug 6.PMID: 32767050
3. Cazes A, Betancourt O, Esparza E, Mose ES, Jaquish D, Wong E, Wascher AA, Tiriach H, Gymnopoulos M, Lowy AM. A MET Targeting Antibody-Drug Conjugate Overcomes Gemcitabine Resistance in Pancreatic Cancer. *Clin Cancer Res*. 2021 Apr 1;27(7):2100-2110. doi: 10.1158/1078-0432.CCR-20-3210. Epub 2021 Jan 15.PMID: 33451980
4. Baumgartner JM, Srivastava A, Melnitchouk N, Drage MG, Huber AR, Gonzalez RS, Bell P, Wu E, Resnick M, Turaga K, Poli E, Esquivel J, Deneve J, Kelly KJ, Veerapong J, Lowy AM. A Multi-institutional Study of Peritoneal Recurrence Following Resection of Low-grade Appendiceal Mucinous Neoplasms. *Ann Surg Oncol*. 2021 Aug;28(8):4685-4694. doi: 10.1245/s10434-020-09499-y. Epub 2021 Jan 7.PMID: 33415564
5. Yoon H, Tang CM, Banerjee S, Yebra M, Noh S, Burgoyne AM, Torre J, Siena M, Liu M, Klug LR, Choi YY, Hosseini M, Delgado AL, Wang Z, French RP, Lowy A, DeMatteo RP, Heinrich MC, Molinolo AA, Gutkind JS, Harismendy O, Sicklick JK. Cancer-associated fibroblast secretion of PDGFC promotes gastrointestinal stromal tumor growth and metastasis. *Oncogene*. 2021 Mar;40(11):1957-1973. doi: 10.1038/s41388-021-01685-w. Epub 2021 Feb 18.PMID: 33603171
6. Rajabnejad A, Vaida F, Valasek M, Razzaque S, Fanta P, Horgan S, Bouvet M, Lowy AM, Kelly KJ. Predictors and significance of histologic response to neoadjuvant therapy for gastric cancer. *J Surg Oncol*. 2021 May;123(8):1716-1723. doi: 10.1002/jso.26458. Epub 2021 Mar 18.PMID: 33735448
7. Banerjee S, Kumar A, Lopez N, Zhao B, Tang CM, Yebra M, Yoon H, Murphy JD, Sicklick JK. Cost-effectiveness Analysis of Genetic Testing and Tailored First-Line Therapy for Patients With Metastatic Gastrointestinal Stromal Tumors. *JAMA Netw Open*. 2020 Sep 1;3(9):e2013565. PMID: 32986105.
8. Hollandsworth HM, Schmitt V, Amirfakhri S, Filemoni F, Schmidt A, Landström M, Lydin M, Backert S, Gerhard M, Wennemuth G, Hoffman RM, Singer BB, Bouvet M. Fluorophore-conjugated *Helicobacter pylori* recombinant membrane protein (HopQ) labels primary colon cancer and metastases in orthotopic mouse models by binding CEA-related cell adhesion molecules. *Transl Oncol*. 2020 Dec;13(12):100857. doi: 10.1016/j.tranon.2020.100857. Epub 2020 Aug 28.PMID: 32866936

DIVISION OF SURGICAL SCIENCES

The Division of Surgical Sciences (DSS) is the newest Division to join the UC San Diego Department of Surgery. DSS conducts leading edge cross-disciplinary research on elucidating mechanisms of human diseases and on developing new diagnostics and therapeutics, and DSS laboratories have remained active through the pandemic.

Our faculty members actively participate in education and serve as program co-director and mentors for National Institutes of Health (NIH) funded research training programs for surgical residents, graduate students and postdoctoral fellows. Our research programs focus on various surgical diseases and are supported by relevant institutes of the NIH, including National Institute on Alcohol Abuse and Alcoholism, National Institute of Diabetes, Digestive and Kidney Diseases, National Institute of General Medical Sciences, National Cancer Institute, National Institute of Dental and Craniofacial Research, and the Veteran's Administration, among others.

RESEARCH HIGHLIGHTS:

Professor **Allen Ryan**'s laboratory has published 15 papers in 2020-2021, on topics from noise- and drug-induced hearing loss to ear infections. For example, a postdoctoral fellow in his laboratory, Jeffrey Savas, PhD, performed a study to examine hearing loss that was published in the prestigious journal *Cell Reports*. In this study, they analyzed the proteins in mouse cochlear immediately after the mice were exposed to loud noise. The group discovered that many proteins are changed or damaged during noise, and several processes that participate in or guard against protein damage are activated. The results suggest that hearing loss resulting from loud noise could be prevented by drugs that protect inner ear nerve proteins from damage.

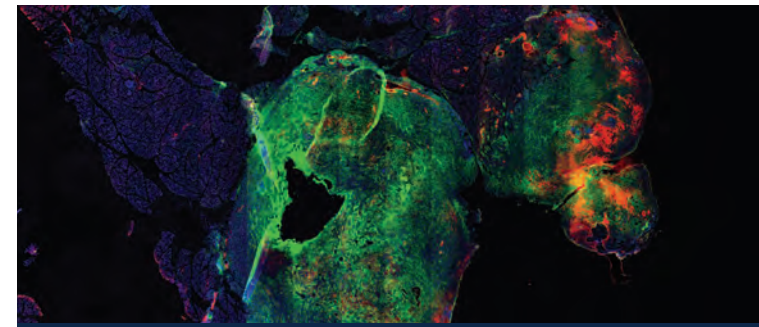


Brian Eliceiri, PhD, and his lab use state-of-the-art technologies for the analysis of immune cells that mediate inflammation response. The neural regulation of immune cells is a mechanism that bridges inputs from the nervous system with the local inflammation response — a mechanism that is dysfunctional in cancer and following severe injury. They study the function of nicotinic acetylcholine receptors in the regulation of adaptive immunity. In addition, they are examining mechanisms regulating the biogenesis of extracellular vesicles and their role in mediating tissue repair. An example of their collaborative work in tissue repair is a recent article published in the prestigious journal *Nature Communication* identifying a novel biochemical pathway that mediates re-vascularization and tissue repair.

Professor **James Friend**'s laboratory published work reporting a new steerable microcatheter for neurointervention, discovering new methods for separating whole blood droplet samples, discovering a method for propelling fluids and manipulating and mixing ~100 fL droplets at the nanoscale for rapid handheld diagnostics, and helping fight COVID-19 with new ventilators and patient negative pressure containment systems. They also have devised new portable atomization devices for pulmonary delivery of drugs and vaccines, and reported the characteristics of durable submicron gas vesicles useful for ultrasound-based imaging and treatment of brain tumors.



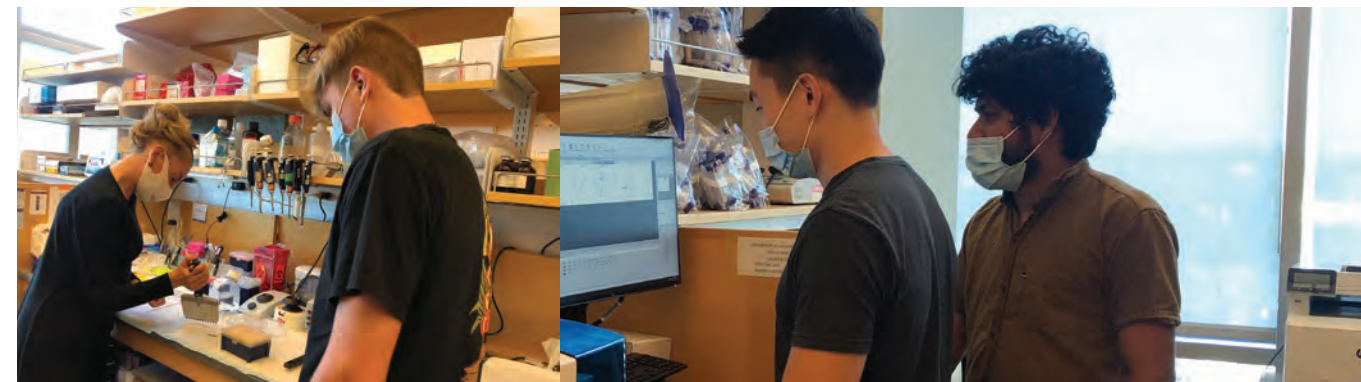
Injury in neurovasculature: < 1mm x 1.6m steerable micro hydraulic endovascular devices for treatment from groin



Tumor Specific Targeting by iRGD:
iRGD (green) homes to stroma rich (red) pancreatic tumor, without entering the adjacent normal pancreas.

Project Scientist, **Dr. Tatiana Hurtado De Mendoza** and colleagues published a study in the prestigious journal *Nature Communications*. In this study, they showed that a synthetic molecule known as iRGD significantly enhances therapy for 5 integrin-rich pancreatic cancer and iRGD in combination with chemotherapy significantly increased survival of mouse models of pancreatic cancers without obvious toxicity. The knowledge gained from this study has the potential to significantly improve treatment of pancreatic cancers.

Professor **Tatiana Kisseleva**'s lab published an exciting new finding in the prestigious journal *Proceedings of the National Academy of Sciences*. In this report, the researchers demonstrated that mesothelin expression is linked to a variety of fibrosis conditions involving the liver, lung, and kidneys. In addition, they demonstrated that immunotoxins directed against human mesothelin led to a reduction in liver fibrosis in mouse models. The work will lead to the development of future therapies for treatment of liver, lung and kidney fibrosis.



Yuan Chen, PhD, and members of her laboratory published a study in the prestigious journal *Cancer Research*. In this study, the researchers discovered a link between a cellular mechanism known as small ubiquitin-like modification (SUMOylation) and cancer metastasis. Elevated expression of a gene known as EZH2 results in the silencing of genes that suppress tumor formation and metastasis. They showed that inhibition of SUMOylation resulted in reduced EZH2 mRNA and protein levels and increased expression of genes that suppress epithelial-mesenchymal transition and metastasis. Their findings suggest that inhibition of SUMOylation may serve as a potential strategy to address EZH2 overexpression and improve current cancer therapeutic approaches.

FUNDED RESEARCH

PRINCIPAL INVESTIGATOR	RESEARCH TITLE	FUNDING SOURCE
Hurtadodemendoza, Tatiana	Targeting Neoantigens to Pancreatic Tumors to Enable Immunotherapy	Foundation For A Better World, Inc.
Chen, Yuan	Sumo Modification and Cancer Therapy	National Cancer Institute
Chalasanani, Sreekanth (Shrek) and Friend, James	Sonogenetic Control of Neurons in a Large Volume of the Rodent Brain	National Institutes Of Health, Brain Initiative
Ryan, Allen	Basic Mechanisms on Hearing Loss of Cochlear Origin	U.S. Department Of Veterans Affairs
Kisseleva, Tatiana	The Role of Portal Fibroblasts in Cholestatic Liver Fibrosis	National Institute of Diabetes, Digestive & Kidney Diseases
Friend, James and Peterson, Lonnie	Ventilator Project	Office Of Naval Research With Matching Grant From Kratos Security Solutions

HONORS/AWARDS

Ryan Allen

- » Elected as president-elect of the International Society for Otitis Media for 2021-2023, and will be president of the society in 2023-2025.

SELECTED PUBLICATIONS

1. Tilvawala Gopesh, Jessica H. Wen, David Santiago-Dieppa, Bernard Yan, J. Scott Pannell, Alexander Khalessi, Alexander Norbash, and James Friend. Soft robotic steerable micro-catheter for the endovascular treatment of cerebral disorders. *Science Robotics*, Accepted 26 July 2021.
2. An Huang, William Connacher, Mark Stambaugh, Naiqing Zhang, Shuai Zhang, Jiyang Mei, Aditi Jain, Sravya Alluri, Vincent Wingching Leung, Anushi Rajapaksa, and James Friend. Practical microcircuits for handheld acoustofluidics. *Lab on a Chip*, 21(7):1352-1363, 2021.
3. Takumi Inui, Jiyang Mei, Chikahiro Imashiro, Yuta Kurashina, James Friend, and Kenjiro Takemura. Focused surface acoustic wave locally removes cells from culture surface. *Lab on a Chip*, 21(7):1299-1306, 2021.
4. Jeremy Orosco and James Friend. Unraveling the complex dynamics of acoustofluidics. *arXiv*, 172(1-18)2021.
5. Jeremy Orosco and James Friend. Unveiling the burgers-riccati physics of fast acoustic streaming. *arXiv*, 169(1-6)2021.
6. Arik Singh, Naiqing Zhang, and James Friend. An investigation of maximum particle velocity as a universal invariant --- defined by a statistical measure of failure or plastic energy loss for acoustofluidic applications. *Journal of the Acoustical Society of America*, Accepted 13 July 2021/2021.
7. Gopesh Tilvawala, Alex Grant, Jessica H. Wen, Teresa H. Wen, Ernesto Criado-Hidalgo, William J. Connacher,

James Friend

- » UC San Diego. Distinguished teaching award, 2021.
- » IOP Publishing: Biofabrication. Outstanding reviewer award, 2020.
- » Royal Society of Chemistry. Highly cited author: top 5% of highly cited authors with RSC journals, 2020.

- James R. Friend, and Timothy Morris. Vacuum exhausted isolation locker (VEIL) to reduce inpatient droplet/aerosol transmission during COVID-19 pandemic. *Infection Control & Hospital Epidemiology*, page 1-10, 2021.
8. Naiqing Zhang, Amihai Horesh, Ofer Manor, and James Friend. Powerful acoustogeometric streaming from dynamic geometric nonlinearity. *Physical Review Letters*, 126(164502):1-5, 2021.
 9. Naiqing Zhang, Amihai Horesh, and James Friend. Manipulation and mixing of 200 femtoliter droplets in nanofluidic channels using mhz-order surface acoustic waves. *Advanced Science*, (Accepted 12 March 2021)2021.
 10. Naiqing Zhang, Juan P. Zuniga-Hertz, Elizabeth Yan Zhang, Tilvawala Gopesh, Mckenzie J. Fannon, Jiaying Wang, Yue Wen, Hemal H. Patel, and James Friend. Microliter ultrafast centrifuge platform for size-based particle and cell separation and extraction using novel omnidirectional spiral surface acoustic waves. *Lab on a Chip*, 21:904-915, 2021.
 11. Christopher P. Ashdown, Scott C. Johns, Edward Aminov, Michael Unanian, William Connacher, James Friend, and Mark M. Fuster. Pulsed low-frequency magnetic fields induce tumor membrane disruption and altered cell viability. *Biophysical Journal*, 118(7):1552 - 1563, 2020.
 12. William Connacher, Jeremy Orosco, and James Friend. Droplet ejection at controlled angles via acoustofluidic jetting. *Physical Review Letters*, 125(18)2020.
 13. Alexander M Girgis, Merna N Aziz, Tilvawala C Gopesh,

FACULTY



Chen, Yuan, Ph. D

CHIEF OF DIVISION

Yuan Chen, PhD

PROFESSORS OF SURGERY

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Brian P. Eliceiri, PhD

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Tatiana Kisseleva, MD

PROFESSOR OF MECHANICAL AND AEROSPACE ENGINEERING

James Friend, PhD

ASSISTANT PROFESSOR OF MECHANICAL AND AEROSPACE ENGINEERING

Tania Morimoto, PhD

James Friend, Alex M Grant, Jeffrey A Sandubrae, and Dalia A Banks. Novel coronavirus disease 2019 (covid-19) aerosolization box: design modifications for patient safety. *Journal of Cardiothoracic and Vascular Anesthesia*, 2020.

14. Tilvawala Gopesh and James Friend. Facile analytical extraction of the hyperelastic constants for the two-parameter mooney-rivlin model from experiments on soft polymers. *Soft Robotics*, Online 30 July2020.
15. An Huang, Haodong Liu, Ofer Manor, Ping Liu, and James Friend. Enabling rapid charging lithium metal batteries via surface acoustic wave driven electrolyte flow. *Advanced Materials*, 32:1907516, 2020.
16. Jiyang Mei, Naiqing Zhang, and James Friend. Fabrication of surface acoustic wave devices on lithium niobate. *Journal of Visualized Experiments*, (160):e61013, 2020.
17. Jiyang Mei and James Friend. A review: controlling the propagation of surface acoustic waves via waveguides for potential use in acoustofluidics. *Bulletin of the Japanese Society of Mechanical Engineers*, 7(1):1-25, 2020.
18. Lonnie G Petersen, James Friend, and Sidney Merritt. Single ventilator for multiple patients during COVID19 surge: matching and balancing patients. *Critical Care*, 24(357):1-3, 2020.
19. Alex Phan, Phuong Truong, Christoph Schade, Aditya Vasan, James Friend, and Frank E. Talke. Investigation of long term drift of an intraocular pressure sensor. *Journal of Microsystem Technologies*, Accepted 23 November 2020.
20. Gopesh Tilvawala, Andrew Camp, Michael Unanian, James Friend, and Robert Weinreb. Rapid and accurate intraocular pressure sensing device for patients with artificial corneas. *Translational Vision Science and Technology*, 9(28):1-9, 2020.
21. Aditya Vasan, Reiley Weekes, William Connacher, Jeremy Sieker, Mark Stambaugh, Preetham Suresh, Daniel E. Lee, William Mazzei, Eric Schlaepfer, Theodore Vallejos, Johan Petersen, Sidney Merritt, Lonnie Petersen, and James Friend. MADVent: A low-cost ventilator for patients with COVID-19. *Medical Devices and Sensors*, 3(e10106):1-14, 2020.
22. Aditya Vasan, William Connacher, and James Friend. Fabrication and methods of characterization of thickness mode piezoelectric devices for atomization and acoustofluidics. *Journal of Visualized Experiments*, 162(e61015)2020.
23. Jiaying Wang, Florian Allein, Nicholas Boechler, James Friend, and Oscar Vazquez Mena. Design and fabrication of acoustic unit cells for negative refractive index metamaterials for near-megahertz enhanced acoustic transmission in future biomedical ultrasound applications. *Physical Review Applied*, 15(024025):1-12, 2020.
24. Jiaying Wang, Jiyang Mei, James Friend, and Oscar Vazquez Mena. Frequency and damping effect of suspended silicon nitride membranes fully immersed in water near the megahertz range. *Journal of Micromechanics and Microengineering*, Accepted 23 September2020.
25. Naiqing Zhang, Yue Wen, and James Friend. Mhz-order surface acoustic wave thruster for underwater silent propulsion. *Micromachines*, 11(4)2020.
26. Naiqing Zhang, Jiyang Mei, Tilvawala Gopesh, and James Friend. Optimized, omnidirectional surface acoustic wave source: 152 degree y-rotated cut of lithium niobate for acoustofluidics. *{IEEE} Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, 67(10):2176-2186, 2020.
27. Naiqing Zhang and James Friend. Fabrication of nanoheight channels incorporating surface acoustic wave actuation via lithium niobate for acoustic nanofluidics. *Journal of Visualized Experiments*, 156:e60648, 2020.

DIVISION OF TRAUMA

The Division of Trauma, Surgical Critical Care, Burns, and Acute Care Surgery has a mission to provide world class care 24/7 to acutely injured or ill surgical patients. It does this with an ACS verified level one trauma center and an American Burn Association verified Regional Burn Center at the Hillcrest campus of UC San Diego.

UC San Diego opened the first regional level one trauma center in 1976 and also operates the only regional burn center for San Diego and Imperial Counties. Our mission is to save our patients' lives and health and return them safely to their families.

During this year, the Division of Trauma, Surgical Critical Care, Burns, and Acute Care Surgery continued to expand in its roles in the UC San Diego Health system under Division Chief **Jay Doucet, MD, FRCSC, FACS**. The Division successfully graduated its first class of American Association for the Surgery of Trauma (AAST) Acute Care Surgery fellows and continued to operate a very popular Accreditation Council for Graduate Medical Education (ACGME) verified Surgical Critical Care fellowship. Despite the pandemic, the division remained very busy with a significant increase in Trauma, Burn, Emergency General Surgery and ICU patient volumes.

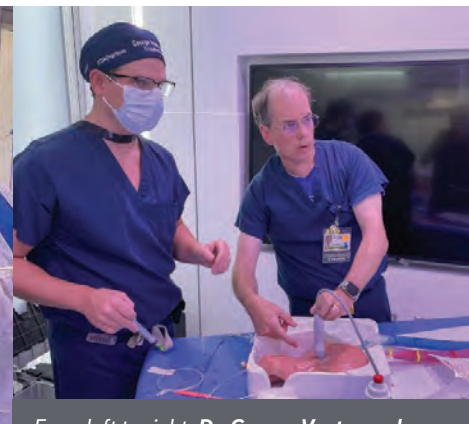
ACCOMPLISHMENTS

- » **Allyson Berndtson, MD, FACS**, started the UCSD Multidisciplinary Global Health Residency Track as the lead for Surgery, which includes General Surgery, Plastics and ENT. Other participants in the track are OBGYN, Emergency Medicine, and Internal Medicine.
- » Graduated our first class of American Association for the Surgery of Trauma Acute Care Surgery (ACS) fellows. The ACS Fellowship is a two-year program with the first year accredited by the ACGME as a Surgical Critical Care fellowship and the second year certified by the AAST. It provides a broader surgical experience, including more emergency general surgery and experiences in Vascular and Thoracic surgery.
- » Abstract Pediatric Scald Burns: Using Geographic Information Systems to Identify High Risk Communities, was accepted for an Oral Presentation at the 53rd Annual American Burn Association Meeting held virtually, April 7-9, 2021. Authors: Lee, JG, MD, Higginson, S MD, Strait, Eli, BSN, RN, CCRN-K, Santorelli Jarrett E., MD, Smith, Alan M PhD, MPH, Costantini, Todd W MD, Doucet, Jay J MD, Godat, Laura N, MD.
- » Virtual abstracts were presented at the American Association for the Surgery of Trauma (Trauma registries, bicycle injuries and GIS), the World Trauma Congress (Ultrasound Education in Trauma), and the Western Trauma Association (Youth Violence Prevention).
- » **Jay Doucet, MD, FRCSC, FACS**, was the American College of Surgeon's 2020 Advocate of the Year. This ACS program, initiated in 2018, was created to recognize strong surgeon advocates who help advance important health policy priorities, establish and maintain relationships with legislators and participate in other advocacy-related activities. Dr. Doucet has led by example, serving as an ACS Governor and on the Committee on Trauma, and through his support of the College's political efforts via SurgeonsPAC.



Basic Endovascular Surgery for Trauma (BEST) Course in the Hybrid OR of the Center for Future of Surgery

Despite the pandemic, the Division continued its usual educational activities and was able to host courses in Stop the Bleed, Advanced Trauma Life Support (ATLS), ATLS Instructor Course, Advanced Trauma Operative Management (ATOM), Advanced Surgical Skills for Exposure in Trauma (ASSET), Basic Endovascular Surgery for Trauma (BEST), Disaster Management and Emergency Preparedness (DMEP) and Advanced Burn Life Support (ABLS). The Division was awarded new basic and clinical science grants in trauma, acute illness, and burns.



From left to right: Dr. George Ventro and Dr. Jay Doucet at the Basic Endovascular Surgery for Trauma (BEST) Course in the Hybrid OR



Dr. Allison Berndtson teaches an international Trauma Evaluation and Management (TEAM) course to medical students in Saudi Arabia.

NEW RESEARCH AWARDS/GRANTS

- 2020/09/01-2021/08/31; Medical Technology Enterprise Consortium; Title: PROspective Observational Vascular Injury Treatment (PROOVIT) 2. The goal of this study is to utilize patients entered into the PROOVIT database to better define long-term outcomes for patients that require extremity arterial reconstruction. Costantini, Todd (PI).
- 2020/09/20-2022/08/31; Pt-Centered Outcomes Research Institute/Coalition for National Trauma Research; Implementing Best-Practice, Patient-Centered Venous Thromboembolism (VTE) Prevention in Trauma Centers. CLOTT – PCORI 3 . The goal of this study is to examine data on missed and refused doses of VTE prophylaxis in a multicenter study and evaluate the impact of nursing and patient education on VTE outcomes in trauma patients at high-risk for VTE events. Costantini, Todd (Consortium PI)
- 2020/09/01-2022/09/29; National Heart, Lung and Blood Institute / National Institutes of Health; Anti-thrombotics for Adults Hospitalized with COVID-19 (ACTIV-4 ACUTE). The goal of this study is to compare the effectiveness of antithrombotic strategies for the prevention of adverse outcomes in COVID-19 positive inpatients. The goal is to determine the most effective antithrombotic strategies for organ support and reducing death, and to assess the safety of those antithrombotic strategies. Neal, Matthew (PI) Costantini, Todd (Consortium PI)
- 2021/06/22-2022/05/31; National Institutes of Health (NIH), NHLBI; 2021 Consensus Conference to Implement Optimal VTE Prophylaxis in Trauma; Costantini, Todd (PI); The goal of this study is to gather leaders in the field of trauma and VTE to develop consensus guidelines and plan future trials to better define strategies for optimal VTE prophylaxis in trauma.
- 2020/08/01-2022/01/31; California Breast Cancer Research Program; Pharmacological targeting of cholinergic receptors as a novel breast cancer immunotherapy; Eliceiri, Brian (PI)
- 2020/07/01-2024/06/30; NIH NIGMS; Tissue repair, extracellular vesicular biogenesis, and the control of immune responses; Eliceiri, Brian (PI)
- **Brian Eliceiri, PhD**, receives NIH R01 Grant: Dr Elicieri gained funding for an NIH R01 grant that he and colleagues recently submitted on the topic of tissue repair, extracellular vesicular biogenesis, and the control of immune responses (1R01GM140137-01). In this proposal, Dr. Eliceiri, along with collaborators including **Marek Dobke, MD, PhD**, will focus on the ability of cell-secreted small extracellular vesicles to regulate immune cells as a means of accelerating the resolution of inflammation and promoting skin repair

SELECTED PUBLICATIONS

1. DuBose JJ, Burlew CC, Joseph B, Keville M, Harfouche M, Morrison J, Fox CJ, Mooney J, O'Toole R, Slobogean G, Marchand LS, Demetriades D, Werner NL, Benjamin E, Costantini T. Pelvic Fracture-Related Hypotension: A Review of Contemporary Adjuncts for Hemorrhage Control. *J Trauma Acute Care Surg.* 2021 Jul 6. doi: 10.1097/TA.0000000000003331. Epub ahead of print. PMID: 34238857.
2. Zhong C, Li P, Argade S, Liu L, Chilla' A, Liang W, Xin H, Eliceiri B, Choudhury B, Ferrara N. Inhibition of protein glycosylation is a novel pro-angiogenic strategy that acts via activation of stress pathways. *Nat Commun.* 2020 Dec 10;11(1):6330. doi: 10.1038/s41467-020-20108-0. PMID: 33303737; PMCID: PMC7730427.
3. Weaver JL. The Kinetics of Intestinal Permeability in a Mouse Model of Traumatic Brain Injury. *Curr Protoc Mouse Biol.* 2020 Dec;10(4):e86. doi: 10.1002/cpmo.86. PMID: 33264493.
4. Berndtson AE. Increasing Globalization and the Movement of Antimicrobial Resistance between Countries. *Surg Infect (Larchmt).* 2020 Sep;21(7):579-585. doi: 10.1089/sur.2020.145. Epub 2020 May 20. PMID: 32434446.
5. Godat LN, Costantini TW, Doucet JJ. Emergency General Surgery and the Gallbladder: The Affordable Care Act's Impact on Practice Patterns. *J Surg Res.* 2021 Jan;257:356-362. doi: 10.1016/j.jss.2020.08.013. Epub 2020 Sep 3. PMID: 32892131.
6. Casas A Jr, Hawisher D, De Guzman CB, Bickler SW, De Maio A, Cauvi DM. Regulation of the Nfkbiz Gene and Its Protein Product Ikb in Animal Models of Sepsis and Endotoxic Shock. *Infect Immun.* 2021 Mar 17;89(4):e00674-20. doi: 10.1128/IAI.00674-20. PMID: 33431705; PMCID: PMC8090956.
7. De Maio A, Hightower LE. Heat shock proteins and the biogenesis of cellular membranes. *Cell Stress Chaperones.* 2021 Jan;26(1):15-18. doi: 10.1007/s12192-020-01173-2. Epub 2020 Oct 20. PMID: 33083932; PMCID: PMC7736428.
8. Finneran JJ, Swisher MW, Gabriel RA, Fiallo A, Hamilton JR, Lee JG, Ilfeld BM. Ultrasound-Guided Lateral Femoral Cutaneous Nerve Cryoneurolysis for Analgesia in Patients With Burns. *J Burn Care Res.* 2020 Jan 30;41(1):224-227. doi: 10.1093/jbcr/irz192. PMID: 31714578.
9. Doucet JJ, Godat LN, Kobayashi L, Berndtson AE, Liepert AE, Raschke E, Denny JW, Weaver J, Smith A, Costantini T. Enhancing trauma registries by integrating traffic records and geospatial analysis to improve bicyclist safety. *J Trauma Acute Care Surg.* 2021 Apr 1;90(4):631-640. doi: 10.1097/TA.0000000000003075. PMID: 33443983.



Jay Doucet, MD

CHIEF OF DIVISION

Jay Doucet, MD, MSc,
FRCS, FACS

PROFESSORS OF SURGERY

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Brian Eliceiri, PhD
Jeanne Lee, MD, FACS
Bruce Potenza, MD

ASSOCIATE PROFESSORS OF SURGERY

Todd Costantini, MD, FACS
Leslie Kobayashi, MD, FACS
Amy Liepert, MD, FACS

ASSISTANT PROFESSORS OF SURGERY

Allison Berndtson, MD, FACS
Laura Godat, MD, FACS
Jessica Weaver, MD, FACS

PROJECT SCIENTIST

David Cauvi, PhD

CLINICAL INSTRUCTOR

Jarrett Santorelli, MD



From left to right: **Fellow Graduation: Dr Laura Godat, SCC Program Director, Dr Jarrett Santorelli, ACS Fellow, MAJ Eric Raschke, ACS Fellow, Dr Franchesca Hwang, SCC Fellow, Dr Laurie Adams, SCC Fellow, Dr George Ventro, SCC Fellow Dr Amy Liepert, ACS Program Director.**



Dr. Laura Godat and burn center staff show how they mask up for safety!



From left to right: **Surgical Critical Care Program Director Laura Godat, MD and Surgical Critical Care Fellows, Laurie Adams, MD, Franchesca Hwang, MD, and George Ventro, MD.**

DIVISION OF VASCULAR AND ENDOVASCULAR SURGERY

The Division of Vascular and Endovascular Surgery at UC San Diego is committed to providing the highest quality surgical and endovascular comprehensive care for the entire spectrum of peripheral arterial, carotid, aneurysmal, and venous diseases. This year, our out-patient endovascular center was established, and the inaugural 0/5 UCSD vascular surgery residency initiated training.

NEW OUTPATIENT ENDOVASCULAR CENTER

The Division of Vascular & Endovascular Surgery is proud to announce the opening of the first UC San Diego Office-Based Lab (OBL) at Chancellor Park in La Jolla, opened March 2021. Our highly trained specialists, led by Chief Medical Director **Mahmoud Malas, MD, MHS, FACS**, offer leading-edge diagnostic and treatment services, taking an interdisciplinary approach to the medical and minimally invasive endovascular management of a wide spectrum of vascular diseases. Conditions treated in the new center include peripheral arterial disease, critical limb ischemia, venous obstruction and insufficiency and dialysis access maintenance. Patients are treated with minimally invasive endovascular approaches including diagnostic angiogram, venogram and fistulagram, angioplasty,



From the Left: Opening ceremony of the new center, Endovascular Suite, Endovenous Room

atherectomy and stent placement, fistula and graft declotting, endovenous ablation, mechanical chemical vein ablation, and injections. The OBL offers a more individualized, patient-centered approach to quality care at a fraction of the cost to patients, payors, and the health system. Vascular & endovascular procedures have shifted away from inpatient operating room toward outpatient setting

with support from Centers for Medicare and Medicaid Services (CMS). This switch has been backed by higher patient experience results, faster access to care, and better clinical outcomes. The team is in the process of obtaining Accreditation Association for Ambulatory Health Care (AAAHC) certification, which will be the first AAAHC certification for UCSD Health.



VASCULAR SURGERY HILLCREST

The UCSD Vascular and endovascular surgery service line at our Hillcrest campus continues to expand and grow. We now have two full-time faculty and a full-time nurse practitioner to continue to provide and expand the highest quality of care to our patients. Not only is there tremendous growth in the clinical volume at Hillcrest, but resident education has vastly improved. In fact, **Omar Al-Nouri, DO, RPVI**, was awarded the prestigious Chief Resident Operative Teaching award for the 2020-2021 academic year. This award is given yearly to one faculty member in the entire Department of Surgery at UCSD and is a testament to the dedication to teaching from Dr. Al-Nouri and our entire vascular team. Additionally, plans have been finalized and submitted for our new Hillcrest outpatient pavilion slated to break ground in late 2021. This state-of-the-art outpatient complex will include an in-office angiography suite, two procedure rooms to perform venous cases, 8 exam rooms and 3 vascular lab rooms.

EL CENTRO REGIONAL MEDICAL CENTER

As part of the mission to provide quality healthcare for all individuals and the mission to provide services to underserved communities, we have expanded our vascular surgery services to the Imperial Valley. Currently, we have vascular surgery coverage for two days every week at El Centro Regional Medical Center (ECRMC). ECRMC is an acute medical center located in El Centro, the largest city in Imperial County. This county has been designated as a medically underserved area. There is a high prevalence of diabetes, hypertension, kidney disease, and obesity. These are all risk factors for vascular disease, which has been largely unrecognized in the valley. **Luis Cajas, MD, MPH**, is the first board certified vascular surgeon to serve this area. His efforts have resulted in the expansion of ultrasound services provided to the community with improvement and development of protocols for vein mapping, dialysis access evaluation, and lower extremity arterial and venous duplex studies. The services provided locally include dialysis access creation and maintenance, peripheral arterial diagnostic angiogram, balloon angioplasty and stenting for limb salvage, venous ablation, and amputations/wound care. More complex issues can be triaged locally and treated at UCSD with patient-centered convenient follow up at ECRMC.



EDUCATIONAL PROGRAMS

The Division of Vascular and Endovascular Surgery at UCSD is very proud to have ACGME approval for our new integrated vascular residency. In our inaugural year, we were delighted to receive over 120 applications for our single residency position. We are excited to have John Hallsten, MD from Loyola University Stritch School of Medicine be our first vascular resident. This new training paradigm will complement our existing traditional vascular surgery fellowship to create a comprehensive training program for our vascular surgery trainees. We are also proud of our fellow **Dr. Rebecca Marmor**, who is graduating this year, for accepting a faculty position at Johns Hopkins. This marks a transformation in the quality of training at UCSD and a shift in the job prospect of graduating vascular fellows to high quality academic positions.

CENTER FOR LEARNING AND EXCELLENCE IN VASCULAR & ENDOVASCULAR RESEARCH (CLEVER)

The vascular and endovascular research team continues to produce excellent research to address various pressing research questions. Through exceptional teamwork we produced 39 peer-reviewed publications in high impact journals such as *JAMA*, *The Lancet*, *Annals of Surgery*, *Journal of Vascular Surgery* and *Annals of Vascular Surgery*. We had 116 accepted abstracts and presentations in regional, national and international meetings including: Veith Symposium, European Society of Vascular Surgery, Society of Vascular Surgery, Western Vascular Society, Eastern Vascular Society and American College of Surgeons.

The first systematic review and meta-analysis on Acute Arterial and Venous Thrombosis and Pulmonary Embolism in Covid-19 and the associated mortality risk was done by our team and published by *The Lancet* in November 2020. This critical paper is playing a leading role in guiding policies and decision-making, and has served as a key reference for past, current and ongoing Covid research, with over 110 citations so far.

The largest study to date demonstrating comparable stroke or death risk between transcarotid carotid artery revascularization, a novel minimally approach to carotid

stenting in high risk patients, and the current gold standard for Carotid Endarterectomy was also published by the high impact journal *Annals of Surgery*.

We also expanded our clinical trials portfolio by bringing in four new clinical trials this year to reach a total of six trials in the span of two years:

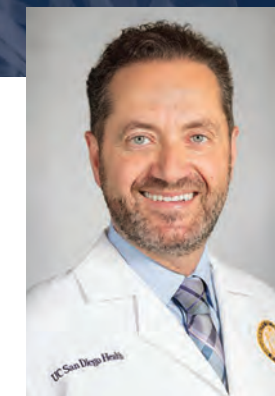
- » The Humacyte V005 study utilizes a human tissue-engineered vessel as an alternative to a patient's vein or a prosthetic graft for vascular reconstruction in limb-threatening vascular trauma.
- » The TRIOMPHE study aims to demonstrate that NEXUS is an effective tool for treating Aortic Arch pathologies including Chronic dissections, aneurysms, penetrating ulcers and intramural hematomas.
- » The Best-Registry's objective is to assess real-world therapeutic strategies, clinical outcomes and costs associated with critical limb ischemia.
- » The TREO post approval study aims to report real-world outcomes of the TREO Abdominal Stent Graft system in the endovascular treatment of infrarenal abdominal aortic aneurysm.

FUNDED RESEARCH

PRINCIPAL INVESTIGATOR	RESEARCH TITLE	FUNDING SOURCE
Malas, Mahmoud, MD, MHS	Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial (CREST-2)	National Institute of Neurological Disorders and Stroke (NINDS)
Malas, Mahmoud, MD, MHS	A Phase 3 Study to Compare the Efficacy and Safety of Humacyte's Human Acellular Vessel with that of an Autologous Arteriovenous Fistula in Subjects with End-Stage Renal Disease	Humacyte, Inc.
Malas, Mahmoud, MD, MHS	A Phase 2 Study for the Evaluation of Safety and Efficacy of Humacyte's Human Acellular Vessel for Vascular Replacement or Reconstruction in Patients with Life or Limb-threatening Vascular Trauma	Humacyte, Inc.
Lane, John, MD	A Multi-arm, Multi-Center, Non-Randomized, Prospective, Clinical Study to Evaluate the Safety and Effectiveness of the NEXUSTM Aortic Arch Stent Graft System in Treating Thoracic Aortic Lesions Involving the Aortic Arch: TRIOMPHE Study	Endospan, ltd.
Malas, Mahmoud, MD, MHS	Post-Approval Study of the TREO Abdominal Stent-Graft System in Patients with Infrarenal Abdominal Aortic and Aorto-iliac Aneurysms	Terumo aortic, Inc.
Barleben, Andrew, MD, MPH	BEST-Registry	National Heart, Lung, and Blood Institute (NHLBI)

SELECTED PUBLICATIONS

- Zarkowsky DS, Nejm B, Hubara I, Hicks CW, Goodney PP, Malas MB. Deep Learning and Multivariable Models Select EVAR Patients for Short-Stay Discharge. *Vasc Endovascular Surg.* 2021 Jan;55(1):18-25. doi: 10.1177/1538574420954299. Epub 2020 Sep 10. PMID: 32909908; PMCID: PMC7792630.
- Malas MB, Dakour-Aridi H, Kashyap VS, Eldrup-Jorgensen J, Wang GJ, Motaganahalli RL, Cronenwett JL, Schermerhorn ML. TransCarotid Revascularization with Dynamic Flow reversal versus Carotid Endarterectomy in the Vascular Quality Initiative Surveillance Project. *Ann Surg.* 2020 Sep 15. doi: 10.1097/SLA.0000000000004496. Epub ahead of print. PMID: 32941280.
- Al-Nouri O, Locham S, Mannava K, Malas MB. Short Duration Catheter-directed Thrombolysis for Acute Pulmonary Embolism Rapidly Improves Acute Cardiac Function. *Ann Vasc Surg.* 2021 Apr;72:373-382. doi: 10.1016/j.avsg.2020.09.064. Epub 2020 Nov 21. PMID: 33227469.
- Naazie IN, Magee GA, Mathlouthi A, Elsayed N, Dakour-Aridi H, Malas MB. Primary mechanism of stroke reduction in transcarotid artery revascularization is dynamic flow reversal. *J Vasc Surg.* 2021 Jul;74(1):187-194. doi: 10.1016/j.jvs.2020.10.082. Epub 2020 Dec 1. PMID: 33276041.
- Mathlouthi A, Guajardo I, Al-Nouri O, Malas M, Barleben A. Prophylactic Aneurysm Embolization during EVAR Is Safe, Improves Sac Regression and Decreases the Incidence of Type II Endoleak. *Ann Vasc Surg.* 2021 Jul;74:36-41. doi: 10.1016/j.avsg.2020.12.060. Epub 2021 Feb 4. PMID: 33549781.
- Malas MB, Naazie IN, Elsayed N, Mathlouthi A, Marmor R, Clary B. Thromboembolism risk of COVID-19 is high and associated with a higher risk of mortality: A systematic review and meta-analysis. *EclinicalMedicine.* 2020 Dec;29:100639. doi: 10.1016/j.eclinm.2020.100639. Epub 2020 Nov 20. PMID: 33251499; PMCID: PMC7679115.
- Yin K, Alhajri N, Rizwan M, Locham S, Dakour-Airidi H, Malas MB. Black Patients Have Higher Burden of Comorbidities but Lower Risk of 30-Day and One-Year Mortality After Thoracic Endovascular Aortic Repair. *J Vasc Surg.* Epub 2020 Dec 02. DOI:https://doi.org/10.1016/j.jvs.2020.10.087
- Cui CL, Dakour-Aridi H, Eldrup-Jorgensen J, Schermerhorn ML, Siracuse JJ, Malas MB. Effects of timing on in-hospital and one-year outcomes after transcarotid artery revascularization. *J Vasc Surg.* 2021 May;73(5):1649-1657.e1. doi: 10.1016/j.jvs.2020.08.148. Epub 2020 Oct 8. PMID: 33038481; PMCID: PMC8118084.
- Dakour-Aridi H, Elsayed N, Malas M. Outcomes of Carotid Revascularization in Patients with Contralateral Carotid Artery Occlusion. *J Am Coll Surg.* 2021 May;232(5):699-708. e1. doi: 10.1016/j.jamcollsurg.2020.12.063. Epub 2021 Feb 15. PMID: 33601006.



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GENERAL SURGERY GRADUATING RESIDENTS FY21

- DeLong, Jonathan
- Hepatobiliary Surgery Fellowship
Stanford University
- Flynn, Sean
- Colorectal Surgery Fellowship
University of Southern California
- Janssen, Claire
- 2021 Locum Tenants Traveling
Surgeon/General Surgery Practice
Multiple Locations (U.S.A.)
- 2022 Vascular Surgery Fellowship
UC San Diego
- Roderick, Elizabeth
- Trauma Critical Care Fellowship
University of Connecticut
- Williams, Elliot
- Trauma Critical Care Fellowship
University of Southern California
- Wu, Samantha
- Minimally Invasive Surgery Fellowship
UC San Diego

VASCULAR SURGERY GRADUATING FELLOW FY21

- Rebecca Marmor
- Assistant Professor of Surgery,
Vascular Surgery
Johns Hopkins Hospital

MINIMALLY INVASIVE SURGERY GRADUATING FELLOW FY21

- Gene Yang
- Assistant Professor of Surgery,
Minimally Invasive Surgery and
GI Endoscopy University of Buffalo
- Alice Race
- Assistant Professor of Surgery,
Abdominal Wall Reconstruction
West Virginia University

GENERAL SURGERY RESIDENCY FY22

- PGY1/INTERNS**
Antkowiak, Mark
Almogati, Joud (RAD-PRELIM)
Alshubrami, Dalal (RAD-PRELIM)
Bensard, Claire
Courelli, Asimina
Hyman, Simone
Oviedo, Parisa
Spurzem, Graham
Zhu, Alexander

- PGY2**
Alexander, Wyeth
Chung, Sophie
Cox, Kristen
Johnston, William
Nguyen-Ta, Kim
Perez, Sean
Perkins, Louis
Veranyan, Narek (PRELIM)

- PGY3**
Blitzer, Rachel
Covarrubias, Karina
De la Torre, Jorge
Douglas (Halasz), Sasha
Dumitru, Ana Maria
Guajardo, Isabella
Matson, Jared
Reeves, James Jeffrey

- PG4**
Hollandsworth, Hannah
Lake, Charissa
Lee, Arielle
Niemiec, Stephen
O'Keefe, Thomas
Taj, Raeda

- PGY5/CHIEF RESIDENTS**
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Lee, Katherine
Makris, Eleftherios
Moral, John "Alec"
Tirrell, Timothy
Tsai, Catherine
Zhao, Beiqun "Mark"

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- Fellow of Laryngology and Care
of Professional Voice, University Of
California San Francisco, Department
of Otolaryngology-Head and Neck
Surgery

- Andrey Finegersh
- Otolaryngology Residency Graduate
- Fellowship, Stanford for a Head and
Neck Surgery/Microvascular
Reconstruction

- Bharat Panuganti
- Otolaryngology Residency Graduate
- Fellowship at Massachusetts General
Hospital, Boston, MA, Center for
Laryngeal Surgery and Voice
Rehabilitation

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Surgery, The Ohio State University

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Huang, Estella
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Li, Kevin
Mou, Zonyang "Tom"
Patel, Rohini
Sharma, Ashwyn
Turner, Michael

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- Bendersky, Victoria (Duke)
Carroll, Danielle (NASA)
Jensen, Rachel (Stanford)
Meisner, Jay (Boston)

VASCULAR SURGERY FELLOWSHIP FY22

- Das Gupta, Jaideep (2nd Year)
Layman, Peter (1st year)

VASCULAR SURGERY INTEGRATED PROGRAM FY22

- PGY1**
Hallsten, John

MINIMALLY INVASIVE SURGERY FELLOWSHIP FY22

- Genz, Michael
Wu, Samantha

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UCSD Division of Trauma, Surgical
Critical Care, Burns and Acute
Care Surgery
- Francesca Hwang
- Clinical Assistant Professor, NYU
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- AAST Acute Care Surgery Fellow
UCSD Division of Trauma, Surgical
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Surgery

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- Trauma, Acute Care Surgeon
Madigan Army Medical Center,
Tacoma, Washington
- Jarrett Santorelli
- Assistant Professor of Clinical Surgery,
UCSD Division of Trauma, Surgical
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Surgery

GRATEFUL PATIENTS

Hanna and Mark Gleiberman Gift \$12 Million to UC San Diego's Head and Neck Cancer Center

"We believe that our support will help advance leading-edge research, education and care of people throughout San Diego County, as well as have an impact globally."

— Mark Gleiberman



Two years ago, San Diego native Hanna Gleiberman walked into her doctor's office with a sore in her mouth. She walked out with a diagnosis of an advanced, life-threatening form of tongue cancer. Soon, she would endure a 13-hour surgery to remove part of her tongue and jaw, subsequent complex reconstruction using bone from her leg and tissue from her arm, followed by radiation and chemotherapy. She was told she would have speech and swallowing difficulties for the rest of her life.

"What she was facing was daunting," said Hanna's husband, Mark Gleiberman, founder and CEO of San Diego-based real estate investment firm MG Properties Group. "We were so lucky to have one of the world's top head and neck cancer centers right here in our own backyard to help Hanna make an amazing recovery."

Treatment of head and neck cancers is highly complex. It requires teams of specialists who provide life-saving treatments tailored to preserve or recover the ability to speak, taste and swallow, as well as prevent or reduce disfigurement.

"It was extremely scary to be told I would never sound the same again and no guarantees were given on how well I would swallow and speak," said Hanna Gleiberman.

For patients like Hanna Gleiberman, recovery involves

working through multiple types of treatments to improve and optimize speech and swallowing. She credits her healing and recovery, not just to the skill of individual practitioners, but also to the coordination of complex therapies and the team-based care led by **Joseph A. Califano III, MD**, director of the newly named Hanna and Mark Gleiberman Head and Neck Cancer Center at UC San Diego Health.

Hanna and Mark Gleiberman recognize that this team-based integration of clinical care, research and supportive care makes Moores Cancer Center at UC San Diego Health one of the best in the country. It is also San Diego's only National Cancer Institute-designated Comprehensive Cancer Center. This collective expertise and Califano's knowledge, experience, accessibility and desire to help motivated Hanna and Mark to make an extraordinary gift.

"Partners such as Hanna and Mark are central to what makes Moores Cancer Center at UC San Diego Health the quality place it is for cancer research and care. I am so grateful for their gift and honored by their partnership," said Dr. Scott M. Lippman, Chugai Pharmaceutical Chair and director of Moores Cancer Center.

One of the strongest indicators of a program's success is the number of people who entrust it with their care. With more than 90 staff dedicated to head and neck cancer treatment and research, the Gleiberman Head and Neck Cancer Center cared for more than 13,000 patients in 2020, nearly double the number of patients just five years earlier.

In addition to providing unique personalized care to each patient, Moores Cancer Center continues to lead in advancing the understanding of cancer through seminal, groundbreaking research.

"While we have an incredible base in translational science, and leverage molecular and immunologic knowledge to treat patients and move discoveries into clinical trials, this gift will allow us to really focus on how to improve functional outcomes, quality of life and improve recovery after treatment," said Califano, physician-in-chief at Moores Cancer Center.

In 2021, head and neck cancer research at Moores Cancer Center received \$14 million in funding from the National Institutes of Health and \$40 million in future committed funding from foundations and private philanthropy.

The Gleiberman Head and Neck Cancer Center offers more than 20 active clinical trials including advanced therapies developed by UC San Diego Health physician-scientists. This complements an integrative, multidisciplinary treatment approach that features minimally invasive surgery, reconstruction and rehabilitation, proton and other forms of radiation therapy, chemotherapy, molecular targeted therapies and personalized immunotherapy.

"We have a responsibility to give back with the intention of leaving the world a better place."

— Hanna Gleiberman

"If I had this diagnosis 15 years ago, the prognosis would have been very different," said Hanna Gleiberman. "We have learned that research offers a chance for cures and funding can help make great strides towards new, less invasive and less toxic therapies."

Both Hanna and Mark Gleiberman have embraced philanthropic endeavors supporting UC San Diego and the San Diego community. Mark Gleiberman is a trustee of the UC San Diego Foundation Board and a founding board member of the UC San Diego Real Estate and Development program, and previously served as a member of the UC San Diego Athletic Board. Hanna Gleiberman serves on the board of trustees for the La Jolla Playhouse.

Together, the couple initiated and funded an innovative UC San Diego class on homelessness. The entire Gleiberman family is deeply committed to improving the lives of members of the San Diego community and are major supporters of numerous San Diego causes.

Hanna and Mark Gleiberman are confident their transformational gift will empower the team at the Gleiberman Head and Neck Cancer Center to advance medicine and improve treatments to affect change for patients.

"We believe that our support will help advance leading-edge research, education and care of people throughout San Diego County, as well as have an impact globally," said Mark Gleiberman.

For more information, visit <https://health.ucsd.edu/specialties/cancer/programs/head-neck/Pages/default.aspx>

Hanna and Mark Gleiberman's \$12 million gift will support many areas within the Gleiberman Head and Neck Cancer Center, including:

- » Supporting innovative clinical trials for head and neck cancer treatment
- » Investing in junior faculty by creating start-up and retention packages and funding pilot projects
- » Training the next generation of head and neck cancer experts by building and growing a fellowship program
- » Creating an endowed fund to provide seed support for research projects, equip physicians and physician-scientists with resources to develop life-changing tools and therapies, initiate clinical trials, pursue additional grant funds for head and neck cancer exploration and discovery, and provide matching funds to augment extramural grants
- » Enhancing patient experience through patient-centered, caregiver supported programs and care navigation services
- » Providing services not covered by health insurance to those who cannot afford them



The Gleiberman Head and Neck Cancer Center, led by its director, Joseph A. Califano III, M.D., cared for more than 13,000 patients in 2020 and has more than 20 active clinical trials including advanced therapies developed by UC San Diego Health physician-scientists.

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 Debra and Kenneth Wintory
 Lydia and Mark F. Wollman
 Stephanie Woo
 Sheila and Sean Wood
 Mary Woodling
 Amy Wray
 Robert Zampetti
 Derek Zimmer

*Deceased



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