

LEADING THE WAY IN THE
BATTLE AGAINST COVID-19

ISLET CELL TRANSPLANT STOPS
A YOUNG WOMAN'S PAIN

UCI Health

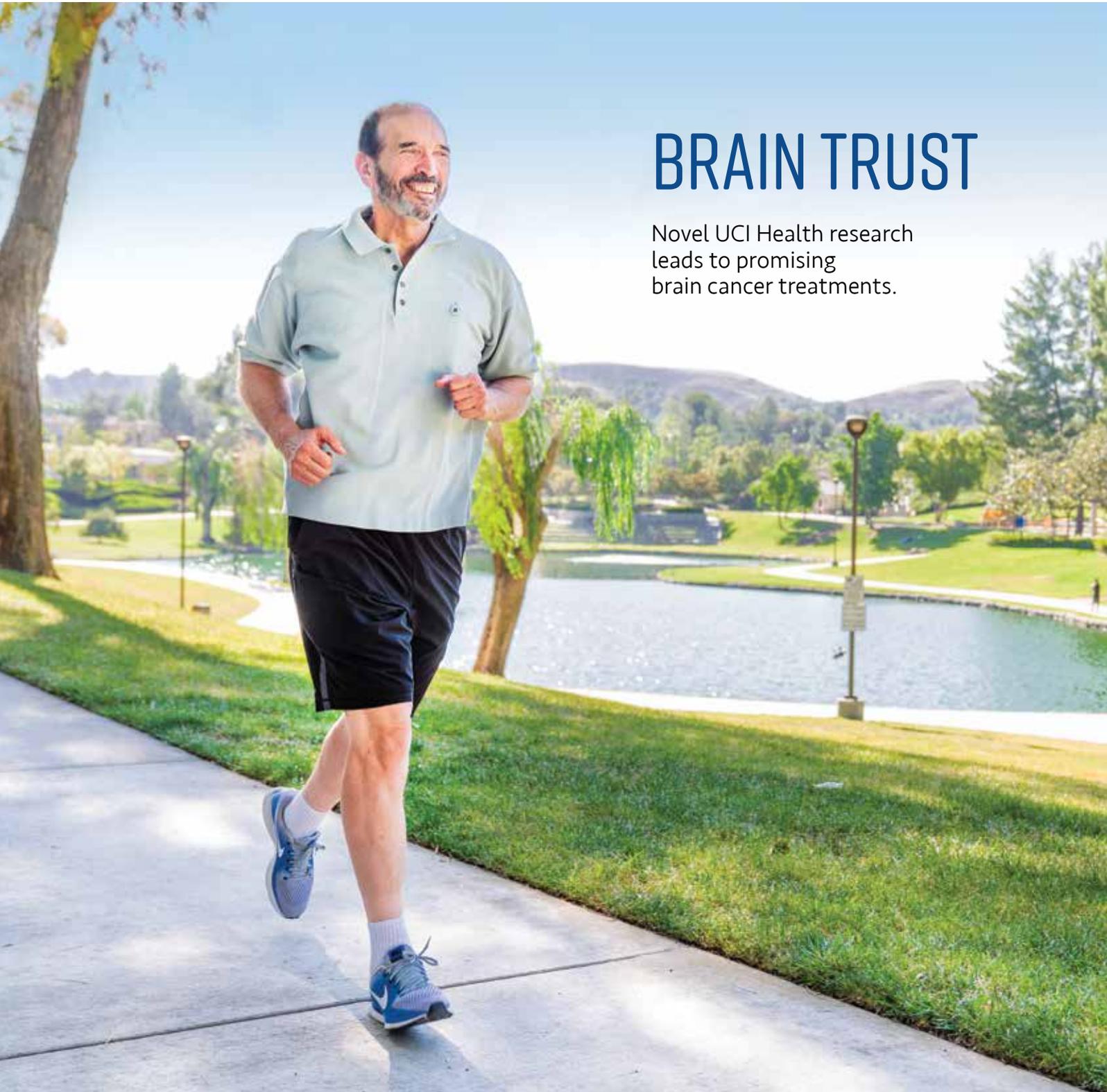
SUMMER 2020

live well

SMARTER HEALTHCARE FOR SOUTHERN CALIFORNIA

BRAIN TRUST

Novel UCI Health research
leads to promising
brain cancer treatments.



A PLACE LIKE NO OTHER



Like all of you, we saw news reports in January about an outbreak of a deadly respiratory virus in China. By February, a national bulletin regularly sent to hospitals began including warnings on the potential spread of the novel coronavirus in the United States. Some of the warnings were dire. But we in the UCI Health system did not panic.

Here's why: We were built for this. We've been preparing for a potential pandemic since early 2019, given concerns about contagions such as Ebola and MERS, for which there are no treatments. From planning to training front-line workers to activating an incident command system,

UCI Health — as Orange County's only academic medical system — was prepared for a worst-case scenario when the outbreak hit.

Our prompt, proactive efforts to respond to community needs during this pandemic was guided by a simple principle: UCI Health needs to lead the way, be the source of truth and do our part to protect our talented caregivers and the most vulnerable in our community.

Within a few weeks, we became the first hospital in Orange County to perform in-house COVID-19 testing, then began offering drive-up virus testing at two locations. We also instituted continuous deep-cleaning protocols as well as COVID-19 screening, masking and physical distancing procedures to protect our talented caregivers and the most vulnerable in our community.

We also leveraged the expertise of our colleagues across UC Irvine to launch clinical trials on therapeutic drugs and vaccine candidates. We collaborated with UCI Beall Applied Innovation to produce much-needed personal protective equipment using innovative, 21st-century manufacturing processes including 3D printing.

These accomplishments are a testament to the amazing people at UCI Health, to their professionalism, honor and sacrifice — characteristics that are making UCI Health stronger and better prepared for the future.

In this issue of *Live Well*, learn about our response to COVID-19 and what we're doing to keep Orange County residents safe and informed. Also in this issue, discover how we're pushing the frontiers of medicine, including an update on our state-of-the-art program to treat one of the most aggressive forms of cancer, glioblastoma. Dr. Daniela Bota has emerged as one of the foremost leaders in caring for patients with glioblastoma. It's no wonder people come from around the world to consult with her.

In good times and in bad, we promise to stop at nothing to protect you and your health.

Sincerely,

Chad T. Lefteris
Chief Executive Officer
UCI Health

UCI Health

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Information in this magazine is not meant to
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Support UCI Health

UCI Health and the Susan and Henry Samueli College of Health Sciences are at the forefront of efforts to combat the COVID-19 pandemic.

As the region's only combined academic health system and research university, our infectious disease experts, world-class clinicians and public health researchers are dedicated to preventing the spread of the new coronavirus and its eventual eradication.

During this unprecedented time, your support is more important than ever.

To make a gift to support COVID-19 patient care or research innovations, visit ucihealth.org/giving or call 714-456-7350.

TREATING BACK PAIN WITHOUT SACRIFICING MOVEMENT

WRITTEN BY NANCY BRANDS WARD

Lumbar spinal stenosis, a narrowing of the spaces in the lower spine, can be painful, debilitating and hard to treat. However, a new implant now being studied could give patients relief and help preserve their motion.

UCI Health is one of 30 centers across the country — and the only one in the Orange County area — participating in a clinical trial to evaluate the effectiveness and safety of the device, known as the Premia Spine TOPS™ System. The implant, developed for patients with moderate to severe stenosis, may be an alternative to the current standard of care: spinal fusion, which permanently connects two or more vertebrae, eliminating motion in those bones.

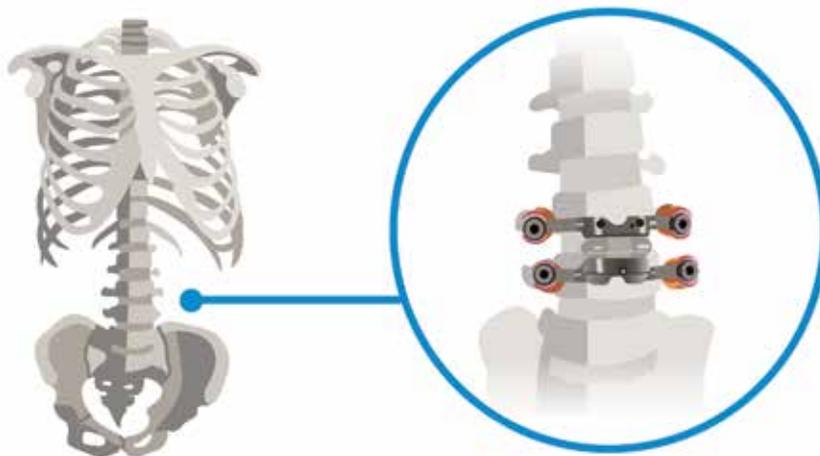
“There’s a trend away from fusion, because it changes the mechanics of the back,” says Dr. Michael Oh, a UCI Health neurosurgeon who specializes in spine surgeries and is the trial’s principal investor. “This new device works much like a hip or knee replacement. We know that patients do better with replacement than fusion for hip and knee surgery. We’re studying whether joint replacement will also work in the more complex lumbar spine.”

Underway for a year now, the study anticipates enrolling 300 patients. Two of three patients are randomly assigned to receive the TOPS implant, while one receives traditional spinal fusion.

TOPS replaces parts of one functional segment — two joints — instead of fusing it in the lumbar part of the spine between the ribs and pelvis. “The surgery involves the same decompression to remove the bone and ligaments that are compressing the nerves, as with a fusion, but replaces them with artificial lumbar joints,” Oh explains.

About 200,000 lumbar spinal fusions are performed each year across the

The TOPS™ System stabilizes and recreates physiological motion in patients with spinal stenosis.



country to relieve severe pain and numbness from the buttocks to the legs, the result of bone and ligaments compressing the nerves. This type of neurogenic pain is made worse by standing and walking, and is relieved by sitting. Patients in pain can become sedentary — a risk factor for many diseases — leading to muscle degeneration.

Fusion helps alleviate pain and increase stability, but it creates some limitations in mobility — about 10 degrees less range of motion, depending on which level is fused. It may also set off a cycle of disease in the adjacent spine segment that ultimately may lead to significant loss of mobility and additional surgery.

“When you fuse one segment of the spine, it puts more pressure on the segment above or below,” Oh says. “That area may need to be fused within five years, and the next level breaks down even faster. By the time you get a couple of levels fused, things like bending down

to tie your shoes become difficult. We’re hoping this device solves that problem.”

The number of joints and the unique mechanics of the lumbar spine have made developing a mechanical replacement more complex than those for hips and knees. There is no Food and Drug Administration-approved use of this or any similar device for the lower back. Patients in the national trial are being followed up at two- and five-year intervals.

“For FDA approval, the trial has to show that TOPS is not worse than fusion,” Oh says.

What if TOPS doesn’t help? Oh says fusion can always be done as a follow-up procedure.

“This trial is reflective of the mission of UCI Health,” he adds. “Discovering new technologies that are leaps and bounds above the standard; teaching residents and fellows this technique; and healing by offering otherwise unavailable technologies to patients in the greater Orange County area through clinical trials like this.” ■

Learn more about the spine surgery trial at ucihealth.org/tops-trial





GRANT WILL FUND ALZHEIMER'S DISEASE RESEARCH

A multidisciplinary team of researchers from UCI and UC San Diego received a \$3.8-million grant from the National Institute on Aging to study molecular changes in the brain caused by Alzheimer's disease. The award will support intensive studies on the changes that occur in neural circuits during the course of the disease.

The UCI team will use genomic and other sophisticated technologies to understand brain changes at the genetic and molecular level. The work has the potential to uncover some of the mysteries of the disorder that have thwarted the development of better treatments, says Xiangmin Xu, PhD, a professor of anatomy and neurobiology and director of the Center for Neural Circuit Mapping at the UCI School of Medicine.

"Our goal is to reveal the molecular changes that occur during the course of the disease, that impact learning and memory, and identify a path toward early detection and new drug therapies for Alzheimer's disease," he says.

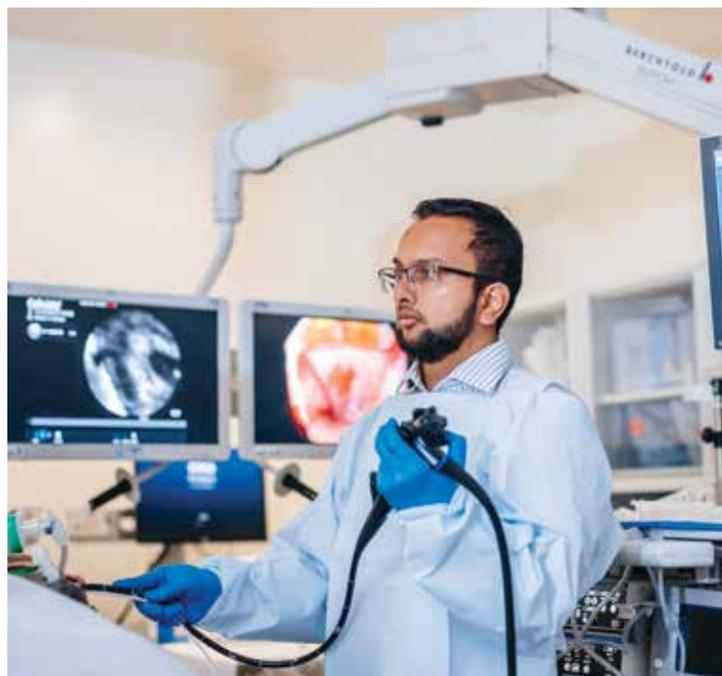
Principal investigators on the project include Xu, Carl Cotman, PhD, a professor of neurology and founding director of the Institute for Brain Aging and Dementia at the UCI School of Medicine, and Bing Ren, PhD, a professor of cellular and molecular medicine and director of the Center for Epigenomics at the UCSD School of Medicine.

ARTIFICIAL INTELLIGENCE COULD HELP DETECT BARRETT'S ESOPHAGUS

Technology pioneered by UCI Health researchers may someday make it easier for doctors to detect Barrett's esophagus in patients at high risk for the disorder. This precancerous condition can occur among people with gastroesophageal reflux disease (GERD). Stomach acid that is regurgitated can influence cells in the esophageal lining to become abnormal, increasing the risk of cancer.

However, studies led by Dr. Jason Samarasena, a gastroenterologist at the H.H. Chao Comprehensive Digestive Disease Center (CDDC), show that a neural artificial intelligence network — a computer program taught to look for the features of abnormal cells — can aid in recognizing early Barrett's esophagus. In a study published in January in the journal *Gastrointestinal Endoscopy*, Samarasena found the AI program was highly accurate in correctly detecting abnormal cells about 95% of the time.

The CDDC is one of the nation's leading research and treatment centers for digestive diseases, including esophageal disorders. CDDC physicians and researchers have helped develop a range of effective options for treating GERD, Barrett's esophagus and esophageal cancer.

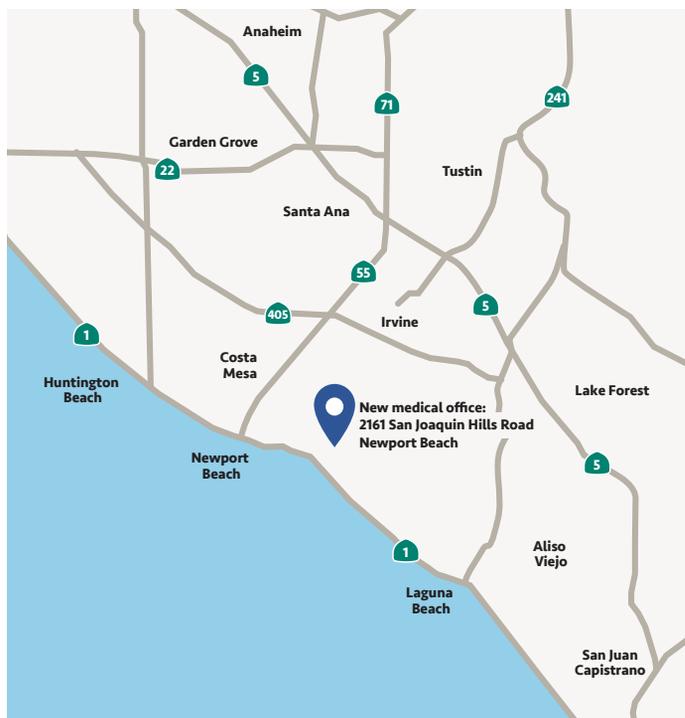


A PATH TO WELLNESS IN NEWPORT BEACH

UCI Health is proud to announce the August opening of our new outpatient specialty healthcare center in Newport Beach. The center, located at 2161 San Joaquin Hills Road, will emphasize evidence-based integrative healthcare, including:

- Acupuncture
- Integrative cardiology
- Integrative dermatology
- Integrative gastroenterology
- Integrative pain management
- Massage therapy
- Mindfulness
- Naturopathic medicine
- Nutrition
- Plastic Surgery
- Sports medicine
- Yoga

Integrative health takes a balanced approach to wellness. Guided by a team of world-class specialists, the practice takes into account every aspect of your life — your health history, lifestyle, stressors and other factors — to restore your health and quality of life. This whole-person approach allows us to understand your unique circumstances to determine the most appropriate treatments and therapies. Our providers work



together to develop treatment plans for your specific needs and help you live a healthy and balanced life.

For more information or to make an appointment, call 949-386-5700 or visit ucihealth.org/newportbeach



HOW SKIN HEALS ITS WOUNDS

A UCI researcher has published the first comprehensive overview of how skin cells change to heal wounds. The paper, led by Xing Dai, PhD, a professor of biological chemistry and dermatology in the UCI School of Medicine, was published in March in the journal *Cell Reports*.

The study provides a blueprint for future research examining why some people's wounds don't heal well. People with diabetes, for example, are more likely to experience poor wound healing. The study explains how adult skin regenerates after injury and the role of skin stem cells. The research is part of a multidisciplinary approach to understanding the biology of skin called the UCI Skin Biology Resource-based Center.

RESEARCH ON FISH OIL COULD IMPROVE HEART HEALTH

UCI researchers have shown that purified, prescription-strength fish oil could prevent more than 70,000 U.S. heart attacks, strokes and other cardiovascular events each year. The research, led by Nathan D. Wong, PhD, professor and director of the Heart Disease Prevention Program in the UCI School of Medicine's Division of Cardiology, was released in March by the American College of Cardiology.

The study, known as the REDUCE-IT trial, demonstrated the fish oil capsule's potential to help people at high risk for heart problems. A previous REDUCE-IT study showed the purified fish oil therapy, which contains icosapent ethyl, could reduce cardiovascular events by 35%. Wong's latest analysis demonstrated the potential impact of the therapy on the U.S. population.

"When you consider that for every 21 patients treated with icosapent ethyl you can spare a cardiovascular event, you begin to see the implications of our results," he says.

Icosapent ethyl has been approved by the Food and Drug Administration for use in conjunction with statin therapy in adults with high triglycerides. The drug is marketed under the name Vascepa®.



CHECKING FOR COVID-19 IMMUNITY

As the COVID-19 pandemic stretches on, demand is growing for blood tests to identify people who may have been exposed to the novel coronavirus and developed antibodies to it.

Unlike the swab tests to detect an active COVID-19 infection, an antibody test is taken from a blood sample to look for the presence of antibodies, or specific proteins, made in response to an infection. Antibodies are a response to a virus, not the virus itself. Such antibodies may mean these individuals have at least some immunity to the virus, formally named SARS-CoV-2, and therefore may be able to return to work and school — and help jump-start the flagging U.S. economy.

Antibody test results are particularly useful for identifying people who have had a previous infection with few or no symptoms, according to the Centers for Disease Control and Prevention. Experts believe that about 25% or more of people who have been infected with COVID-19 may be asymptomatic.

UCI Health began testing for antibodies to SARS-CoV-2 in late April, says Dr. Edwin S. Monuki, head of Pathology and

Laboratory Services. Some antibody tests can produce false-positive and false-negative results, but the UCI Health lab offers only the most accurate tests. Antibody tests must be conducted in a lab certified as meeting federal Clinical Laboratory Improvement Amendments (CLIA).

According to the CDC, it takes one to three weeks — longer in some cases — after becoming infected with SARS-CoV-2 for people to make detectable amounts of antibodies. It's unclear how long antibodies remain in the body and the extent they help protect against another infection.

"We recommend people get the tests at least two weeks after their symptoms started," Monuki says.

People need a physician's order for the test and then have their blood drawn at any of the six UCI Health lab service centers, located in Costa Mesa, Irvine, Long Beach, Orange, Tustin and Yorba Linda. Results are usually available within 24 hours. (Insurance can be billed or the patient can pay \$42 for the test.)



UCI HEALTH CLASS CANCELLATIONS

The COVID-19 pandemic has led to the cancellation of most of our in-person education classes, seminars, lectures and support groups for the first half of the year. Some of the classes have moved online. We look forward to resuming a full slate of educational programs for Orange County residents as soon as public health officials determine it is safe to hold gatherings.

For more information, visit ucihealth.org/events or call 657-282-6357.





UCI Health pulmonologist Dr. Richard Lee is testing a lung medication that may help critically ill COVID-19 patients.

FIGHTING BACK AGAINST THE CORONAVIRUS

UCI Health physicians and researchers are on the front lines of the battle to better detect COVID-19 illness and treat its effects. Among the coronavirus research projects:

UNDERSTANDING THE BENEFITS OF REMDESIVIR

A medication developed to help fight the deadly disease Ebola is being studied as a potential therapy for SARS-CoV-2 virus, which causes COVID-19. UCI Health clinicians launched a study of the antiviral drug remdesivir in March as U.S. cases of COVID-19 began to soar with effective treatments for the disease.

The trial is sponsored by the National Institute of Allergy and Infectious Disease (NIAID). UCI Health, along with UCLA, UC San Francisco, UC San Diego and UC Davis, are designated sites for the first NIAID clinical trials of remdesivir in California.

Preliminary results show remdesivir may be helpful in shortening the hospital stays of patients with the disease. However, additional clinical data is sorely needed, says Dr. Alpesh N. Amin, chair of the Department of Medicine, UCI School of Medicine and executive director of its hospitalist program. Amin and infectious disease specialist Dr. Lanny Hsieh are principal investigators of the UCI site for the remdesivir trial. The preliminary data was published in May in the *New England Journal of Medicine*.

According to the NIAID, study participants must have laboratory-confirmed SARS-CoV-2 infection and evidence of lung involvement, including rattling sounds when breathing and a need for supplemental oxygen or abnormal chest X-rays, or illness requiring mechanical ventilation. Individuals with

confirmed infection who have mild, cold-like symptoms or no apparent symptoms were not included in the study.

In accordance with the study's adaptive design, the trial's second phase has started, comparing remdesivir with remdesivir plus baricitinib, a medication that decreases inflammation in the body.

CAN A LUNG MEDICATION HELP CRITICALLY ILL PATIENTS?

UCI Health pulmonary specialists are working on a potentially lifesaving therapy for COVID-19 patients who are critically ill with fluid accumulation in the lungs. The clinical trial will test the drug Aviptadil, which has a long history of use in pulmonary research.

The Phase 2b/3 clinical study will assess whether the drug can help patients with acute respiratory distress syndrome, a primary cause of coronavirus-induced death. Aviptadil targets inflammatory molecules called cytokines, which COVID-19 whips into a storm, drenching the lung's air sacs in water and rendering them unable to deliver oxygen.

The drug may serve as one of the last lines of defense in cases where significant COVID-19 complications appear, often in the elderly and those suffering from other medical conditions, says Dr. Richard Lee, interim chief of UCI School of Medicine's Division of Pulmonary Diseases and Critical Care Medicine, who is conducting the Aviptadil trial with Dr. Alpesh Amin as principal investigators.

"We're very pleased to be one of the first centers launching this clinical study," says Lee. "This study will focus on patients for whom mortality is alarmingly high. If successful, we hope that treatments such as Aviptadil may change the chances of survival for these patients."



Daniel Boyd placed his trust in UCI Health to treat his aggressive brain tumor.



CREATING CHOICES

Glioblastoma patients once had few options. Now UCI Health offers a range of promising treatments.

WRITTEN BY VICTORIA CLAYTON

PHOTOGRAPHED BY SHANE O'DONNELL

Few people want to devote their lives to problems that seem nearly impossible to solve. UCI Health brain tumor expert Dr. Daniela Bota is one who gladly does.

Bota, medical director of the UCI Health Comprehensive Brain Tumor Program and vice dean of Clinical Research for the UCI School of Medicine, is a nationally recognized researcher leading the fight against one of the deadliest forms of brain cancer: glioblastoma.

This aggressive disease affects about 200,000 people a year and has taken the lives of U.S. Sen. John McCain, Vice President Joe Biden's son Beau Biden, and

rock drummer Neil Peart, to name a few.

Bota has conducted groundbreaking research for more than a dozen years, using various drug therapies as well as patients' own immune systems to fight this virulent cancer. Now, she says, she's seeing real progress. She is especially encouraged by such patients as Chino Hills resident Daniel Boyd, a 64-year-old construction company controller. Boyd was diagnosed with glioblastoma after he started experiencing vision problems.

"I was sitting at my desk one day, and all of a sudden my sight just got kind of strange. It almost seemed like I was looking through a kaleidoscope," explains Boyd, the father of eight adult children ranging in age from 21 to 40. "Then I noticed I started to lose my right peripheral vision. Sometimes a group of three people would walk toward me and I could only see two of them."

Before the vision problems, Boyd endured a difficult few years. His home burned in 2017, and he separated from his wife in 2018. Still, he suspected his vision issues couldn't be chalked up to stress.

"I knew something was wrong, so I went to an ophthalmologist who said I needed an MRI right away." The imaging scan revealed a brain tumor. He got the news just after Thanksgiving in 2018.

Boyd next saw a specialist at City of Hope in Duarte, Calif., and was set to have treatment there when fate intervened. He had mentioned his brain tumor to a church friend, who urged him to meet with another friend before Boyd did anything else. The friend was UCI Health neurosurgeon Dr. Frank P.K. Hsu.

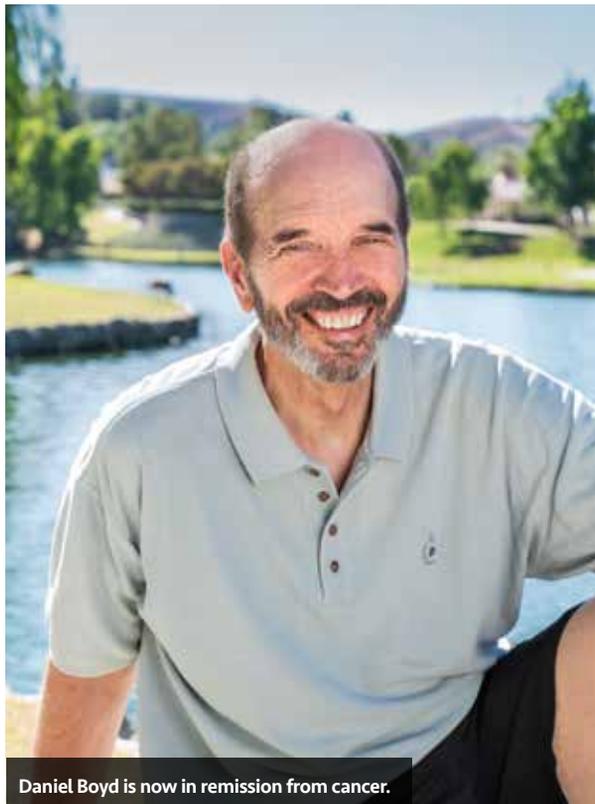
"Honestly, at that point I left it up to my children," admits Boyd. "They've been very successful — a federal agent, a Berkeley grad, a chemical engineer. I told them I think they're a lot better at making decisions than their dad is and I'd go with their recommendation."

After the Boyd children met with Hsu and heard more about Bota's clinical trials, they unanimously agreed that UCI Health was his best option. Within 12 days, Hsu operated to remove Boyd's tumor and prepare him for one of Bota's clinical trials.

Boyd believes his children's judgment

changed the course of his illness. Typically, glioblastoma patients have a recurrence within five to seven months and life expectancy is about 12 to 18 months after the standard-of-care treatment, surgical removal of a tumor followed by chemotherapy and radiation.

Boyd, however, was able to enter a clinical trial for which Bota is the lead investigator. AIVITA Biomedical is the Irvine-based company behind the therapy, which uses the patient's own immune cells to create a vaccine.



Boyd had surgery on a Thursday and was home by the Sunday before Christmas 2018. "Brain surgery sounds really serious, but actually I didn't feel bad afterward," he says. "Part of that had to be because everyone at UCI was incredible. They instill confidence and really make you feel at home."

A week after surgery, Boyd returned to UCI Medical Center for a day-long procedure to begin the cell therapy process. "Essentially, they take all your blood out, spin out the white blood cells and give your blood back to you. It's kind of a recirculating process."

Technically, it's called leukapheresis, and it is part of the process to build a

glioblastoma vaccine tailored to Boyd's particular cancer. His excised tumor, along with his white blood cells, help researchers create an individualized immunotherapy treatment — essentially a supercharged version of his own body's immune response — to fight the cancer.

Following six weeks of Monday-through-Friday radiation plus several months of chemotherapy, Boyd then received eight injections of his immunotherapy vaccine, spaced about a month apart.

"The great part of this treatment is that it has no significant side effects," Bota says. "Patients in the trial are doing quite well as compared to other patients [not in the trial]."

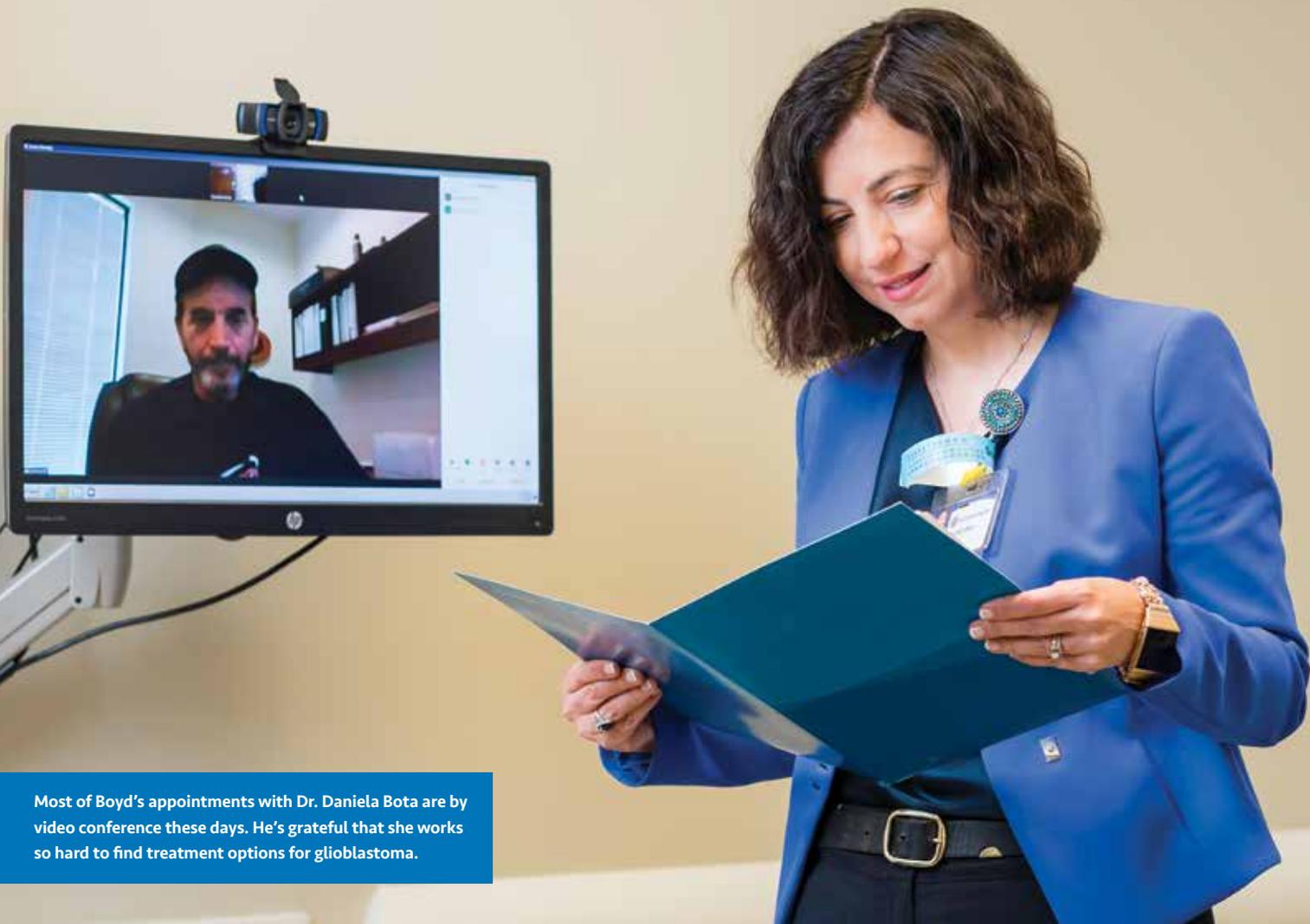
AIVITA Biomedical recently released an update on Phase 2 of the clinical trial. In the analysis, across eight study sites — including UCI Health — with a total of 55 patients, overall survival rate at 15 months was 76%, compared with overall survival of only 48% at 15 months in patients receiving just radiation and chemotherapy. These findings have Bota and other researchers looking to a Phase 3 trial with more patients soon.

"A lot of what we are focusing on and what we are having very good results with involves teaching a patient's own immune cells how to fight the cancer," says Bota. "We're looking at some very safe, highly personalized treatments."

Bota's work on the experimental drug marizomib also has generated impressive results. Unlike traditional chemotherapy drugs, marizomib can penetrate the blood-brain barrier — the filtering mechanism that prevents most substances from passing into our brain tissues. The drug has shown it can inhibit cancer while not causing damage to other parts of the brain.

Over the past 12 years, Bota has shepherded marizomib from preclinical development all the way through the Phase 3 clinical trial now underway with 700 patients in five countries.

Amanda Johnson, a 33-year-old freelance writer in Mission Viejo, has been receiving marizomib for more than two



Most of Boyd's appointments with Dr. Daniela Bota are by video conference these days. He's grateful that she works so hard to find treatment options for glioblastoma.

years under Bota's care. Her glioblastoma tumor — which straddled both sides of her brain — has shrunk so much that it's no longer measurable and Johnson has returned to her pre-cancer life.

There's always a careful screening process to determine if a patient meets the eligibility requirements for any particular trial, but Bota says UCI Health now has a "portfolio of options" to offer glioblastoma patients — which makes her ecstatic.

When Bota started her research, glioblastoma treatment options didn't exist. And few of the treatments that looked promising in early phase studies ever made it to Phase 3. No longer.

"It's a new era for glioblastoma. A lot of us are working on this, and I absolutely feel confident that breakthroughs are coming. We are finding better ways to treat this disease. That's what keeps us going," she says.

Though it may take a decade or more

“WE ARE FINDING BETTER WAYS TO TREAT THIS DISEASE. THAT’S WHAT KEEPS US GOING.”

before the full picture of a drug's efficacy emerges, that's fine with Boyd. His tumor was about the size of a cup — and now it's not measurable. He's back to walking or running four miles a day and enjoying his children and five grandchildren.

When Bota showed him a recent follow-up brain scan, there was no indication of active cancer. He was so surprised, he asked her if she was kidding or just trying to make him feel good. Instantly serious, Bota responded that she never jokes when it

comes to glioblastoma — something Boyd says he appreciates because it instills trust.

It has been a year and a half since his tumor was removed, and he feels great. Waiting a decade, maybe two, for proof that his treatment worked? "That's totally fine by me," he says. ■

To learn more about the UCI Health brain tumor program, visit ucihealth.org/brain-tumor



New health center for children and adults planned for UC Irvine campus



UCI Health will build a new center for pediatric and adult care on the UC Irvine campus — the first phase in what is envisioned as a large medical complex and hospital to serve residents of Irvine, Newport Beach and south Orange County.

Groundbreaking for the building, located on Jamboree Road on the university's North Campus, is tentatively scheduled for fall 2020 and opening in late 2022 or early 2023.

It will bring much-needed pediatric, adult specialty and urgent care, as well as imaging and laboratory services, to a fast-growing area where demand for care is increasing, says Chad Lefteris, chief executive officer of UCI Health.

The 168,500-square-foot center will add to the ongoing expansion of UCI Health medical facilities across Orange County, giving more people access to high-quality, leading-edge university-based medicine. It will provide a continuum of care from childhood through adulthood.

"We're bringing world-renowned specialists to people in Irvine, Newport

Beach and south county for outpatient care and, eventually, inpatient care," Lefteris says. "We're making it easier for people to get care and shortening their travel time."

The child health center will consist of about 32,000 square feet of clinical and medical office space for comprehensive pediatric outpatient services — including pediatric primary care, subspecialty clinics, rehabilitation and simulation, and autism services.

The range of subspecialties to be offered means families will be able to see several specialists in one visit, says

Dr. Steve A.N. Goldstein, vice chancellor of health affairs for UCI.

"Complex pediatric care often involves visiting many specialists for one child," Goldstein says. "Very often those specialists are in different places. Our goal with this center is to have one site that will benefit the patient and family because they can coordinate care in one visit across multiple specialties. It's the right way to take care of anyone — but especially children who need complex care."

The building also will house the Center for Autism & Neurodevelopmental Disorders and specialists who provide

KEY ELEMENTS OF THE CHILD HEALTH CENTER/MEDICAL OFFICE BUILDING IN IRVINE:

Pediatric:

- Pediatric primary care
- Subspecialty clinics
- Neurodevelopmental rehabilitation-simulation
- Center for Autism & Neurodevelopmental Disorders

Adult programs and shared services:

- Adult primary care
- Breast health center
- Urgent care
- Laboratory and radiology



multidisciplinary care for children with autism and other neurodevelopmental disorders, including speech therapy and rehabilitation services.

The remaining space will include medical offices for adult primary and secondary care. The building also will have an attached parking structure to allow families with children easy access.

The child health center — combined with the current construction of the Susan and Henry Samueli College of Health Sciences and the Sue and Bill Gross School of Nursing — signals the realization of a long-held dream to unify medical services, research and training on the UCI campus and complement the services offered at the flagship UCI Health medical campus in Orange, Goldstein says.

“This is the front door to what we foresee, in the years ahead, as a major footprint for healthcare in Orange County,” he says. “The proximity to our university campus will make it easy for our physician-researchers to move back and forth from their labs to the medical complex, enabling them to spend more time developing new tests and treatments.” ■



Construction to start on Samueli College of Health Sciences complex

Taking shape on a 9-acre site on the UCI campus in Irvine are two state-of-the-art facilities to train the healthcare providers of the future. The complex, at the corner of Bison and California avenues adjacent to the UCI Research Park, will include the Susan and Henry Samueli College of Health Sciences and the Sue and Bill Gross School of Nursing.

The \$185 million project will encompass a 150-seat auditorium, a central courtyard that will connect with the Gavin Herbert Eye Institute, landscape design elements that support activities such as yoga and tai chi, a Zen garden and a 600-foot-long wellness walkway leading to the School of Medicine’s Biomedical Research Center. The site also includes space for a proposed School of Pharmacy & Pharmaceutical Sciences building.

“The opportunity provided by the creation of the Susan and Henry Samueli College of Health Sciences will advance healthcare as we all know it should be done, but has not been accomplished in the United States,” says Dr. Steve A.N. Goldstein, UCI vice chancellor for health affairs. “We are standing up for schools — medicine, nursing, pharmaceutical science, population health and public health — working together for professional education and advancing

team-based care. Team-based care is the future of medicine. It allows us to predict disease, prevent disease and personalize care in a patient centered way — advancing public health as well as the health of individuals.”

The College of Health Sciences — a five-story, 108,200-square-foot building that will also be home to the Susan Samueli Integrative Health Institute — is the first university-based health sciences enterprise to incorporate integrative health research, teaching and patient care across its schools and programs. Students will learn evidence-based medicine in the context of whole-person, patient-centered care that encompasses mind, body and spirit.

“Optimal health and healing come from taking an integrative approach to healthcare that is patient-centered, science-based, transdisciplinary and team-delivered,” Goldstein says.

The four-story Sue and Bill Gross School of Nursing will house classrooms and teaching labs in about 71,500 square feet of space. It will feature a lounge that opens onto a serene outdoor space. The new buildings are made possible through a gift of \$40 million from the William and Sue Gross Family Foundation and \$200 million from philanthropists Susan and Henry Samueli. ■



Newly ensconced as CEO, Chad Lefteris stepped up to manage a crisis.

Photography by Kyle Good

COPING WITH COVID-19

UCI Health responds to the pandemic with resources, intellect and resolve.

WRITTEN BY SHARI ROAN

The novel coronavirus pandemic has produced challenges unlike anything previously seen in healthcare in the United States. However, UCI Health routinely prepares for unforeseen disasters and responded quickly and calmly to protect patients and the residents of Orange County. We asked Chad Lefteris, chief executive officer of UCI Health, to reflect on the early weeks of the pandemic and lessons learned.

Was the pandemic something you had prepared for?

We plan for disasters all the time. We reevaluate our UCI Health disaster response plan annually — to prepare for everything from an active shooter to an earthquake and pandemic events. We do “surge” planning several times a year, which means we plan for a rush of patients regardless of the cause. In those situations, we may reduce or eliminate nonurgent procedures. If a procedure is not immediately or critically needed, we can take steps to ensure our employees and equipment can respond effectively to the surge when it shows up at our door.

Does an infectious disease pandemic pose unique challenges compared with other disasters you plan for?

The difference here is that this is an event that will be sustained. It’s a marathon, not a sprint. That makes this type of disaster more challenging.

Was there a turning point when you realized this was heading at you?

Yes. It was the end of January when the Centers for Disease Control and Prevention established a COVID-19 incident command system, then activated its emergency response center. At that point, we started to operationalize our pandemic processes.

What has been hardest in dealing with the pandemic so far?

One of the challenges is the amount of misinformation out there. As an academic health system, UCI Health is the source of truth

in our community. Our experts base health recommendations on facts and science. Another challenge was the shortage of personal protective equipment across the world. Every day we work to ensure that our patients and caregivers are safe, which means scouring every possible supply chain source.

How would you describe the response of UCI Health caregivers?

I'm extremely proud of how quickly our team responded. We immediately established in-house laboratory testing and two drive-up virus testing centers. This was done in days, not weeks or months. That is just incredible.

Were you concerned about how caregivers would respond?

Not at all. I'm so impressed by how our clinicians and caregivers are running to the fight and how much they sacrifice. They are resilient, and it's so uplifting and humbling to see that every single day. UCI Health is blessed with amazing people.

What resources have emerged to help with the pandemic response?

We are fortunate to have the UCI Beall Applied Innovation program. They are working with UCI researchers to create from scratch some of the protective gear we need, from goggles to respirator masks and face shields. We've also been fortunate to have corporate partners who stepped up to help us. We've received technology that lets us disinfect and reuse personal protective gear, such as ultraviolet lighting and vaporizing hydrogen peroxide. We are also thankful for our generous community partners who help support our front-line caregivers.

Do you feel extra responsibility as the only academic health system in Orange County?

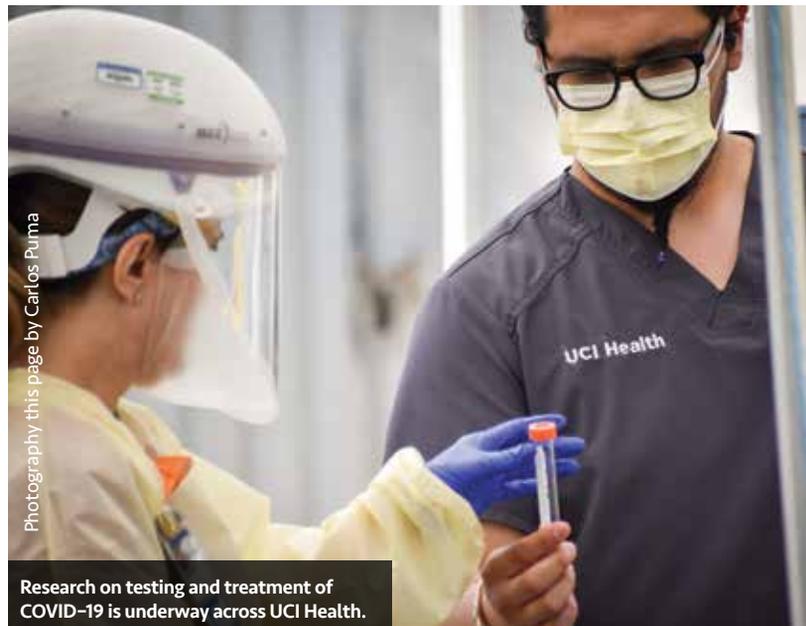
We are, and must be, the source of truth about the virus, based on science and fact. Hopefully, we can dispel rumors and provide transparent information so the public can make informed decisions. Our health communications department has worked tirelessly to get this information out. This outbreak highlights the best of what we do in academic medicine. We care for people in a multidisciplinary way. That is what sets us apart — how we use our leading-edge medicine and world-class talent. This pandemic shows our true colors.

What have you learned from this pandemic that may help in future disasters?

We realize that as an academic health system, when faced with challenges, we do our best work when we share with each other and support each other. We have also collaborated with our regional hospitals to make sure that we pass along



Drive-up testing centers were established early in the pandemic.



Photography this page by Carlos Puma

Research on testing and treatment of COVID-19 is underway across UCI Health.

anything we learn and support their surge planning. We also convene all Orange County's emergency management leaders every Friday. That has become invaluable. We have strength in numbers. It's very helpful for all Orange County hospitals to share what they're doing and what they're learning. ■

Learn about the UCI Health COVID-19 response at ucihealth.org/covid-19



Life Without Pain



College student Heidi Barragan underwent islet cell transplantation to cure her of the pain of pancreatitis.

An innovative procedure frees a young woman from chronic pancreatitis.

WRITTEN BY SHARI ROAN

PHOTOGRAPHED BY SHANE O'DONNELL

A few years ago, the pain from chronic pancreatitis was so debilitating, Heidi Barragan considered dropping out of college. Her mother encouraged her to keep fighting — relying on pain medications and “learning to live with the illness.” Barragan persevered, taking online classes and enduring repeated hospital visits.

Then in 2017, a blood clot formed in her portal vein, which carries the body’s blood to the liver to process. Doctors implanted a stent in Barragan’s portal vein and put her on blood thinners, but her condition deteriorated.

The young San Juan Capistrano woman’s hospital visits increased to one to three times per month, and her weight plunged from 130 to 97 pounds. As her condition worsened, Barragan’s UCI Health physicians proposed a groundbreaking procedure called total pancreatectomy with islet cell auto-transplantation. UCI Medical Center is the only hospital in Orange County to offer the procedure, a program started by Dr. David K. Imagawa.

“Heidi has hereditary chronic pancreatitis, which meant she had a high lifetime risk of developing pancreatic cancer,” says Dr. Zeljka Jutric, a UCI Health surgical oncologist who specializes in liver, pancreas and bile duct surgery. The episodes of pancreatitis Barragan had been having since middle school were getting increasingly painful. “It’s a miserable life; you don’t know when you’ll have the next attack,” Jutric says.

Chronic pancreatitis is an inflammation of the organ that helps produce enzymes to digest food. The first step in Barragan’s treatment was to remove the pancreas, which normally leads to permanent diabetes. The pancreas contains clusters of cells called islet cells that create hormones such as insulin, which regulates blood sugar. Although Barragan faced the risk that she would develop diabetes, she was

considered a good candidate for islet cell transplantation, using her own islet cells.

“When UCI Health gave me the option of an islet cell transplant, I was shocked. I thought pancreatitis was something I would have for the rest of my life,” says Barragan, now 23. “I had developed a bond with Dr. Jutric, so I was really confident. I wasn’t scared of surgery at all.”

On March 8, 2019, Jutric performed the 14-hour operation with Dr. Ronald Wolf. After removing Barragan’s pancreas, her islet cells were isolated, processed and transplanted into her liver so that they could function in lieu of the pancreas. To date, she hasn’t developed diabetes.

“Heidi is so strong. In two days, she was sitting up in her hospital bed doing homework,” Jutric says.

UCI Medical Center is one of a select number of hospitals in the United States to perform the procedure. The level of physician, surgeon and nursing excellence along with state-of-the-art facilities at the H.H. Chao Comprehensive Digestive Disease Center make UCI well-suited to find innovative solutions to the most challenging cases, Jutric says. UCI researchers also are studying the safety and efficacy of islet cell transplantation to treat type 1 diabetes.

Barragan has discovered a life without pain. She returned to college at Brigham Young University–Idaho in Rexburg, where

she majors in construction management and business. She resumed her love of skateboarding and longboarding. She was even prepared to give herself insulin injections, but that hasn’t been needed.

“I’m pain-free, and that makes me able to focus on my regular activities,” she says. “Before the surgery, I was always uncomfortable. It was like a stabbing and pressure. Eating and drinking would make it worse. I would just curl up and not move. I can do anything now. I’m eating all of my mom’s Mexican food.”

The experience, Barragan says, has made her appreciate medical research and places like UCI Medical Center that offer the latest treatments. Barragan’s father died from complications of pancreatitis at another medical center in 2017. Until that attack, he didn’t know he had the disease. Barragan’s sister, grandfather, aunt, uncle and some cousins have been diagnosed with chronic pancreatitis. Her aunt also underwent islet cell transfusion at UCI Medical Center earlier this year.

“I’m so happy I made this decision because now my family can have a solution too,” Barragan says. “They don’t have to wait for so many years before their pancreas gets worse. They can fix it now.” ■



Learn more about islet cell transplantation at ucihealth.org/isletcell 



Photography by Carlos Puma

Ernie and Jennifer Romo

A LIFE COMING INTO FOCUS

When not at his job as a restaurant executive, Ernie Romo loves to paint — outdoors and in his studio. That passion was almost taken from him in the fall of 2017 when the Mission Viejo man experienced a sudden loss of vision in his right eye due to type 1 diabetes. Upon meeting retina specialist Dr. Mitul Mehta at the UCI Health Gavin Herbert Eye Institute (GHEI) for his vision loss, he knew he was in good and capable hands. Mehta diagnosed diabetic retinopathy — hemorrhaging of the blood vessels in the retina — and performed successful surgery. With his vision restored, Romo and his wife, Jennifer, have become supporters of the 20/20 Society, a group that raises funds to support GHEI research.

“What frightened me the most was not knowing the cause of my vision loss. I woke up on a Monday morning with black lines and a haze in my right eye. I had this sinking desperation after wiping my eye and realizing it wasn't going away. Fear and panic began to set in. My initial assumption was that I had wiped my eye with some type of solvent or pigment from my art supplies the night before. I remember standing in front of the mirror, being really hard on myself and praying that it would be OK.

What followed was a rapid succession of appointments at the Gavin Herbert Eye Institute. On Monday afternoon, images and scans were performed. Tuesday I met Dr. Mehta and received his official diagnosis of diabetic retinopathy. Wednesday was my pre-op where my first eye injection was administered. Thursday was surgery day. Friday was my post-op.

It was surreal when the bandage was peeled away. I realized I could see light and people in the room. Instead of foggy silhouettes, they were the faces of the people I love. My vision before this trauma was 20/20 and now it is 20/15.

Dr. Mehta embodies the calm, confident approachability I needed throughout this journey. He gave me a sense of security but not a false sense of hope. I have received care across many areas at UCI Health — from primary care and endocrinology to thyroid treatment and now retinopathy surgery. UCI has consistently treated me with warmth and kindness that transcends the incredible research and technologies that are at their disposal.

Before UCI, I felt like a victim of this disease. I've had my hope reinstated — because if I face any complications in the future, UCI is my healthcare home. My health over these past five years has improved beyond what I ever thought possible. I live with a new sense of certainty. I am in control, and I can continue on this road of improvement one step at a time in the right direction. My family shares in this victory with me with their support and newfound hope. My life is brighter and filled with more adventure, which I will continue to capture on canvas.

My hope is that by sharing my story, I can be a support for other type 1 diabetics who may feel like victims. I'd like to say to them: There is hope.

— Ernie Romo



Learn more about Gavin Herbert Eye Institute at ucihealth.org/ghei

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