

# UCI

MAGAZINE

Winter 2022



*Mental Health  
and Wellness*

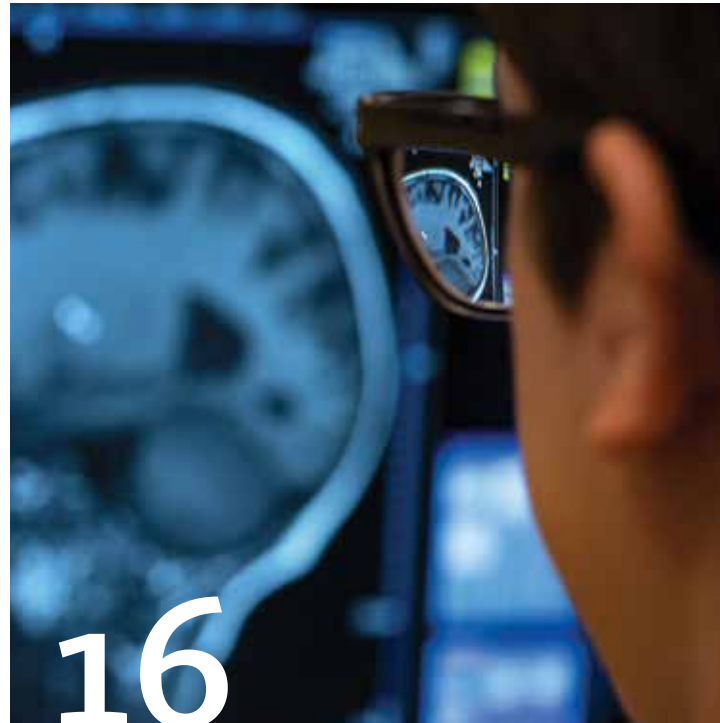


## *Of Anteaters and Bots*

*A student and a delivery robot nonchalantly cross paths near the School of Humanities on a chilly January afternoon as the campus temporarily entered remote learning once again after winter break.*

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Mental Health and Wellness



**Stemming the Rising Mental Health Crisis:** UCI researchers help illuminate the complexities of the mind and find solutions to prevent a twin pandemic



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**Caring for Anteaters:** Amid pandemic challenges, UCI's mental health and wellness guardians work responsively – and passionately – to serve the campus community



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**About This Issue:** We began this edition of *UCI Magazine* in September 2021 as the campus returned to in-person instruction after 18 months of remote learning due to the pandemic. The majority of the stories and photos were completed before the omicron variant of COVID-19 led to a surge in cases over the winter holidays. Please note that public health and safety guidance evolved throughout this period and that photos reflect appropriate standards at the time taken.

## Letter From the Chancellor



As we approach the third year of the COVID-19 pandemic – and what a grim anniversary it is – it is clear that there is scarcely a person anywhere in the nation who has not been affected by it in one way or another. Some of us have contracted the disease or had a family member or friend who suffered from it, but all of us have had to cope with the myriad stresses – including isolation and loneliness, job loss and great uncertainty about the future – caused by it. As Dr. Paramjit Joshi, interim chair of the UCI School of Medicine's Department of Psychiatry & Human Behavior, says elsewhere in these pages, "The mental health

pandemic continues alongside the COVID-19 pandemic, and the psychological effects might last much longer."

As a public research university created by the people to improve our society through education, research and service, UCI is well suited to respond to these extraordinary challenges. From our earliest days, we have been at the forefront of advancing our understanding of how the mind works and what can help it work better. The campus has deservedly earned a national reputation for leadership in such areas as neurodegenerative diseases (the Institute for Memory Impairments and Neurological Disorders, or UCI MIND), behavior and learning (the Center for the Neurobiology of Learning and Memory), and integrative health (the Susan Samueli Integrative Health Institute).

And now, as you will read, UCI has the unique opportunity to transform our knowledge and treatment of depression, one of the most widespread and debilitating disorders of the mind. Thanks to the extraordinary generosity of the late philanthropist Audrey Steele Burnand, who bequeathed UCI \$55 million, one of the largest research gifts in our history, we are in the process of establishing what will be known as the Noel Drury M.D. Depression Research Center. The cross-disciplinary center will draw on faculty from across the academic landscape who will explore the disease – from furthering our understanding of its causes to developing new and innovative treatments to moving those treatments into practice.

This is why UCI was created. This is what we do. This is our brilliant future.

Fiat Lux,

Howard Gillman  
UCI Chancellor

### UCI Magazine

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#### Chancellor

Howard Gillman

#### Vice Chancellor, Strategic Communications & Public Affairs

Ria Carlson

#### Associate Vice Chancellor, Public Affairs

Sherry Main

#### Managing Editor

Marina Dundjerski

#### Design

Vince Rini Design

#### Visuals

Steve Chang and Steve Zylus

#### Copy Editor

Kymberly Doucette

#### Editorial Advisory Committee

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#### Contributing Writers

Christine Byrd, Cathy Lawhon, Rosemary McClure, Kristin Baird Rattini, Roy Rivenburg and Jim Washburn

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*UCI Magazine*  
UCI Office of Strategic Communications & Public Affairs  
120 Theory, Ste. 100  
Irvine, CA 92697-5615  
949-824-6922 • [ucimagazine@uci.edu](mailto:ucimagazine@uci.edu)  
[communications.uci.edu/magazine](http://communications.uci.edu/magazine)

## Then and Now



# 1968

Fifty-four years ago, being a "remote" campus – on land once known as the San Joaquin foothills – meant something entirely different – and almost unimaginable today. In this photo looking south-southeast from the Mesa Court housing community, students make their way to and from the Commons (renamed Gateway Study Center) and, just behind it, the Library-Administration building (now Jack Langson Library).



# 2022

Today, a view from the top floor of the Humanities Instructional Building, looking eastward down Ring Road, shows how much the campus has changed.

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### UCI Art Museum Gets Naming Gift

UCI received a naming gift from **Jack and Shanaz Langson** in December to support the construction and operation of a state-of-the-art facility to house the Institute & Museum of California Art and its treasure trove of California works from the Buck and Irvine Museum collections. The couple's gift will also help catalyze the growth of a multimillion-dollar endowment to provide the Jack & Shanaz Langson Institute & Museum of California Art with long-term funding and advance its mission in arts research and scholarship, conservation, presentation and interdisciplinary learning. The Langson name is already familiar on campus as the pair both serve as trustees of the UCI Foundation and have long championed UCI, especially the arts, health and the Jack Langson Library.

### UCI Alum Wins Nobel Prize

**David W.C. MacMillan**, who earned a doctorate in chemistry at UCI in 1996, was awarded the 2021 Nobel Prize in chemistry for his work in creating better catalysts for converting and building molecules. Now the James S. McDonnell Distinguished University Professor of Chemistry at Princeton University, he shares the prize with Benjamin List from Germany's Max Planck Institute for Coal Research. MacMillan was advised through the course of his graduate studies at UCI by Larry Overman, now Distinguished Professor emeritus of chemistry. Said Overman: "The organocatalytic chemical synthesis methods developed by David MacMillan are used every day around the world in the discovery and development of new medicines."



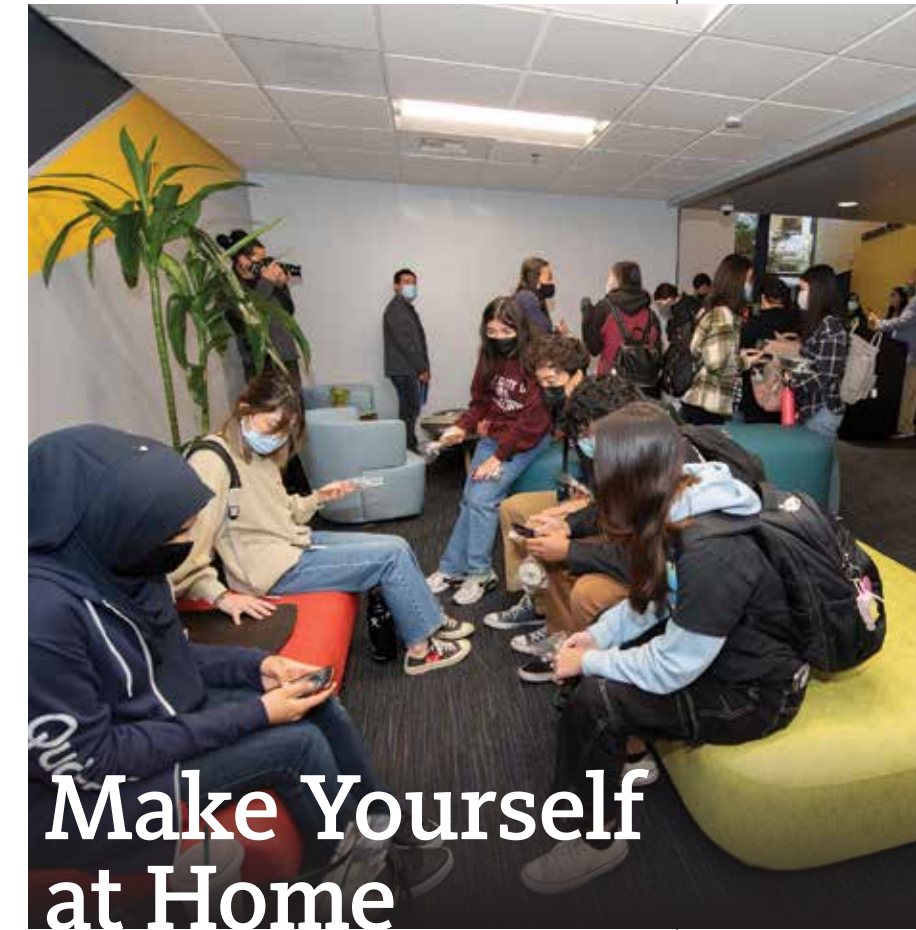
"We've seen that young people are early and enthusiastic adopters of new technology. A lot of the effects [of the metaverse] are going to depend on how mindful we are, as adults, as technology developers, policymakers, educators, at scaffolding that youth in a way that we know promotes positive development. ... One of the biggest things that we see is it's not so much the technology itself that is harmful, but the anxiety, the conflict it creates within families, within people's perceptions that it's harmful."

**Candice Odgers**, UCI professor of psychological science  
*The Wall Street Journal*  
 Jan. 9, 2022

### 'One Door for All' Youth Services



Orange County will be home to new youth drop-in centers offering wellness services to those between the ages of 12 and 25. Endorsed by Orange County to apply for a \$2 million grant from California's Mental Health Services Oversight & Accountability Commission, UCI will partner with the Wellness & Prevention Center in south Orange County to establish and administer youth drop-in centers following the allcove model created by the Stanford Center for Youth Mental Health and Wellbeing. "The easiest way to think about what allcove is trying to create is 'one door for all,'" said Stephen Schueller, UCI associate professor of psychological science and director of the project. "We know a lot of different things contribute to well-being: education, being well physically and mentally, being connected with your community. There is a desire to bring all these elements together." Schueller, who also directs UCI's Wellness Initiative in Social Ecology, will head the allcove team in Orange County and oversee an allcove center on the UCI campus. The Wellness & Prevention Center will lead another site in south Orange County.



## Make Yourself at Home

Students faced with long commutes and lengthy gaps between classes relax in UCI's new Commuter Lounge, which opened Oct. 27 in the Student Center. Equipped with a microwave oven, a refrigerator, Wi-Fi, daily-use lockers and other amenities, the space is meant to help students "stay positive, meditate, recharge and smile."

## Unvaccinated Pregnant Women With COVID-19 Face Greater Mortality Risk

Pregnant and dangerously ill with COVID-19: This alarming combination was found repeatedly by UCI researchers in a large study on SARS-CoV-2 infection at the time of delivery that was recently published in *JAMA Network Open*.



COVID-19 infection when admitted to the hospital for childbirth was associated with a 15-fold risk of maternal death compared with women without COVID-19, according to Dr. Jennifer Jolley, a study author and UCI Health obstetrician.

She says the findings confirm what obstetricians have been seeing among their own patients. "It was suspected early on that COVID infection in pregnancy results in more severe disease. This study gave us a way to quantify the risk," Jolley says. "If [expectant mothers] get it, they get sicker than women who are not pregnant."

In addition to being more likely to die, they face higher rates of intubation and ventilation, admission to an intensive

care unit and preterm birth. Jolley, associate professor of maternal & fetal medicine, co-authored the study as part of a team that included Dr. Ninh T. Nguyen, chief of the UCI School of Medicine's Division of Gastrointestinal Surgery. The researchers explored the health outcomes of 869,079 women who delivered in university-based hospital systems between March 1, 2020, and Feb. 28, 2021 – among them 18,715 flagged in a national database as having been infected with COVID-19.

The findings are a somber reminder of the increased risks that pregnant women face if they contract the virus, and Jolley says it further underscores the need to expand vaccinations among them. Expectant mothers, as a group, have among the lowest COVID-19 vaccination rates in the U.S., according to Centers for Disease Control and Prevention data. Only 31 percent of them had been vaccinated by September, when the agency issued an urgent health advisory to "increase COVID-19 vaccination among people who are pregnant, recently pregnant (including those who are lactating), who are trying to become pregnant now, or who might become pregnant in the future to prevent serious illness, deaths and adverse pregnancy outcomes."

## Researchers Unravel Mystery Behind Toxic Intolerances

Can the carpeting your employer installed at your workplace make you sick? Just ask employees at the U.S. Environmental Protection Agency, where new carpeting at the Washington, D.C., headquarters appears to have sickened more than 100 workers, with some becoming permanently disabled from chemical intolerances.

UCI's Shahir Masri is among the researchers who focused on the issue in a recent international study. An assistant specialist in air pollution exposure assessment and epidemiology in UCI's Program in Public Health, Masri is co-first author of the study, which demonstrates evidence of the mechanism for how and why people develop unexplained intolerances to chemicals, foods and drugs.

The paper, published last year in the journal *Environmental Sciences Europe*, reviews eight events in which groups of individuals shared the same exposure to chemicals and developed multisystem symptoms and intolerances, either through a single major "initiating" event or repeated low-level exposures. Those people included EPA employees, Gulf War veterans, casino workers exposed to pesticides, pilots and flight attendants exposed to fumes, firefighters responding to the World Trade Center tragedy, surgical implant patients, those exposed to mold at home or in the workplace, and tunnel workers exposed to volatile organics.

Although intolerances to certain chemicals affect 15 to 30 percent of the U.S. population, the causes have not been well understood. The new study provides a link between



exposures to common chemicals and so-called unexplained illnesses. It also, importantly, asserts a seldom-discussed mechanism for how and why this happens: a two-stage disease process called toxicant-induced loss of tolerance.

"The scientific community has been behind in studying this issue because of its complexity," says Masri, adding that the paper's implications are important to Southern California, which is regularly hit hard by wildfires. "This is the type of event that one would expect to lead to intolerances. Any time large populations are involved, even minor exposures can translate to meaningful impacts."

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**UCI Health**



## A Reason to Be Grateful

*After an 18-month hiatus due to the pandemic, the UCI Symphony Orchestra, conducted by Stephen Tucker, made a triumphant return to the stage with a special Thanksgiving concert at the Irvine Barclay Theatre. The Department of Music lost most of its performance schedule during the remote year because of the inability to play virtually without latency issues in connecting so many people together online. Students who had remained isolated from one another until the fall term were keen on making the first concert of the year memorable. The energy in the room was palpable during the sold-out show, which featured pieces by composers Edvard Grieg and Joseph Haydn and began with Antonín Dvořák's "Romance," Op. 11, showcasing third-year music and computer science major and concertmaster Joseph Wong on violin. "It was definitely surreal and a great feeling to be finally able to perform for a live audience once again after a year of remote learning," Wong says. For the musicians, the audience's applause at the night's end heralded the finale to a long waiting period – one of the best sounds of all.*



## Flood Reconnaissance

Belgium, Germany and the Netherlands have modern, state-of-the-art infrastructure and flood control technologies, but the nations were still unprepared for the record rainfall that occurred in the summer of 2021. A deluge July 14-16 killed more than 200 people and inflicted billions of dollars in damage. In the weeks following the disaster, Anne Lemnitzer, UCI associate professor of civil & environmental engineering, headed an international reconnaissance team on a National Science Foundation-funded project to inspect affected areas in the three countries, focusing specifically on Germany's Ahr River Valley. "Raging streams of water with extremely high speed and energy formed in narrow sections of the valley and caused immeasurable destruction," she says. "The people who evacuated the day before were safe. Those who tried to evacuate the same day often did not make it. You cannot walk in 2-foot-deep floodwater while it's flowing." Lemnitzer's fluency in German was beneficial during the project and helped her lead 18 individuals as they evaluated the performance of buildings and infrastructure under flood conditions. They studied erosion and sediment redeposition – processes of riverbeds and riverbanks – and examined the effectiveness of flood prevention and protection systems. "We will, unfortunately, experience more of these extreme events given climate change," Lemnitzer says. "Recovery periods are becoming shorter, weather patterns are shifting, and modern design has not adapted yet to the higher frequency and intensity of recent flooding."



Anne Lemnitzer





**Albert Chang** | Medical director, UCI Student Health Center



Steve Zylius / UCI

## UCI Student Health: There for Both Mind and Body

In 2017, Dr. Albert Chang became medical director of the UCI Student Health Center, which addresses students' physical and mental health needs. The "fully functional medical center," as he describes it, employs some 120 people and encompasses primary care doctors, specialists (including psychiatrists), nurses, a laboratory, a radiology department, a pharmacy and other services.

Overseeing an enterprise of that scope would be challenging in the best of times, and these past two years have been anything but that. "My normal, day-to-day job was to be the overall manager of our Student Health people, dealing with hiring, planning, staffing and putting out the large fires while our great team of managers put out the smaller ones," Chang says. But since COVID-19 hit in early 2020, the effort has become one of "everyone doing everything, all the time."

As much as anyone can be prepared for the worst pandemic in a century, he was well equipped.

Simultaneous to getting his M.D. at Boston University's School of Medicine, Chang earned a master's in public health. After completing his resident training in pediatrics at CHOC Children's Hospital, he did a preventive health residency at UCLA. For the eight years prior to his arrival at UCI, he was medical director of a chain of seven primary care clinics aiding Orange County's underserved populations.

Chang talked recently with *UCI Magazine* contributor Jim Washburn about the Student Health Center's role in maintaining students' mental and physical well-being through these troubled years.

### How has UCI fared during the pandemic, as compared to the general population?

UCI is definitely an at-risk population because so many people congregate here. But we also have great advantages, such as our public health specialists and nationally recognized virologists and infectious disease experts we can confer with.

UCI's early move to remote learning also helped. Another great asset: the students themselves. I'm very proud that their vaccination rate is about 98 percent. You don't get those compliance rates almost anywhere else. It helped that students already understood why the University of California has long mandated several vaccinations for everyone on campus. There's also a culture at UCI of being smart and being safe, so COVID-19 was approached with science and reason.

Thanks to that, we're at a safer place now, but we're keeping every one of our fingers crossed because of the mutations this virus is still making.

### What's the range of mental health issues that Student Health deals with?

There really is not a disorder that we don't see in some form, led by depression and anxiety. These may be long-term conditions students already had or short-term ones that might be considered adjustment disorders. I'm so proud of all of our students at UCI because I recognize how challenging college can be. That's especially so among UCI's huge first-generation and international student populations. They're often teenage individuals from very different cultures, with few resources, dropped into a new academic and social environment – and now with a pandemic. The adjustments expected of them are incredible, so sometimes it's not true long-term depression or anxiety; they just need some support for getting back on track. We see a number of obsessive-compulsive, bipolar and eating disorders, which can be among the most challenging and complex conditions for our students.

We always evaluate the whole student comprehensively. There are mental health screens and guidelines that we follow even if a student comes in with a twisted ankle or a cold. Our routine might include asking: "Regardless of what you're here for today, how do you feel? What's affecting your life right now? How are your classes going?" The idea of these screenings is to catch potential mental health issues early on, rather than waiting for symptoms to appear – much like how you might catch a precancerous condition by doing a blood screening or a colonoscopy.

We also have to make sure we're taking care of ourselves so we can be of help to others. Provider burnout and compassion fatigue are very real things. Some of us are dealing with upheaval and lost loved ones of our own, and it can be heartbreaking if there's a patient you're unable to help.

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**"We always evaluate the whole student comprehensively. There are mental health screens and guidelines that we follow even if a student comes in with a twisted ankle or a cold."**

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### What are some of the mental wellness resources available to students?

If they're having issues, we make sure they know there are paths open to them, including referrals to our own mental health department, where we have psychiatrists and social workers available to support them.

Other resources include the Center for Student Wellness & Health Promotion, which offers consultations with health educators, and the Counseling Center, which has been doing a phenomenal job to support a huge volume of our students, offering information, counseling and referrals.

### How did you start on the path that led you here?

I was born and raised in Orange County, in Seal Beach. My parents were immigrants from Taiwan. When I was looking toward college in the '80s, my father – being an electrical engineer – suggested, "Why don't you do computer science? There's probably a future in that." At UC Santa Cruz, I quickly learned that I didn't have any great love for programming. Biology had fascinated me since I was a kid, so I changed majors. My parents were not happy when I told them I might aim to become a doctor. No one in our family had gone into medicine, and they worried I'd be swamped in that intense field. But once I set myself to it, they were very supportive. I never imagined then that I would ever be dealing with the things my team and I have been these past years, but I'm glad that we're here to help. ●



# Stemming the Rising Mental Health Crisis

*UCI researchers work across disciplines to help illuminate the complexities of the mind and find solutions to prevent a twin pandemic*

By Christine Byrd | Photos by Steve Zylus

**W**hile the pandemic has brought mental health into sharper focus for many, 1 in 5 adults were receiving mental health treatment before the arrival of COVID-19. Addressing mental health – and unraveling the mysterious ways in which the brain drives our behaviors and emotions – requires the collective work of scientists with expertise ranging from genetics to pharmacology and biomedical engineering to public health.

“The most exciting scientific discoveries take place at that interface between different disciplines,” says Dr. Steve Goldstein, UCI vice chancellor for health affairs. “Clinician scientists studying cognitive function is one classic example of mental health research. But at UCI, our cross-disciplinary focus, bringing together expertise and resources, allows us to make even greater leaps of knowledge.”

While older adults were hit hardest by the COVID-19 virus, the pandemic exacted the greatest mental health toll among young people. In December 2021, U.S. Surgeon General Vivek Murthy issued a rare public health advisory warning about the rise in mental health problems among children, adolescents and young adults.

“It would be a tragedy if we beat back one public health crisis only to allow another to grow in its place,” he wrote.

For at least a decade prior to the pandemic, rates of childhood mental health issues had been rising steadily, with suicide the second-leading cause of death for 10- to 24-year-olds, after accidental injury. During the first six months of the pandemic, when most children were largely sheltering at home, emergency visits for mental health problems jumped 24 percent for children 5 to 11 and 31 percent for those 12 to 17.

“The surgeon general’s recent advisory is unfortunate but unsurprising,” says Bernadette Boden-Albala, director of UCI’s Program in Public Health. “On its own,

adolescence is a critical time for many young adults, who are still forming their identities and navigating the challenges that come with development. Add a global pandemic with long bouts of social isolation on top of that, and it’s no wonder our youth are struggling with mental health.”

Doctors at UCI Medical Center say they’re treating young patients in greater numbers, and with more acute symptoms, than ever before.

“What we hear from our patients is that they feel as if they’re in a pressure cooker at home,” says Dr. Paramjit Joshi, a child and adolescent psychiatrist who serves as interim chair of psychiatry & human behavior at the UCI School of Medicine. “The parents are equally stressed out handling their own work and providing child care at the same time, and there is often no space and breathing room for some families.”

For children who were already anxious or on the autism spectrum, the interruption in their social and emotional



**1 in 5** adults receive mental health treatment annually.

Certain childhood experiences are widely recognized as negatively affecting mental health – neglect, abuse, an incarcerated parent. But Baram focuses on a lesser known and more subtle factor: predictability from parents and the environment. “What the developing brain sees as adversity is not necessarily what we see as adversity,” she explains.

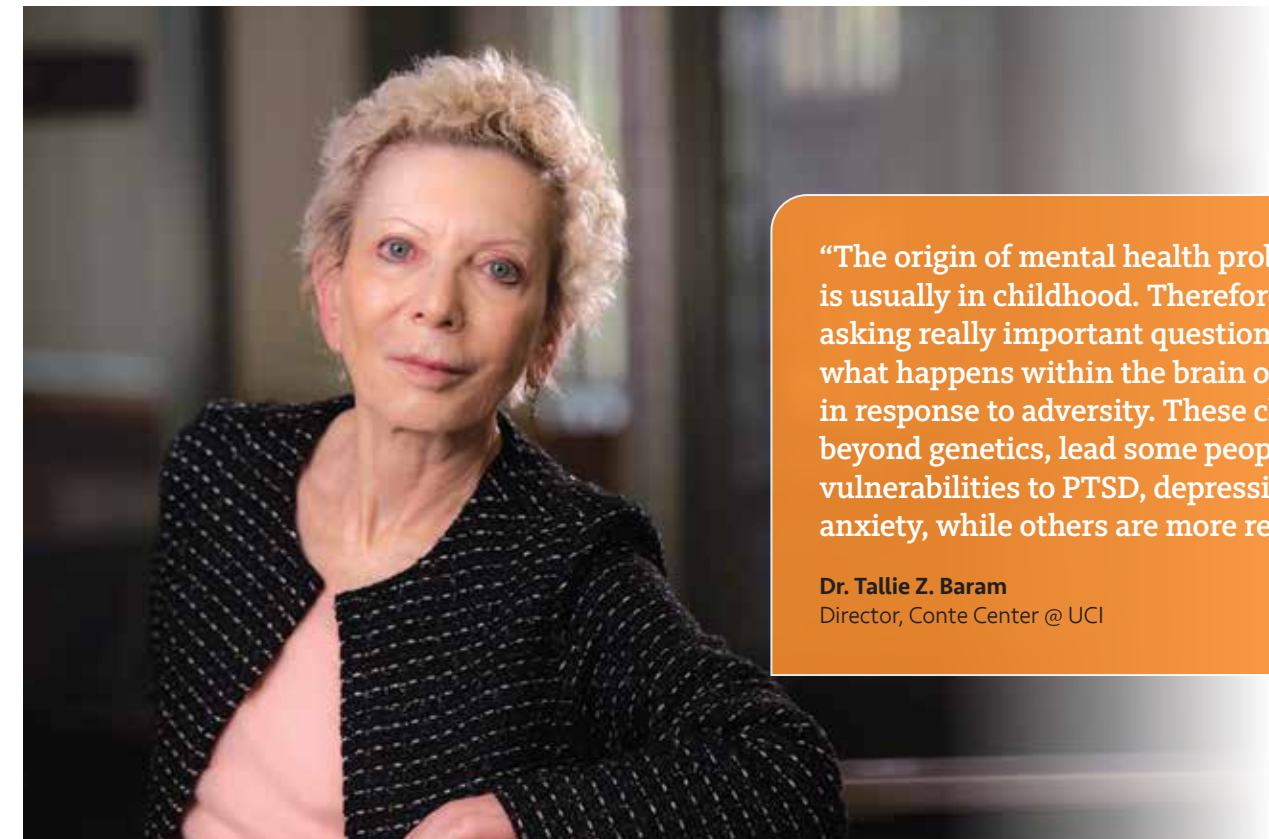
Baram’s research has shown that the complex circuitry of a child’s brain is affected by unpredictable signals – which could mean not having a stable routine, a parent frequently interrupting interactions with the child to check the phone, or a parent having volatile outbursts. In addition to studying infants and children, Conte Center researchers use sophisticated imaging tools to look into the brains of mice and rats – whose genetics and environmental factors can be controlled in a lab – and then corroborate their findings in people.

### Understanding Early Roots

Because three-quarters of adults with mental illness began experiencing symptoms before the age of 24, understanding the early-life origins of mental disorders is key. One of the most tantalizing questions researchers are pursuing: What factors help protect young people from or make them more susceptible to future mental health problems?

Dr. Tallie Z. Baram, the Danette Shepard Professor of Neurological Sciences, oversees \$25 million in research funding from the National Institute of Mental Health as director of the Conte Center @ UCI. Described by those who work there as an “intellectual playhouse,” the center brings together neurobiologists, epigeneticists, psychologists, molecular biologists and clinicians, as well as biostatisticians and computer scientists, to study how the brain evolves and changes as a result of adverse early-life experiences – beginning inside the womb and throughout childhood, adolescence and young adulthood.

“Genetics plays a major role in who we are and how we function, but genetics is not fate,” Baram says. “What happens to us early in life is profound because this time is an especially sensitive period for the brain.”



**“The origin of mental health problems is usually in childhood. Therefore, we’re asking really important questions about what happens within the brain of a child in response to adversity. These changes, beyond genetics, lead some people to vulnerabilities to PTSD, depression and anxiety, while others are more resilient.”**

**Dr. Tallie Z. Baram**  
Director, Conte Center @ UCI



**“Well-being absolutely includes mental as well as physical health. But with mental health, there’s still a great deal of work to be done to eliminate the stigma and shame around it. You would never dismiss a person with a heart problem or blame them for having an arrhythmia.”**

**Dr. Steve Goldstein**  
UCI vice chancellor for health affairs

of Medicine’s Train New Trainers fellowship. After completing the yearlong program, participants receive ongoing mentorship from UCI faculty and are expected to help educate other professionals in their communities to improve mental healthcare.

“Sixty-five percent of mental healthcare is delivered in the primary care setting,” says Dr. Robert McCarron, who directs the TNT program and serves as assistant dean of continuing medical education. “These primary care doctors are finding themselves spending a big part of every day working with patients who have substance abuse or psychiatric issues, but they often get suboptimal psychiatry training during their residencies.”

The fellowship recently received \$10 million from the state to train more than 600 seasoned primary care doctors, mostly from California, over the next five years.



**1 in 9** adults experience regular feelings of worry, nervousness or anxiety.

development may have created significant setbacks, says Jessica Borelli, UCI associate professor of psychological science, who runs a therapy center in Newport Beach. And school reopenings generated an entirely new crop of issues, ranging from teen angst about returning to class to toddlers experiencing severe separation anxiety because they’d never been away from their parents.

“Without a doubt, we’re facing a huge increase in demand for mental health services like nothing I’ve ever seen in my career before,” Borelli says.

Even as society moves back to a greater sense of normalcy, experts warn that the mental health challenges will take longer to return to pre-pandemic levels.

“The kids in this country and around the world have lost a year, and in a child’s life, there’s so much growth in a year – not just academic but also social and emotional,” Joshi says. “I don’t think this is going to subside anytime soon. The mental health pandemic continues alongside the COVID-19 pandemic, and the psychological effects might last much longer.”

### On the Frontlines

The first healthcare worker to encounter a patient grappling with a mental health problem is usually not a psychiatrist like Joshi or psychologist like Borelli. It’s often a nurse, family physician or emergency room doctor.

“People with mental health challenges present to every part of the healthcare ecosystem,” Goldstein says. “So we need to have people cross-trained to communicate well, recognize various aspects of mental health, and know how to embrace and help someone in need.”

To that end, more than 500 primary care doctors from across the country have been taught to better recognize and treat behavioral health issues through the UCI School

### Taking on Depression

UCI has received a \$55 million philanthropic bequest to create a new center for depression research. Says Dr. Steve Goldstein, UCI’s vice chancellor for health affairs: “Thanks to the focused investment in depression research that Audrey Steele Burnand has made, UCI will be able to generate research advances across the spectrum – from better understanding the common type of depression we all have some experience with to treating the most recalcitrant and extreme cases.” Story on page 26.

In this way, they found that unpredictable parenting impacts a baby's brain circuitry. As the neuroscience saying goes, "Neurons that fire together wire together," and for babies, predictable environments allow the neurons of pleasure to fuse together. Think, for example, of how a smile sweeps across a baby's face when an adult repeatedly brings out a familiar toy, puts it in the same place, and repeats the same silly sounds and motions with it. Later in life, strong and well-wired pleasure circuits that the baby's brain built play a role in resilience to depression, anxiety, post-traumatic stress disorder and, potentially, addiction.

The upheaval that COVID-19 creates within families has provided a rare opportunity to see the effects of predictability on children's mental health within a short period of time. In a study cited in the U.S. surgeon

**Almost half of the 8.2 million adults with schizophrenia or severe bipolar disorder are untreated.**

general's mental health advisory, Baram's team found that maintaining structured, predictable family routines amid the turmoil of working from home and the stress of the pandemic significantly protected preschool-age children from the negative mental health effects of the pandemic.

The state of California recently granted Baram \$2.9 million to launch a study of the mental health effects of unpredictability in 100,000 Orange County children, in collaboration with CHOC Children's Hospital and Chapman University. The researchers will also look for biomarkers that could predict how resilient or vulnerable a child may be to adversity.

**"It's important to work with school-based mental health services and with faith-based communities to raise awareness of mental health issues among our diverse population. Advocacy is a big part of what we do."**

**Dr. Paramjit Joshi**  
Interim chair, Department of Psychiatry & Human Behavior,  
UCI School of Medicine



**"We tend to think older adults are afflicted by medical conditions, changing lifestyles related to retirement, and the death of family and friends. But with aging comes wisdom and striking emotional resilience for many."**

**Dr. David Sultzer**  
Clinical research director, UCI MIND

**An Ever-Changing Brain**

Early life is highly impactful, but the brain is ever-changing and susceptible to significant stressors. For example, living in a pandemic has left many people feeling mentally fuzzy – and it isn't a figment of their imagination.

"Our brains are really, really good at dealing with acute stressors such as a deadline or test. But chronic levels of stress may have long-lasting effects on the brain," says Michael Yassa, UCI professor of neurobiology & behavior and director of UCI's Center for the Neurobiology of Learning and Memory.

When the brain is exposed to stress over long periods of time, cortisol – the hormone that famously fuels our flight-or-fight response – can rewire the brain's circuitry, decreasing interaction among brain cells and lessening plasticity, making it harder for us to communicate and learn new things.

"All of this leads to people feeling like their cognition is impaired, including memory loss and attention deficit – all those things we're hearing people experience during

**Black and Hispanic adults are half as likely to receive mental health treatment as white adults.**

**61% of people with mood disorders say others treat them differently after learning of their diagnosis.**

the pandemic," Yassa says. "Raising our baseline anxiety has real and serious consequences for the brain."

The good news is that as the stress of the pandemic gradually recedes and many people hit reset on their work and life priorities, this mental fog will lift, he says.

But in extreme circumstances, the adult brain can be rewired in more lasting ways. New research by Yassa and Baram focuses on the changes in brains of mothers who have lost a child. The team members identified, for the first time, what they believe is the biological basis of maternal grief that persists for months and years after a child's death and impacts hundreds of thousands of mothers in the U.S. and millions around the world.

They found that the brain circuitry of grieving mothers was forever changed, especially in networks involving a less understood area of the brain called the paraventricular thalamus. This region may play a role in the persistence of stress in both adults and children.

"The PVT seems to hold onto memories of an adverse experience," Yassa says. "And in the case of maternal grief, it can rewire the adult brain in an enduring fashion."

## Anxiety and Alzheimer's

A surprise was how well many older adults have fared emotionally during the pandemic, despite isolation and the physical health threat that COVID-19 poses for the elderly.

"Older adults were able to fit the pandemic into their more global world view, mobilizing their compassion and resilience, and perhaps adapt in a way that younger adults may be less able to," says Dr. David Sultzer, director of the clinical core at the federally designated Alzheimer's Disease Research Center housed at UCI's Institute for Memory Impairments and Neurological Disorders.

Sultzer and colleagues are exploring mental health in later life, untangling the connection between Alzheimer's disease and mood disorders. While it's common for people with dementia to feel depressed or anxious, those states may also be early signs of the disease.

"Late-life symptoms like apathy, anxiety and depression appear to be related to the development of Alzheimer's and are probably a fundamental part of the illness process," Sultzer says.

While this doesn't mean that anyone who feels depressed or anxious in later life will go on to develop



**1 in 13** adults have a substance abuse disorder.

Alzheimer's, the relationship intrigues him. Unraveling the link between mood disorders and Alzheimer's may provide additional opportunities to intervene in the disease, which 12.7 million Americans will be living with by 2050, according to the Alzheimer's Association.

## Hopeful Horizons

The driving hope behind this wide-ranging mental health research is that it will prevent and alleviate suffering.

Baram and colleagues are studying thousands of veterans of the Iraq and Afghanistan wars to look for patterns in early-life experiences that could predict which soldiers are most vulnerable to PTSD. Someday, those at highest risk for developing the disorder could be identified before being deployed to combat situations.

Additionally, Conte Center researchers have successfully rewired neural networks in mice, using a benign virus



"Mental health as a public health issue extends beyond COVID-19. Mental health is public health. The psychological fallout from COVID-19 is simply the latest illustration of that."

**Bernadette Boden-Albala**  
Director, UCI Program in Public Health

carrying a special gene that's sensitive to light and then shining a light to activate or deactivate the cells. Baram envisions a future in which it might be possible to employ such a technique to safely repair the pleasure circuits in people's brains, relieving many symptoms of common mental illnesses.

Peering inside brains to understand the mechanisms of mental health at the neural level opens new opportunities for treatment and also to destigmatize disorders.

"We need to educate our parents, community and students that not only is mental illness treatable, but there's a biology behind it that makes it on par with any other physical condition," Yassa says. "It's all in your head? Yes, those are brain cells and connections, and that's physical, just like diabetes, arthritis or anything else."

As anyone who has persevered through the challenges of the early 2020s can attest, mental health is essential to overall well-being.

"We can't separate the head from the rest of the body," Joshi says. "Taking care of the whole patient means truly valuing their mental health as well as their physical health." ●

UCI has been awarded **\$55 million** in state and federal mental health research funding over the past five years.

Infographic sources: Centers for Disease Control and Prevention, Mental Health America, Treatment Advocacy Center, UCI Office of Research

## A Therapist's Advice for Parents

**Jessica Borelli** is an associate professor of psychological science at UCI and a clinical psychologist with a practice in Newport Beach. As advocacy groups and the U.S. surgeon general sound the alarm about the rise in mental health problems among children and adolescents, Borelli offers advice for parents.

"The worst thing is a kid who's struggling on their own, and the parent knows nothing about it," she says. "There can be years of hurt and pain that could have been addressed earlier, but the child just didn't realize the parent was available to help them."

Kids are inherently afraid of violating their parents' expectations. Borelli encourages parents to tell their children explicitly, "There is nothing you could feel, think or do that would make me not love you. You can tell me anything."

Don't assume your kids know you're there for them, she says; they need to be reminded frequently, "I'm here to listen."

Borelli urges parents to create space in their busy lives to talk about feelings openly – when no one is on their phone.

When your child expresses something difficult, she says, reinforce that they did the right thing by telling you, perhaps by responding, "I'm so glad you shared this with me. There's no feeling that's too big to handle together."

Parents can help their children navigate most of the challenges of growing up, but if you suspect serious mental health issues, seek professional assistance. Borelli says, "The kids who are at greatest risk are the ones who are suffering in silence, whose parents have no insight into what's going on with them."

"The best kind of discoveries are the ones that are a total surprise. Our most hard-hitting, high-impact work is when we find something completely different from what we expected."

**Michael Yassa**  
Director, UCI Center for the Neurobiology of Learning and Memory



# Helping O.C. Feel Better

By Christine Byrd

**W**hen in the throes of a severe mental health crisis, many people end up in an emergency room or a jail cell. Neither is ideal. But that's just one of many ways a fragmented mental healthcare system can cause additional suffering for those experiencing addiction or psychiatric disorders.

To create a more comprehensive approach to mental healthcare, Orange County leaders established Be Well OC several years ago. The nonprofit connects more than 100 public services, community organizations and healthcare providers – including UCI – committed to building a better mental health safety net.

“Be Well OC is a remarkably innovative countywide collaboration to take care of people with mental health challenges in the community – from homeless individuals to people who need acute intervention,” says Dr. Steve Goldstein, UCI's vice chancellor for health affairs.

In 2020, Be Well OC's first facility opened, thanks to \$16.6 million in funding from the O.C. Board of Supervisors and additional investments from local insurance and healthcare providers. Located in Orange, just a stone's throw from UCI Medical Center, the 60,000-square-foot



building includes a safe place for patients to detox or get sober and a short-term residential recovery unit for those who need to stay a few weeks, as well as crisis stabilization services. Be Well OC fills an important gap of “in between” care for individuals not acutely ill enough to require hospitalization but not stable enough for outpatient treatment.

“Be Well OC is a stunningly beautiful and healing environment that can better serve a lot of patients who don't necessarily need to be in the emergency room,” says Dr. Paramjit Joshi, interim chair of the Department of Psychiatry & Human Behavior in UCI's School of Medicine.

“Our services are complementary, so together we can provide a better continuum of mental healthcare.”

She's working with Be Well OC on another planned facility in Irvine, which has already received \$5 million in funding from the state of California.

“We believe that Be Well OC will not only be a great resource for the county, but in fact will be seen as a model for the entire country,” said O.C. Board of Supervisors Chairman Andrew Do at a press conference last August.

Frontline mental healthcare providers at UCI agree.

“No one else in California is doing this. It's not just unique; it's truly transformational,” says Dr. Robert McCarron, a UCI professor of psychiatry & human behavior who also volunteers as the medical & community education director for Be Well OC.

One of the distinguishing features of the nonprofit is that it offers services to any local residents, regardless



of what health insurance they have – or don't have. McCarron points out that this can be especially critical for the most vulnerable and underserved community members.

In addition to building wellness hubs around the county to directly provide mental healthcare, Be Well OC promotes initiatives to reduce the stigma around mental illness, educate first responders who encounter people in crisis, and close treatment gaps by sharing data across agencies. McCarron and other UCI faculty are actively involved in community education and outreach efforts and anticipate ongoing collaboration with the Irvine facility.

“Be Well OC has created an exemplary partnership between the academic and public sectors that ultimately helps elevate mental healthcare for our entire community,” Goldstein says. “I'm looking forward to what's ahead.” ●





# Taking on Depression

*Monumental \$55 million estate gift to UCI will create one of the largest research centers in the country tackling the pervasive mental health issue*

By Cathy Lawhon

UCI researchers and clinicians will have an unparalleled opportunity to make transformational advances in the study and treatment of depression, thanks to a \$55 million gift from the estate of Audrey Steele Burnand.

A longtime UCI supporter, Burnand died in June 2020 at age 98. Her legacy gift for depression research is one of the largest ever to a university specifically targeted at chronically underfunded research into the debilitating disease. As one of the largest research gifts in UCI history, it will create and sustain the Noel Drury M.D. Depression Research Center. Drury was an assistant clinical professor of psychiatry at UCI from 1987 to 1990.

"This is truly a once-in-a-generation opportunity to establish a world-class depression research center," says Pramod Khargonekar, UCI vice chancellor for research. "We will use some of the gift over the next year for recruiting new faculty and funding pilot projects, which, in turn, will grow into externally funded projects. We expect this gift will multiply many times over because of the potential for funding from the National Institutes of Health, the private sector and philanthropic organizations that support research in myriad aspects of depression."

The need could not be clearer. According to the American Psychiatric Association, depression affects an estimated 1 in 15 adults in any given year, and 1 in 6 people will experience depression at some point in life. Depression can occur at any age but often first appears during the late teens to mid-20s. Women are more

likely than men to be affected. Some studies show that one-third of U.S. women will undergo a major depressive episode.

UCI leaders are in the very early stages of determining the strategic focus and operational details of what will commonly be called the Drury Depression Research Center. Because of the depth and breadth of depression research across many disciplines on campus, the research unit will be established under the Office of Research, rather than in a specific school.

The committee charting the center's future is led by Frank LaFerla, dean of the School of Biological Sciences, and includes Khargonekar and Dr. Michael J. Stamos, dean of the School of Medicine.

In an early planning meeting, the committee benefited from an informal discussion with Dr. Joshua Gordon, director of the National Institute of Mental Health. Gordon shared his perspective on key challenges in the field and the potential for UCI's consequential research and therapy contributions.

"We only get one opportunity to build something," LaFerla says, "and we want to do it right. There's no sense in diving into something where other universities are already way ahead of us, so we're looking at depression across the lifespan and probably tackling it from a biological, medical and engineering point of view. Devices might play a role in this."

Stamos is excited about the promise of patient benefits.



Pramod Khargonekar, UCI vice chancellor for research

“The center has to be clinically relevant,” he says. “Our objective will be to explore a full spectrum of research – from basic science to translational studies to clinical trials. I believe we have the ability to do this. At the end of the day, we want to take great care of patients.”

“One advantage we have over many places is our rich relationship between the schools of medicine and engineering, which is very strong,” Stamos adds. “That gives us a unique foundation to study areas that are not focused on by other researchers.”

Strategic faculty hires will lay the groundwork for success. Stamos believes the center’s potential will help him attract a new Department of Psychiatry & Human Behavior chair with superstar credentials who “understands the significance of such a gift.”

Once committee members settle on the overall vision, they plan to enact a hiring model that promotes collaborative, team-based research. Khargonekar says it could take at least a year to complete faculty hires.

“Right now, we’re talking to a lot of people as we do our homework,” he says. “As we establish a center in the course of the next year, we’ll probably take all of that time – and possibly more – to bring together new faculty and existing faculty.”

UCI is distinctively positioned to explore innovative research in a wide variety of areas – from biology and the health sciences to engineering and the social sciences. The campus has well-established and influential centers for neurodegenerative diseases (the Institute for Memory Impairments and Neurological Disorders), behavior and learning (the Center for the Neurobiology of Learning

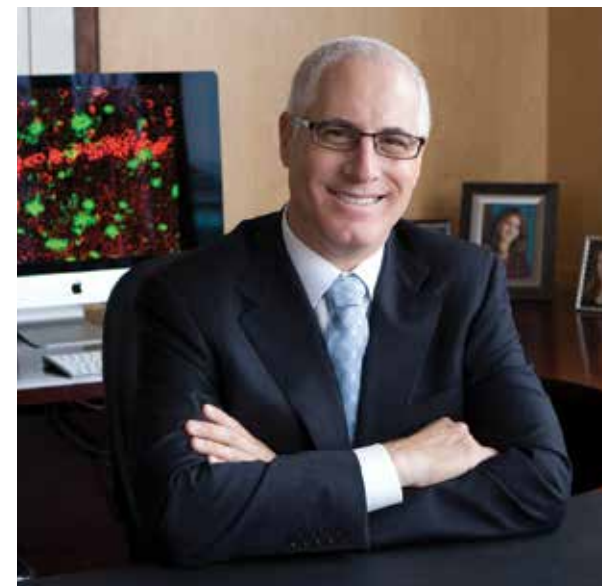
and Memory) and integrative health (the Susan Samueli Integrative Health Institute).

The UCI Beall Applied Innovation center will also provide expertise in translational research – taking discoveries and products from bench to bedside and making them widely available to the public.

“We have a very rich history of translational research in psychiatry,” Stamos says. “Some might say commercialization is just an economic interest. Not true. It’s the only way you can make a difference for patients worldwide. Otherwise, there’s no impact.”

LaFerla, who led discussions with Burnand for a variety of gifts dating back 10 years, expects this gift to “catapult UCI to the forefront on one of the grand challenges facing us. We could be positioned to uncover the underpinnings that lead to depression.”

“UCI’s emphasis on interdisciplinary and multidisciplinary research makes it an ideal university for studying this complex problem,” LaFerla says. “It’s not going to be solved by a single discipline. There’s the biological basis, clinical aspects, societal impacts and services, as well as public health and epidemiological issues. We have it all.”



Frank LaFerla, UCI dean of the School of Biological Sciences

**“We only get one opportunity to build something, and we want to do it right. There’s no sense in diving into something where other universities are already way ahead of us, so we’re looking at depression across the lifespan and probably tackling it from a biological, medical and engineering point of view.”**

**“The center has to be clinically relevant. Our objective will be to explore a full spectrum of research – from basic science to translational studies to clinical trials. I believe we have the ability to do this. At the end of the day, we want to take great care of patients.”**

Burnand was a well-known Newport Beach philanthropist who contributed to the arts, education, environmental conservation, and scientific and medical research at institutions throughout Southern California. Her parents, Harry and Grace Steele, were also respected philanthropists who gave generously to conservation organizations. The family estate derived from U.S. Electrical Motors, a company founded by Harry Steele that later merged with the Fortune 500 company Emerson Electric Co. Burnand’s father-in-law was A.A. Burnand Jr., who played a key role in the development of Borrego Springs in the first part of the 20<sup>th</sup> century.

Audrey Steele Burnand’s support of UCI began in the biological

sciences, helping to fund Alzheimer’s disease research at UCI MIND and creating the Steele/Burnand Anza-Borrego Desert Research Center. As part of this most recent estate gift to the university – which totaled almost \$58 million – Burnand also left an additional \$2.6 million that will be used to fund an endowment for the desert center, located in Borrego Springs. UCI manages the 78-acre facility, which is part of the University of California Natural Reserve System. A rich site for research and environmental learning, it’s available to students, scientists and the community.

“Like many members of her family, Mrs. Burnand was dedicated to improving the lives of others, starting with her immediate

community,” LaFerla says. “We believe she felt an affinity with UCI through our identity as a world-class institution that remains firmly rooted and engaged locally.”

Adds Khargonekar: “I am extremely enthusiastic as we envision and build out the Drury Depression Research Center. I believe it will be a great asset to the University of California, Irvine, as well as to the people who are adversely impacted by this terrible disease. I look forward to many years of high-quality, high-impact research and clinical advances emanating from this new research center.” ●



Dr. Michael J. Stamos, dean of UCI’s School of Medicine

## U.S. Depression Incidence

**5%** of adults 18 and over report regular feelings of depression.

**11%** of emergency department visits indicate depression on the medical record.

**21%** of adults 18 to 29 have experienced symptoms of depression, followed by **18%** of those 45 and over, and **17%** of those 30 to 44.

**13%** of adults 18 and over surveyed between 2015 and 2018 had used antidepressants in the past 30 days. Use was highest among non-Hispanic white women (**17%**) and adults with at least some college education (**14%**).

**11%** of physician office visits list depression on the medical record.

Source: Centers for Disease Control and Prevention





# Caring for Anteaters

*Amid pandemic challenges, UCI's mental health and wellness guardians work responsively – and passionately – to serve the campus community*

By Rosemary McClure | Photos by Steve Zylus

Two cheerful beagles and a curly brown labradoodle were holding court on UCI's Student Center terrace. More than 300 people stood in a line nearby, patiently waiting for their turn to cuddle the pups.

The dogs – “Thera Puppies” – were advertised in a campus tweet: “Come and destress with therapy dogs! Snacks and stress balls will be provided courtesy of the Student Support and Advocacy Commission.” Three other organizations were involved too: the Center for Student Wellness & Health Promotion, the Counseling Center, and UCI Campus Assault Resources & Education.

It turned into a banner day in December just before finals with a bright blue sky and warm temperatures. The stress balls and snacks were popular, although they ran out, despite the 350 goodie bags provided. And the pups made everyone happy, but they accommodated so many eager students that they needed puppy rest breaks themselves.

“I felt like the students really needed an event like this,” says senior Norah Tabsh, the student support and advocacy commissioner. The pandemic, she adds, has been stressful and traumatic.

On college campuses across the nation, students are grappling with a mental health crisis created by the COVID-19 pandemic. They've endured shuttered campuses, online learning, the illness or death of loved ones, and – in the case of hospital employees as well as students – increased demand to work long hours coupled with the constant threat of exposure to disease.

In December 2021, U.S. Surgeon General Dr. Vivek Murthy issued an emergency advisory.

“Even before the pandemic, an alarming number of young people struggled with feelings of helplessness, depression, and thoughts of suicide – and rates have increased over the past decade,” Murthy wrote. “The COVID-19 pandemic further altered their experiences at home, school and in the community, and the effect on their mental health has been devastating. The future wellbeing of our country depends on how we support and invest in the next generation.”



Marcelle Hayashida, associate vice chancellor for wellness, health & counseling services

UCI's Marcelle Hayashida spends much of her time immersed in promoting mental health and wellness on campus. Associate vice chancellor for wellness, health & counseling services, she oversees eight offices, including the Student Health Center, the Counseling Center, UCI CARE and the Disability Services Center.

"What we learned during the pandemic is that there are a lot of other things that go into mental health beyond depression, anxiety and seeing a psychologist," Hayashida says. "What are you feeding yourself? How are you sleeping? What do your social connections look like? Do you feel included? What support are we offering for students of color, for low-income students, for undocumented students?"

She adds: "We've learned a lot about all of these different threads that we need to weave together to support student mental health."

Being nimble and receptive to change has been key. "We've worked hard to provide first-in-class, flexible, responsive support services to our students despite the challenges the pandemic has posed," Hayashida says. "Our team members care passionately and understand the larger mission we're working toward."

And remote services have been a game-changer and are greatly utilized, she says: "With virtual therapy, students can interact with a therapist regardless of where they are in California."

That doesn't mean it's been easy. Before the pandemic struck, virtual resources were very limited, explains Frances Diaz, director of UCI's Counseling Center. She notes that if she had been asked about providing virtual services in November 2019, it would have been

unimaginable. But then COVID-19 hit and the Counseling Center, she says, "transitioned from in-person to virtual services within two days."

### Nationwide Challenges

Universities across the country were all at once grappling with the same issues. A 2020 national survey of college students found that nearly 40 percent experienced depression. One in 3 reported having had anxiety, and 1 in 7 said they'd thought about suicide in the past year. In a 2020 survey of directors of college counseling centers, almost 90 percent reported that demand for their services had gone up in the previous year.

"The struggles are real and intensified," says Dr. Vivien Chan, chief of psychiatry and mental health services at UCI's Student Health Center. But, she adds, "there are many levels of student support and care delivery available, ranging from crises to longitudinal mental health treatment." One newer tool, she notes, is therapy assisted online self-help, sponsored by the UCI Counseling Center and the University of California Office of the President. "This 24/7 on-demand resource is free to registered students and offers tools, education and support for common emotional and behavioral concerns."

Through that long year and a half – from shutdown to the return to campus life in fall 2021 (before the advent of the omicron variant of COVID-19) – the UCI counseling system worked to make changes. When students returned, they came back to a full range of services that also included accessibility improvements such as the provision of private spaces they could use for virtual sessions with providers.

The pandemic did put an extra strain on students' coping skills, says Doug Everhart, director of the Center for Student Wellness & Health Promotion. "People are stressed," he says, "but all in all, most are doing well, despite all of the challenges: isolation, remote internet, environmental issues, finances and technical support problems."

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**“What we learned during the pandemic is that there are a lot of other things that go into mental health beyond depression, anxiety and seeing a psychologist.”**

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Anteaters enjoy some fresh air as they hike through the UCI Ecological Preserve during a Wednesday Wellness Walk in December that incorporated mindfulness, meditation and ecological education and was sponsored by UCI Student Wellness & Health Promotion and Campus Recreation.



Chad Lefteris, CEO of UCI Health

In general, Everhart says, society does not do a good job ingraining coping strategies. That's why UCI mentors students in this way, he notes: "If we can help people improve their physical health, eat well, get outdoors and learn mindfulness techniques, we can help them improve their coping skills."

Two successful programs have been the Step Up! UCI bystander intervention training and Behind Happy Faces, which encourages and empowers students to share and support each other. The goal for both: learning that good mental health helps you more fully enjoy life and cope with its challenges, while poor mental health, on the other hand, may result in feeling unhappy, thinking unclearly or being overwhelmed by stressful situations.

Says Diaz: "Students deserve a huge shoutout for resilience during these times."

### Supporting Medical Personnel

Of course, students aren't the only ones greatly affected by the pandemic. Even before COVID-19, more adults were experiencing mental illness, particularly anxiety and depression. According to the nonprofit Mental Health America, in 2019, just prior to the pandemic, almost 20 percent of Americans – nearly 50 million – reported having a mental illness. Over half of adults with mental illness do not receive treatment, the organization notes.

As coordinator of faculty and staff support services, psychologist Negar Shekarabi works with UCI employees suffering serious stress or other mental issues. In some cases, she says, they're just burned out.

Support is offered for a wide range of issues, Shekarabi says. Among them are work-related stress, relationship issues, family problems, depression, anxiety and other emotional problems, grief and loss, and alcohol/drug and other addictions. Referrals are made to mental health services within faculty and staff health plans, as well as to community resources.

While much of the country went into crisis mode in 2020, America's frontline workers have been among the hardest hit. UCI's frontline workers have been under incredible pressure, with many fighting cases of post-traumatic stress disorder, burnout and other crisis-related employee concerns.

Chad Lefteris, CEO of UCI Health, discussed the issue during an *Orange County Business Journal* interview with local healthcare leaders that was published in April 2021. He was asked: "How do we help our people heal mentally, physically, and financially?"

Lefteris responded: "UCI Health recognized even before the pandemic hit the US that supporting its frontline caregivers and co-workers would be a key to managing this unprecedented public health crisis. We created a food pantry and free childcare program to assist employees who were spending long hours at the hospital."

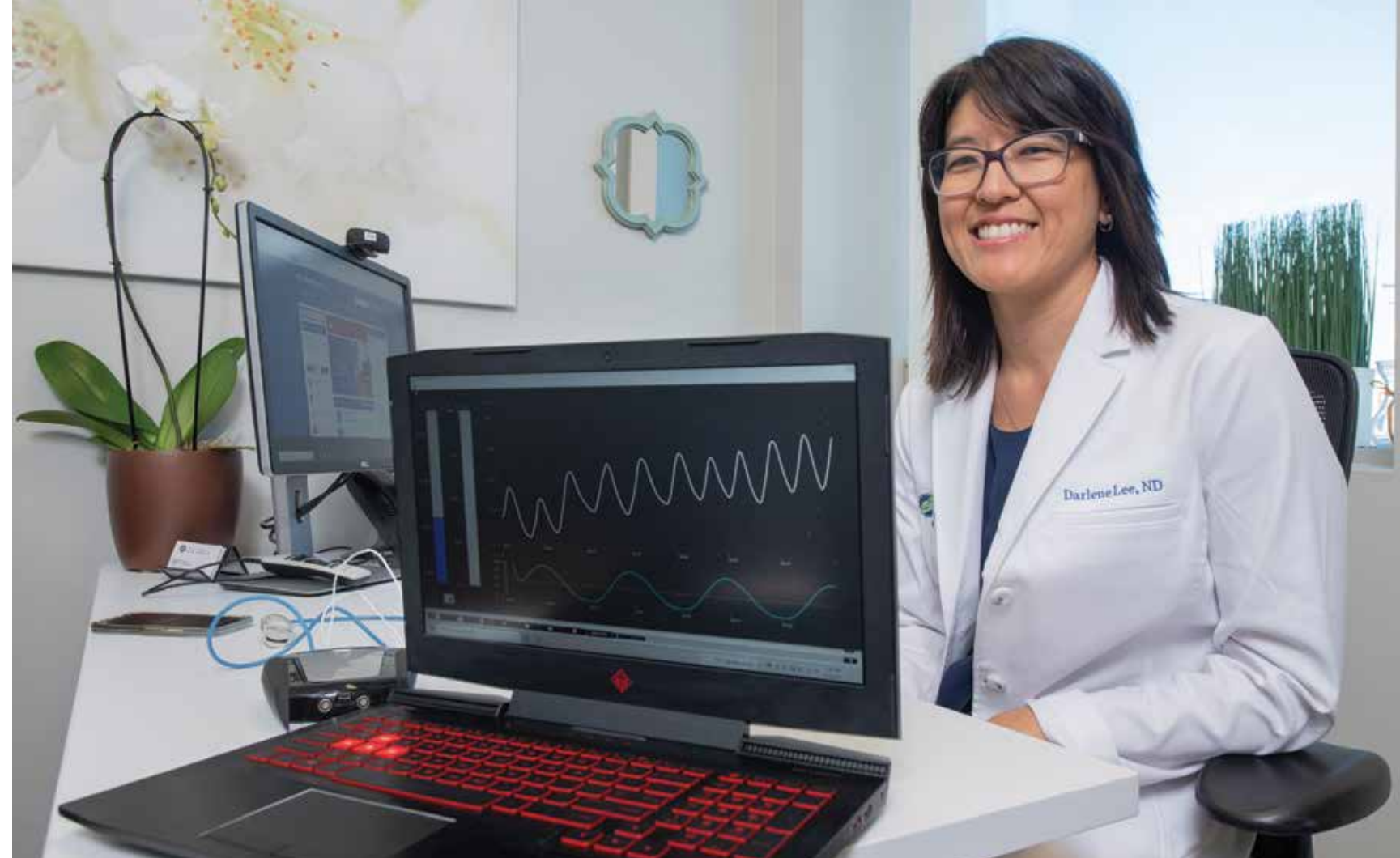
Also jumping into action, he added, was the Susan Samueli Integrative Health Institute, which began providing regular programs designed to reduce mental and physical stress in individuals and care teams. (See story on opposite page.)

And, Lefteris said, "as the demand for inpatient space grew at the height of the pandemic, so too did our commitment to creating places of rest for providers."

"Our longstanding relationship with the Schwartz Center for Compassionate Healthcare, in which health-care workers address the stress of their jobs, has focused on helping providers cope with their COVID-related experiences," he continued. "In addition, the UCI human resources teams have [great] offerings to support mental and physical health and wellness, as well as financial support opportunities."

The bottom line, according to Hayashida, "is that we have to be there for the staff. In order to be there for the students, we also need to be here for the staff."

Meanwhile, students are taking as much in stride as they can. Sometimes that means cuddling a warm puppy. During finals week, the Center for Student Wellness & Health Promotion had its own event, called a "De-Stress Fest." This time, more than 550 students showed up to pet a pup and consume healthy snacks and beverages. ●



## A Path to Mind-Body Wellness

*Popular well-being initiative born out of the pandemic for frontline workers at UCI is replicated for faculty and staff across all 10 UC campuses*

By Rosemary McClure

We were teetering on the edge of virtual sleep success – four drowsy women and a man, all hoping desperately that the UCI Zoom session we were taking would help us toddle off to slumberland the next time we hit the sheets.

Our mentor on this afternoon call was naturopathic doctor Rowena Daly of the campus's Susan Samueli Integrative Health Institute, where conventional medicine blends with complementary therapies to promote healthier living.

"There are things we can do on a day-to-day basis to improve our sleep health," Daly told us. I could see others on the Zoom screen lean forward in anticipation of the sleep tips she was about to relay.

The information couldn't come too soon for those participating, most of whom were health workers at UCI. Sleep is critical for mental health, Daly explained, noting that both lack of sleep and poor quality of sleep can cause or worsen anxiety, depression and concentration issues.

The 30-minute session is part of a well-being initiative that's providing support services for the university's caregivers and co-workers. The program, which has been utilized by almost 7,000 people since COVID-19 came on the scene, has been so successful that it's been expanded to all 10 University of California campuses.

Above: Darlene Lee, a naturopathic doctor at the Susan Samueli Integrative Health Institute

In addition to Sleep 101, Zoom sessions focus on acupressure, nutrition, mindfulness and meditation, massage, yoga and stress management strategies.

The UCI Wellbeing Initiative was developed at the Susan Samueli Integrative Health Institute shortly after the pandemic struck.

“At the beginning, we were just trying to figure out how we could use our tools and contribute,” explains Darlene Lee, a naturopathic doctor at SSIHI. “Our frontline healthcare workers were under an enormous amount of stress.”

The answer: Make stress management tools readily available to them. Lee and colleagues at SSIHI got busy, quickly developing a research project based on a remote biofeedback program. The project, financed by the UCI Joint Research Fund, moved into the field.

“We started small, with 47 people: med students, residents, fellows, nursing students – people who are very prone to stress and burnout,” Lee says. “People saw the words ‘stress management’ in the application and were immediately interested.”

In the trial, frontline workers at UCI Medical Center received a series of five 30-minute telemedicine sessions or identical in-person sessions. While analyses of the data is continuing, researchers have found that the brief, remote biofeedback sessions improved self-reported depression, anxiety and stress levels.

Telemedicine sessions are effective, Lee says, demonstrating that programs don’t need to be in person to be advantageous. That’s good news for first responders and caregivers who face future pandemics/surges, natural disasters and other emergencies.

“Long-range, there are a lot of implications for how we support healthcare workers,” Lee says. “We can use telemedicine to offer the tools we use in integrative medicine and have them, hopefully, be just as effective as in person. Giving people more access to these tools will

help them weather the pandemic storm of stress.”

The program reflects what the Susan Samueli Integrative Health Institute is at its core, combining evidence-based research with well-being methods, says institute director Dr. Shaista Malik, UCI’s associate vice chancellor for integrative health.

“It’s part of our mission at SSIHI to educate our community on well-being practices and to provide resources that assist them with improving their personal health,” she says, noting that the program has received positive feedback from participating UCI staff and faculty members. “We are extremely grateful to be able to offer access to integrative health education sessions, one-on-one and group classes, information and consults as free resources to our UC community.”

I tuned into several sessions, getting a taste of managing stress through better nutrition, mindfulness and meditation, acupressure, yoga and, of course, Daly’s Sleep 101.

The first thing she asked us to consider was our sleep space: “Do you have comfortable pillows and sheets? What do you use your bed for – as a jungle gym for the kids or a giant laundry basket?”

We covered the negative effects that stress, hectic schedules, medications, caffeine, alcohol, hormonal changes, screen exposure and preexisting health conditions can have on sleep quality.

“How do you improve your sleep?” Daly asked. “Prioritize it! Stick to a consistent sleep schedule, work to reduce your stress in the hours before bed, and don’t ignore changes to your sleep quality that might suggest a deeper health issue.”

Some participants asked about waking frequently during the night, which Daly said can be common. She cited several factors that might contribute to this – a frequent one being dysregulation of blood sugar. One way to help can be to focus on protein-rich evening snacks

rather than the sugar-rich ones that many people gravitate toward later in the day.

A guided acupressure session piqued my interest, so I tuned in for a Zoom session with acupuncturist Heather Rice, another member of the SSIHI team. She appeared seated on a mountain patio surrounded by pine trees. The scene was serene and refreshing. Acupressure sessions are 30-minute one-on-one discussions that utilize manual pressure – fingers, palms, elbows or feet – instead of acupuncture needles to promote health by addressing anxiety, stress, grief, pain, fatigue and immune support.

I told Rice my stress points were in my shoulders and neck, a common complaint for computer users. She suggested a neck extension stretch – sitting up straight and bringing my shoulders up to my ears, then exhaling while rolling my shoulders back, and finally reaching down toward the ground with my hands and looking up at the sky for 30 seconds. We progressed through several other stretches. I felt breezy and relaxed by the time we finished.

Learning how to chill out is the wellness initiative theme. All of the classes help people de-stress. Among them:

- Mindfulness sessions are livestreamed on Zoom and last 25 minutes. They give participants the opportunity to learn about meditation and mindfulness with the support of a group and an SSIHI practitioner. The training is also offered via a one-on-one phone call.
- Yoga and guided massage are covered in 25-minute one-on-one or hourlong group classes over Zoom.
- “Anxiety During Stressful Times” is a 30-minute Zoom session that helps participants become more grounded and less anxious.
- “Healthy Nutrition in Times of Stress” is a 30-minute Zoom session with a registered dietitian who will discuss practical methods to maintain healthy eating patterns during periods of stress, anxiety and fatigue.
- Livestreamed sessions on biofeedback and relaxation techniques feature up to 10 participants and focus on calming the mind and body.

Faculty and staff members are boosters. Laura Narvaez, assistant clinical research coordinator in the Sue & Bill Gross School of Nursing, recommends that “all UCI employees sign up for at least one session because it’s helpful for stress management, it’s very accessible and you get to interact with others in real time, which is fun.”

Nutrition was a plus for Dr. Maryam Rahimi, a UCI Health internist who “truly loved the visit I had with the nutritionist. She took the time to review my diet in detail. She helped me look at food in a different way, to become

more aware of hunger and fullness cues from my body and make better choices.”

And Regina Bolotin applauds the initiative because it motivated her to “live and be healthy.” A purchasing and reimbursements manager at The Henry Samueli School of Engineering, she was especially fond of the nutrition and acupressure segments.

SSIHI’s Lee, whose research has dovetailed with the well-being initiative, is looking forward to the future: “My hope is that we can offer these kinds of things to the wider community and get additional funding to make it happen for all.” ●



Dr. Nicole Reilly, mindfulness instructor at the Susan Samueli Integrative Health Institute

**While the UCI Wellbeing Initiative is limited to campus faculty and staff, the Susan Samueli Integrative Health Institute offers some free virtual classes to members of the community, including livestreamed meditation sessions and yoga therapy. For more info, go to:**

► [m.uci.edu/SSIHI\\_Meditation](https://m.uci.edu/SSIHI_Meditation)

► [m.uci.edu/SSIHI\\_Yoga](https://m.uci.edu/SSIHI_Yoga)

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**“Long-range, there are a lot of implications for how we support healthcare workers. We can use telemedicine to offer the tools we use in integrative medicine and have them, hopefully, be just as effective as in person. Giving people more access to these tools will help them weather the pandemic storm of stress.”**

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Steve Zylius / UCI

# Healers' Health

Three questions with Dr. Anju Hurria

**T**he admonition “Physician, heal thyself” is at least 2,000 years old, but it’s one that the medical profession still grapples with, according to Dr. Anju Hurria, who in July became the inaugural wellness officer at UCI’s Susan Samueli Integrative Health Institute.

The role essentially is that of organizational trouble-shooter and advocate for the mental and physical health of more than 10,000 faculty and staff in UCI’s Susan & Henry Samueli College of Health Sciences, which includes the schools of medicine, nursing, pharmacy & pharmaceutical sciences and the Program in Public Health as well as SSIHI.

Though wellness officers are becoming more common in the corporate world, Hurria says, there is nowhere they’re more needed than in the medical profession, where rates of job burnout, depression and even suicide far outstrip those in other occupations.

Her new job is one she’s prepared for, having previously

directed UCI’s medical student wellness program and, subsequently, its faculty wellness program (a role she continues now under the Samueli Institute).

Born in Brooklyn, New York, and raised in Orange County, Hurria realized while majoring in American literature at USC that psychiatry might better suit her passion for people’s stories and their outcomes. After earning an M.D. at the State University of New York in Syracuse, she served an adult psychiatry residency and child psychiatry fellowship at UC San Diego and was an attending physician there.

Hurria transferred in 2013 to UCI’s Department of Psychiatry & Human Behavior, where she split her time between organizational wellness and practicing child psychiatry. She and her surgeon husband, Adrian Din (who completed his medical residency at UCI in 2003), live on a ranch on the outskirts of Orange County where they care for 27 animals, many of them rescues.

## Can you explain what a wellness officer does and why it’s important that UCI has one serving its medical community?

The idea of a wellness officer is to help create a work culture where people thrive and feel that their mental and physical well-being is supported. Research shows that when you have a well culture in the medical profession, not only are employees happier and healthier, but it leads to better patient care. If you have physicians and nurses who don’t feel burned out, they’re able to provide more cautious and thoughtful care to patients.

It’s important to debunk this idea that healthcare providers are perfect and to remind them that we’re all susceptible to mental and physical health issues – that you are your own patient first and need to take care of yourself.

From students to medical professionals, we’ve found it’s important to have peer mentor programs, where they can talk with people who have experienced and survived what they’re going through, whether it’s depression, failing a test or losing a patient. Research shows how important it is for people to feel they have some autonomy over their work/life schedule. Even controlling 20 percent of their workday and workflow – where they get to focus on things that have meaning to them and not feel like a cog in a wheel – can make all the difference.

Addressing work inefficiency, a major driver of burnout and people leaving their jobs, is also key. People want to feel that their work matters and that they’re utilized at their highest level of training. That’s a reason why listening sessions are important, because it’s the people working these jobs who know where the issues are. So those are some of the things to watch out for.

## Speaking of stress and burnout, were you worried about adding the wellness officer role to your workload?

Actually, this is really my dream come true. I spent years treating medical students and residents and being in the medical center, seeing on an individual level the issues people struggle with. To be able to address solutions from a systems perspective is such an exciting opportunity, especially being involved with the Susan Samueli Integrative Health Institute.

It isn’t like starting from the ground up. There are many wonderful resources already in place at UCI, so much of what I’m initially doing is bringing those resources together and finding areas where they can be used to improve things. And integrative health brings all these

other approaches to consider. There isn’t any one idea for well-being. For some, exercise may be the hallmark for their mental and physical health. For others, it might be their spirituality or their connection to their community or family that makes them feel well.

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**“It’s important to debunk this idea that healthcare providers are perfect and to remind them that we’re all susceptible to mental and physical health issues – that you are your own patient first and need to take care of yourself.”**

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## What would you recommend that people do to enhance their well-being?

People have told me, “I have 12-hour shifts in the hospital when I never see the sun.” We come from nature and need opportunities to connect with it. That doesn’t necessarily mean a day at the beach. Just leaving your desk for 10 minutes to walk, pet an animal or sit outside can be helpful. Exercise affects your mental health, so you should exercise even when your mood tells you it’s the last thing you want to do.

My years as a psychiatrist have made me feel strongly that loneliness is a disease. It’s important to actively find or cultivate your own community of people you feel you can talk to and rely on.

It’s also important that those in healthcare find their own purpose for getting up each day. The pandemic has made us rethink what it means to be an essential worker. Waking with the thought that you can do something productive for others is very beneficial to your mental health.

Lastly, my favorite word is “hope.” It’s even the name of my oldest dog. In my experience, everybody wants to feel able to improve their and their family’s lot in life. That hope is such a driver for wellness, and it’s important you work toward that – including landing yourself in an organization that’s looking for ways to better people’s lives. ●

— Jim Washburn



## Soccer Shocker

*Senior forward Scarlett Camberos moves the ball upfield in UCI's stunning upset of No. 2 national seed and No. 3 nationally ranked UCLA, 1-0, in the first round of the NCAA Tournament at Wallis Annenberg Stadium. It was the Anteaters' first win over UCLA since 1995 and first-ever win in Los Angeles. The UCI women ended the Bruins' 26-match unbeaten streak and advanced to the second round, where they lost to Wisconsin. Camberos earned Big West Offensive Player of the Year honors after a conference-best 13 goals, 33 points and a team-high seven assists.*



## From Sloths to the Soul of UCI

By Magnus Egerstedt

On a vacation with my family in Costa Rica a few years ago, I became fascinated with sloths – not because they were cute and cuddly but because I simply could not understand how such slow (and potentially quite tasty) animals could exist in an environment populated by jaguars and eagles. Their leisurely, low-energy lifestyle is somehow a viable survival strategy shared by pretty much all arboreal folivores (tree-dwelling leaf eaters) due to the dueling requirements of being big enough to break down and digest the complicated leaves, yet small enough to reside successfully among the treetops.

In fact, animals that occupy this particular ecological niche – such as koalas, two-toed and three-toed sloths, and some lemurs – are all roughly the same size, and they spend the vast majority of their time doing little else than digesting their food. When they do move, it typically happens at an exceedingly slow pace. In other words, slowness has become a response to a severely energy-constrained existence, which begs the question: Is there anything that we, as individuals and societies, can learn from such a deliberate approach?

Once back in the lab, I decided to explore what slowness as a design paradigm might have to offer robotics, which is my area of research expertise. The practical reason for this pursuit of slowness is that in many applications, being fast is irrelevant and even risky. Instead, a persistent and steady presence is what's required. This is the case for robotic rovers roaming around on Mars. (It took the famous Mars rover Opportunity 11 years and two months to complete a marathon.) Similarly, agricultural robots out on farm

**“We, as a society, are currently facing several defining and even existential questions, such as: How do we feed a growing planet? How do we reverse climate change? How do we provide affordable and effective healthcare to underserved populations? How do we structure our future societies so that artificial intelligence and robotics enhance the human experience? Engineering has its fingerprints all over those questions. But engineering alone does not have all the answers – nor even, at times, the right questions.”**

fields for an entire growing cycle – tending to individual plants' water, pesticide and fertilizer needs – must, in essence, only move at the speed of a plant.

In collaboration with a field ecologist, this novel and slow approach to robotics was put to use in the context of environmental monitoring. The resulting “SlothBot” was a solar-powered monitoring robot suspended in the tree canopies at the Atlanta Botanical Garden, where it measured micro-climate data for over a year, every now and then moving out from under the treetops to sunbathe and recharge its batteries. The SlothBot recently left this habitat and is migrating to UCI; it will participate in multidisciplinary projects aimed at understanding our natural world for the purposes of conservation biology and environmental monitoring and protection. The robot will reside at the beautiful Crystal Cove State Park, where it will turn into a beach dweller.

We, as a society, are currently facing several defining and even existential questions, such as: How do we feed a growing planet? How do we reverse climate change? How do we provide affordable and effective healthcare to underserved populations? How do we structure our future societies so that artificial intelligence and robotics enhance the human experience? Engineering has its fingerprints all over those questions. But engineering alone does not have all the answers – nor even, at times, the right questions. As the new Stacey Nicholas Dean of Engineering, I am delighted to have found a campus community with a collaborative vibe and where multidisciplinary research is woven into the fabric. Several large-scale projects are underway combining engineering with climate research, clean energy, health and social justice. UCI's values of inclusivity, collaboration, impact and innovation align perfectly with what I'm hoping to achieve as dean of The Henry Samueli School of Engineering.

When I first arrived on campus, I somewhat pretentiously asked the engineering department chairs if they could help me find the “soul” of UCI. Professor Vasana Venugopalan, chair of the Department of Chemical & Biomolecular Engineering, answered that question by walking me out into the middle of Aldrich Park. It's telling that the center of UCI is a park rather than the typical campanile, statue, administrative building or quad. Here, every discipline is connected and can be reached by a short stroll through nature. This is extremely powerful, as it resonates directly with the themes of multidisciplinary collaboration, research impact at societal scales and nature as a source of inspiration.

In my own research and life, I've found that the way to new and interesting ideas is often to get away from the computer screen and the lab and do something different. Being in nature helps me think through problems and get a new (and sometimes surprising) perspective on whatever I might be wrestling with professionally or personally. There's a saying that I really like: “You should sit in nature 20 minutes every day, unless you're busy. Then you should sit for an hour.” I have no idea where this saying originated, but that doesn't matter. The idea is clear: Put down this magazine, stop what you're doing, and walk slowly across your own version of Aldrich Park to connect with someone from a different background. Be the sloth! Or even better, embrace the collaborative, innovative and supportive spirit that is so vibrant on UCI's campus and be the ant eater! ●

*Egerstedt is the Stacey Nicholas Dean of Engineering.*



## ***Hospital on the Horizon***

*UCI Health CEO Chad Lefteris addresses guests during a groundbreaking ceremony for a \$1.3 billion medical center that will be constructed at the north end of campus. "UCI Health is building the next chapter of healthcare in Orange County," Lefteris said. "The new UCI Medical Center – Irvine will be a full-service academic medical complex, bringing a broad range of the most advanced healthcare services to coastal and southern Orange County, including access to the hundreds of clinical trials underway at UCI Health."*







Steve Zylus / UCI

# In Sickness and in Health

*Alumna provides hope and support for couples dealing with mental health conditions*

By Kristin Baird Rattini

For Erin Ramachandran, the honeymoon was over – literally. She and her husband, Keith, had just spent their first week as newlyweds in October 2007 in Lake Chelan, Washington. They had hiked, enjoyed tastings at area wineries and visited the nearby German-themed tourist town of Leavenworth.

The giddiness of their time together, however, came to an abrupt halt when they returned home to Sacramento. Keith started cleaning the house constantly. He spent hours scrubbing the floors and washing the dishes, leaving his wife feeling ignored and baffled. “He wasn’t like this during the year and a half we dated,” says Ramachandran, who graduated from UCI in 2004. “I felt like there had been a bait and switch.”

As time passed, Keith’s behavior intensified. He cleaned for up to 16 hours a day and could no longer sleep or hold down a job. Ramachandran insisted that her husband seek medical help. “He was diagnosed in two minutes,” she says, “with classic obsessive-compulsive disorder.”

It was the beginning of an ongoing mental health journey, with four additional diagnoses plus suicidal ideation and other trials that have tested the couple’s relationship over the past 14 years. Ramachandran found few resources for how spouses could support both their significant other’s mental health and their marriage. So she created her own.

Through her book, *Mental Health Strong*, and its associated nonprofit organization, website and virtual conferences, Ramachandran is providing support for couples with mental health and addiction challenges.

According to the National Alliance on Mental Illness, 1 in 5 U.S. adults experience a psychiatric disorder. Seventy-five percent of these conditions begin by age 24.

In seeking care, Keith recognized that he’d had an earlier episode of OCD when he was 10. His compulsion at that time was not cleaning but schoolwork. However, being obsessive about studying was valued by his parents, Ramachandran says, so he went undiagnosed.

Right before their wedding, Keith had been disowned by his parents for changing his faith. The couple realized that this traumatic event, combined with the stressors of moving to a new city, starting a new job and getting married, likely triggered the OCD resurgence.

As Ramachandran struggled to juggle her husband’s highs and lows with her rising career as a healthcare program director at Kaiser Permanente, she continually searched for books or websites that could help her but came up empty.

“There are a lot of resources for marriages; many of them talk about communication and meeting each other’s needs,” Ramachandran says. “But with mental illness, your spouse can’t meet your needs because they can’t even function themselves.”

She wasn’t surprised that a multi-national survey found that marriages with a mental health condition in the mix are 20 to 80 percent more likely to end in divorce. Ramachandran and Keith had separated for a while, but they worked with a therapist to move forward together.

“People have asked me, ‘You don’t have children; why do you stay in the marriage if your needs aren’t being met?’” she says. “I respond that if I got cancer, Keith would not leave me. We got married in sickness and in health. If I truly believe that this is a brain disorder, which I do, then that means the same thing: in sickness and in health. Therefore, we’re going to try to get the right help for it.”

Ramachandran approached that challenge in the same way she had since her days as a social ecology major at UCI: assessing problems and devising novel solutions. She was the inaugural manager for the UCI women’s rowing club, handling not only team logistics but alumni events. Ramachandran credits her

proclivity for problem-solving for her ascent within the national office of Kaiser Permanente, where she became a healthcare program director at age 31 and now heads the Mental Health & Wellness Program. In that position, she tries to understand what customers expect of mental health and addiction care and improve their experience. “Every few years, I’ve been promoted to a new role where I find a problem, create the solution from scratch and then deploy it,” she says. “It’s just part of my DNA.”

*Mental Health Strong*, published in 2019, pairs Ramachandran’s own experience in handling such issues as helping versus enabling and navigating difficult situations with the resources for addressing them. It provides templates for setting boundaries, preparing for relapses, maintaining a healthy relationship and other critical tasks.

The Mental Health Strong website connects readers with an even broader range of resources. A calendar shares links to Ramachandran’s upcoming virtual leadership summits on marriage and mental health. A table lists dozens of physical, emotional, spiritual and relational tools. Spouse assistance sheets for 11 different diagnoses offer an overview of each condition, spell out potential impacts on the marriage, and supply helpful words and phrases for the journey.

“If someone is struggling in a relationship, I want them to know that there is hope,” Ramachandran says, adding that her husband is now working full-time with OCD symptoms greatly reduced. “Support continues to grow. We can all play a part simply by overcoming the stigma and being accepting and compassionate toward people with mental health issues.” ●

## 8 Practical Steps for Staying ‘Mental Health Strong’

- 1 Make the diagnosis clear**  
You need to know which problem you’re solving to approach it in the correct way.
- 2 Help for you and your spouse**  
“Like on an airplane, you need to put your oxygen mask on before you help your partner with theirs,” Ramachandran says. “The healthier my approach on working through my anger and frustration, the better I can help him.”
- 3 Set some boundaries**  
Establish what you’re willing and unwilling to do.
- 4 Take time for self-care**  
Focus on what recharges you and keeps you healthy.
- 5 Remember to grieve**  
“Your relationship is different than what you thought it would be,” Ramachandran says. “Allow yourself to grieve the loss of expectations so you can move forward.”
- 6 Own the journey**  
Accept that you will have more extreme ups and downs than other relationships.
- 7 Not again**  
Expect relapses to happen.
- 8 Gift of mental health**  
Look for the positives that have come out of your situation. “I’m more empathetic and compassionate than I might have been otherwise,” Ramachandran says.



**Darlene Bailey '71**, history, teaching credential '73, M.A. '77, comparative culture

She has hitchhiked across India and played beach volleyball for a team coached by basketball legend Wilt Chamberlain. As an Anteater, Darlene Bailey was a cheerleader, chorus singer and flutist who quit the university orchestra to join UCI's first intercollegiate women's volleyball team. She

continued in the sport after graduation, racking up three national championships. In 1979, Bailey became head coach of Boise State University's women's volleyball team. After 19 years there, she returned to Orange County and began teaching high school history, in keeping with family tradition. Her late father, Kenneth P. Bailey (with whom she's pictured in 1976), was a UCI history professor and founding director of the Office of Teacher Education. And her late brother, Ken J. Bailey, was a fellow UCI alum who worked in the Irvine Unified School District. In 1984, she was inducted into the UCI Athletics Hall of Fame.



**Claudia Bonilla Keller '87**, political science

The big switch happened in 2005. After 18 years in the fashion and retail industry – working for such brands as Calvin Klein, Vans and St. John Knits – Claudia Bonilla Keller jumped to the nonprofit world. Her first stop was executive director of the American Heart Association's Los Angeles office. The transition wasn't

completely out of the blue. St. John Knits had asked her to start a charitable foundation and, Keller says, "I realized I liked it." After the AHA, she moved to the LA Promise Fund, got a master's degree in public administration, with a concentration in urban management, from Cal State Fullerton, and – in 2020 – became chief mission officer for Second Harvest Food Bank of Orange County. In December, Keller was elevated to CEO of Second Harvest. Outside work, she's a master gardener, soccer player and member of Placentia's Planning Commission. Last fall, Keller was honored at UCI's Lauds & Laurels ceremony as outstanding alumna from the School of Social Sciences.

**Martin Ngo '05**, computer science

God or Hollywood? That seemed to be the choice facing Martin Ngo in 2015. The son of a cemetery counselor and an electrical engineer, he was studying to be a Jesuit priest while also performing improv and sketch comedy at Chicago's famous Second City Training Center. When Ngo confessed to his religious superiors that he felt more called to be an actor than a cleric, they suggested he do both. Six years later, armed with degrees in digital storytelling and sacred theology, Ngo was ordained. Along the way, he taught media arts to high school students, filmed a collection of one-minute homilies and wrote a thesis that quoted everyone from St. Augustine to Stephen Colbert. He's currently working as a campus minister at Loyola Marymount University. But given Ngo's eclectic background, his next assignment could be something entirely different. As one of his online mini-biographies notes, "the world is his cloister."



**Michael Marckx '87**, economics

The Beer Mile, an offbeat race in which runners chug a brewski before each lap, is Michael Marckx's favorite competition. He also surfs, skateboards, paddleboards and plays Parcheesi. In 2012, he created the Belgian Waffle Ride, a 140-mile bicycle race that serves contestants Belgian waffles before the event and Belgian ales after. Marckx's athletic bent is mirrored in his professional life. In addition to twice directing the Gatorade Ironman World Championship, he held executive roles with Ocean Pacific, *Surfing Magazine*, an Australian skateboard company, Adidas and Billabong. He also helmed two eyewear firms and chaired the Surfrider Foundation board. The list goes on. "If you're entrepreneurial, your successes

are preceded by many failures," Marckx says. "I've been hit by a car while cycling seven times in my life, but I'm still going to go out and ride my bike today. You pick up the pieces, reorganize and go after it differently."



**Emily Seto '13**, public health sciences

Watching the Mars 2020 mission launch from Cape Canaveral, Florida, was like "seeing your child go off to college," says Emily Seto. Make that a germ- and microbe-free child. Seto's job is to prevent earthly bacteria from hitchhiking to other planets – and vice versa. As a planetary protection and contamination control engineer for Honeybee Robotics (and previously for Pasadena's Jet Propulsion Laboratory), she uses ethanol, dry heat and other methods to sterilize spacecraft hardware. Seto also strives to ensure the safety of samples brought back from outer space. Toward that end, she recently traveled to Hawaii's Mauna Loa volcano, where she donned a spacesuit and collected lava specimens to be analyzed for microbes. Before her career in interplanetary public health, the L.A. native gave weekend piano lessons while working as a microbiologist for CHOC Children's Hospital and, later, UCI Medical Center.

**Justice Turner, MBA '20, J.D. '20**



His first name, which was inspired by baseball star David Justice, has influenced Justice Turner's path in two ways. He grew up an avid sports fan and athlete in Kansas City, Missouri, then studied sports management at Virginia's Hampton University. Hoping to become a sports agent, Turner enrolled in law school at UCI, where he turned toward another kind of justice. "The more I learned ... the more I wanted to go into litigation to help minorities and others," he says. "I altered my path ... to instead go into courtrooms to use this name Justice to my benefit." Now working for a Los Angeles law firm, Turner is part

of quarterback Colin Kaepernick's legal team. He also created a video series – titled "Is That Justice?" – exploring such topics as student loan debt, racism and voting rights.

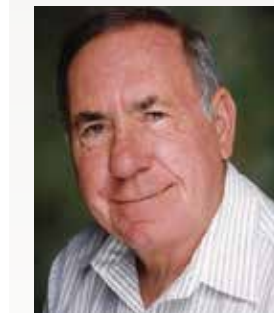
## In Memoriam



**Arnold Binder**, professor emeritus of criminology, law & society

Arnold Binder, founder of UCI's social ecology program, died Oct. 2. He was 97. Binder, who earned a Ph.D. in psychology at Stanford University, joined the faculty at UCI in 1966. He previously was a professor of psychology at Indiana

University and a professor of industrial engineering at New York University. As the first director of the social ecology program, Binder oversaw its growth. "Were it not for Arnie Binder, UCI would never have had social ecology," said William Schonfeld, professor emeritus of political science and former dean of the School of Social Sciences. "Helped at first only by an undergraduate student, John Monson, he made contact with a series of social agencies in Orange County and got them to agree to have UCI students as interns. Then he spread the word on campus about this work-study opportunity, which became a hallmark of social ecology and rapidly created enormous student demand for it." In 1992, the UC regents recognized social ecology as a school at UCI. Binder was named the first chair of the Department of Criminology, Law & Society. He is also known for his work on juvenile delinquency.



**Gary Guymon**, professor emeritus of civil engineering

Gary Guymon, who served on UCI's engineering faculty for 20 years (1974 to 1994), died Sept. 3 at his home in Montrose, Colorado, just two months before his 86<sup>th</sup> birthday. A water resources expert, he was the founding chair of the Department of Civil

Engineering (1984 to 1988), the forerunner of today's Department of Civil & Environmental Engineering. Guymon began his career as an engineer with the California Department of Water Resources in 1955, a role he held for 11 years. He attended UC Davis, earning a bachelor's degree in 1966, a master's degree in 1967 and a doctorate in 1970 in civil engineering. Guymon was an associate professor at the University of Alaska Fairbanks before joining the UCI faculty. Stephen Ritchie, a UCI professor of civil & environmental engineering who was hired by Guymon in 1985, said: "His dedicated and visionary leadership as chair and his scholarly achievements were instrumental in laying a strong foundation for CEE to become one of the top departments in the country today."



## Zots of Jubilation

Sociology major Lillian Rodriguez '21 poses for a photo with her daughter, Stella – who at 5 is already learning the Anteater hand symbol – after attending the all-university commencement in the Bren Events Center on Dec. 13. About 500 newly minted bachelor's and master's recipients who had completed their degree requirements in summer and fall were honored at UCI's first-ever mid-academic-year graduation – the first in-person ceremony in more than two years.

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