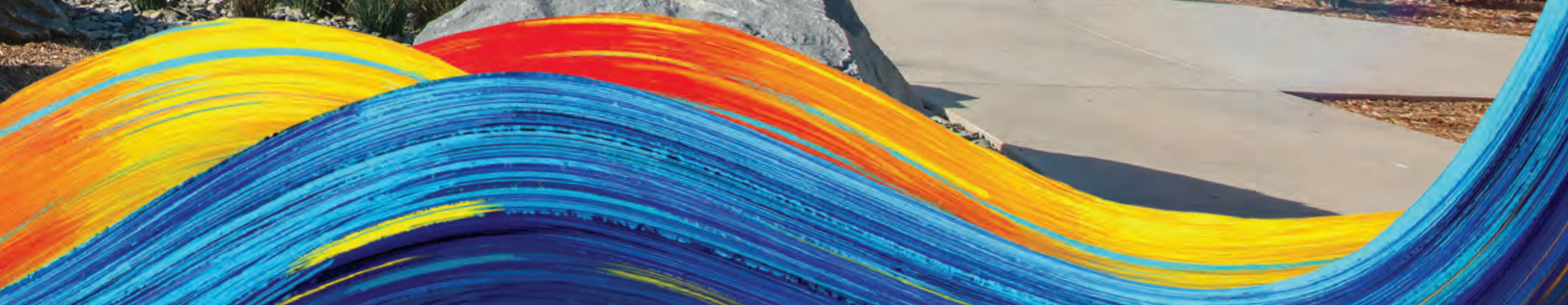


SUSAN & HENRY SAMUELI COLLEGE OF HEALTH SCIENCES

UCI Susan & Henry Samueli
College of Health Sciences

Annual Impact Report

2021/22





“UCI is the region’s only university-based health system. We are leading the way by empowering discoveries and training the diverse, interprofessional healthcare workforce of the future to carry on that legacy”

-Steve A. N. Goldstein, M.A., M.D., Ph.D., FAAP, Vice Chancellor for Health Affairs

About us

The Future of Health Happens Here

As a comprehensive academic healthcare system, founded on the mission to Discover, Teach, Heal, UCI Health Affairs is committed to offering the most advanced support for human health based on groundbreaking research, novel education, and delivery of cutting-edge care at the right time and in the best place. UCI's nation-leading status is being elevated by a uniquely collaborative strategic trajectory built upon an alliance across the health disciplines of medicine, nursing, pharmacy & pharmaceutical sciences, public health, and integrative health, seamless implementation within the health delivery system, and full engagement with the world-class expertise of UCI.

BACKGROUND

School of Medicine

Connecting innovative medical discoveries with the humanistic aspects of patient care

Sue & Bill Gross School of Nursing

Championing interdisciplinary approaches that enhance the health of our communities

School of Pharmacy & Pharmaceutical Sciences

Accelerating innovations that save lives, reduce costs and optimize medication use

Program in Public Health *Future School of Population and Public Health*

Creating, integrating and translating population-based knowledge into preventive strategies

Susan Samueli Integrative Health Institute

Pioneering a multidisciplinary, evidence-based, integrative approach to health

UCI Health

Stopping at nothing to be the best place to give and get care in Orange County and beyond through improving health, increasing value and transforming our community

Research Centers & Institutes of Health

Pushing the boundaries of innovation and discovery

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**UCI Susan & Henry Samueli
College of Health Sciences**
865 Medical Sciences Quad
Irvine CA, 92697

healthaffairs.uci.edu

Vice Chancellor's Message

Executive Leadership

The mission to DISCOVER, TEACH, and HEAL demonstrated its power again this year. In the wake of an ongoing pandemic, UCI Health Affairs – comprised of the Susan & Henry Samueli College of Health Sciences, UCI Health, and the UCI Centers and Institutes of Health – improved lives by advancing research at the frontiers of knowledge, by educating the next diverse generation of investigators and providers, and by embracing all people.



Steve A. N. Goldstein, M.A., M.D., Ph.D, FAAP
 Vice Chancellor for Health Affairs
 Distinguished Professor, Departments of Pediatrics, Physiology & Biophysics, and Pharmaceutical Sciences

DISCOVER: In February, we launched the much-anticipated Institute for Precision Health (IPH). This endeavor ushers in a new epoch in healthcare with UCI in the lead based on institutional prowess as a powerhouse in health and computational science. IPH is using big data to advance clinical practice (for superior treatments that are personalized), inform health policy (to save lives and fortunes), and create health equity (so all are afforded access to good care).

TEACH: The state-of-the-art Susan & Henry Samueli College of Health Sciences building and Sue & Bill Gross Nursing and Health Sciences Hall progressed full steam all year despite supply chain challenges. This fall we welcome the very first groups of medical, nursing, pharmacy, and public health students to classes, and will see patients in the new home for the Susan Samueli Integrative Health Institute, in beautiful space designed with sustainability (LEED Platinum) and the wellbeing of people in mind.

HEAL: Our pioneering plans for growth on the north edge of the main campus are going strong. Construction of the new UCI Health – Irvine medical center on Jamboree Road is on schedule. In June, we announced the \$20 million naming gift for the Joe C. Wen & Family Center for Advanced Care. That five-story, 168,000-square-foot outpatient facility will open in late-2023 to offer adult and pediatric specialty care, urgent care, digestive health, neurosciences and comprehensive laboratory and radiology imaging services. It will be joined

by the Chao Family Comprehensive Cancer Center and Ambulatory Care building and a 144-bed hospital in late 2023 and 2025, respectively. The complex will attract top talent to UCI and enhance access to world-class care in south Orange County (OC).

UCI is the only university-based health system serving OC and supports 100 regional hospitals by offering world-class care to patients in the region. The unique benefit of the UCI discovery, teaching, and healing mission is that it is a virtuous cycle, empowered by astounding breakthroughs across the university, the vibrant entrepreneurial culture of OC, and the remarkable generosity of our donors. The result is continuous quality improvement that offers our patients the best care available each and every day.

Of course, the annual impact report can provide only a small sampling of the revelatory work that is transforming wellness and healthcare for our loved ones and generations to come. We offer it with pride in the determination, brilliance and passion of the people who bring UCI Health Affairs to life.

Yours in health,

Dr. Steve Goldstein



Bernadette Boden-Albala, M.P.H., Dr.P.H.
 Director and Founding Dean
 Program in Public Health



Rebecca Brusuelas-James
 Associate Vice Chancellor
 for Finance



Jan D. Hirsch, B.S. Pharm, Ph.D., FNAP
 Founding Dean
 School of Pharmacy &
 Pharmaceutical Sciences



Sheefteh Khalili, Ph.D.
 Associate Vice Chancellor
 and Chief of Staff
 for Health Affairs



Chad T. Lefteris, FACHE
 Chief Executive Officer
 UCI Health



Mark Lazenby, R.N., Ph.D., FAAN
 Dean
 Sue & Bill Gross School of Nursing



Sherry L. K. Main, MBA
 Vice Chancellor
 for Strategic Communications
 & Public Affairs



Shaista Malik, M.D., Ph.D., M.P.H., FACC
 Associate Vice Chancellor
 for Integrative Health
 Executive Director
 Susan Samueli Integrative Health Institute



Caroline Pereira, MBA
 Associate Vice Chancellor
 Health Advancement



Michael J. Stamos, M.D., FACS, FASCRS
 Dean
 School of Medicine

Who We Are

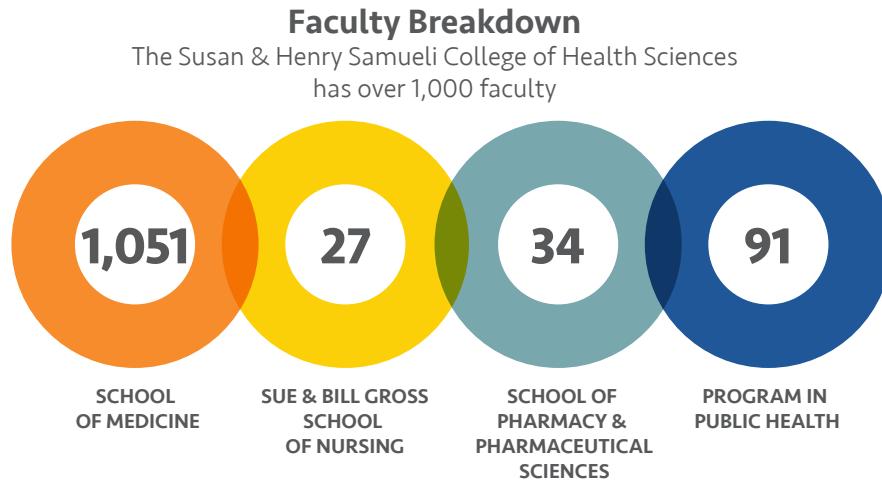
Total Faculty, Staff, Students



10,000+ Faculty & Staff



2,888 Students



COHS Enrollment by School

School of Medicine

Medical Students: 504
Residents & Fellows: 745
Ph.D. & M.S. Students: 111

1,360

Sue & Bill Gross School of Nursing

• Undergraduate Students: 180
• Graduate and Professional Students: 122

302

School of Pharmacy & Pharmaceutical Sciences

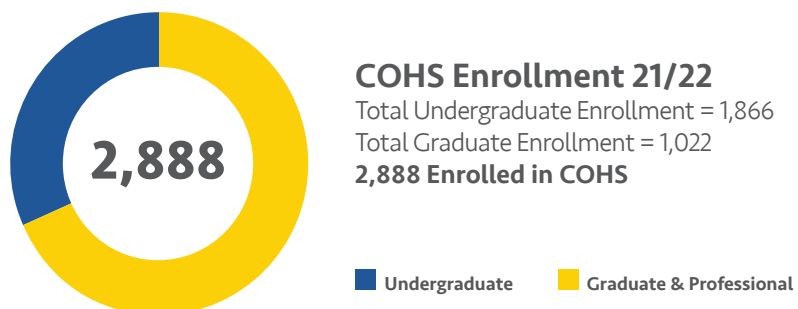
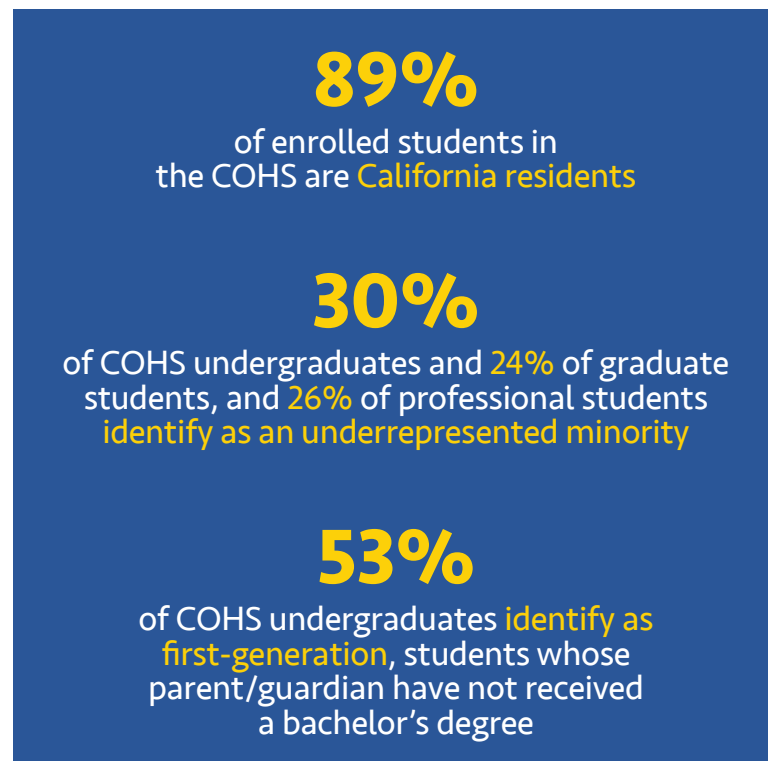
• Undergraduate Students: 540
• Graduate and Professional Students: 122

662

Program in Public Health

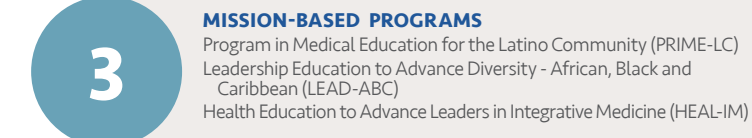
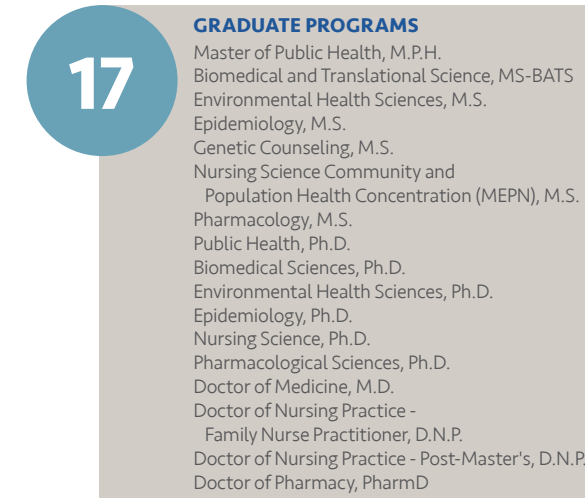
• Undergraduate Students: 1,146
• Graduate and Professional Students: 163

1,309

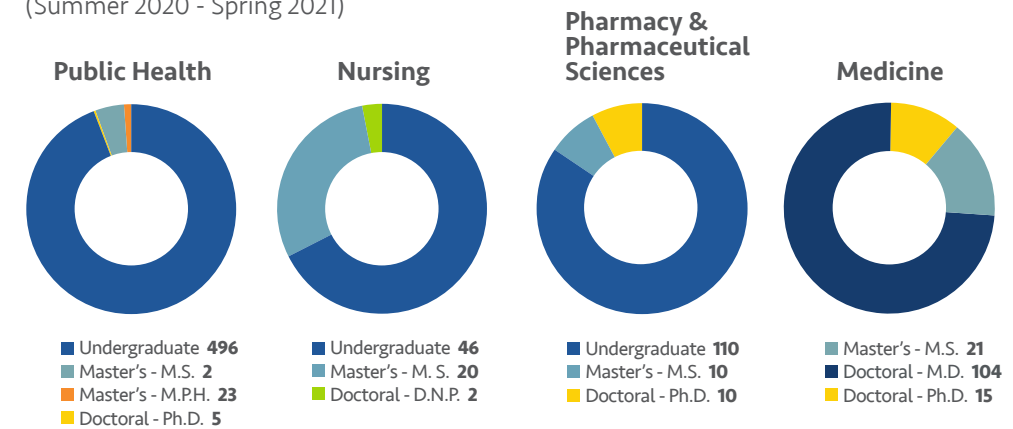


Academic Impact

COHS Degrees Programs



COHS Degrees Awarded (Summer 2020 - Spring 2021)



864 Degrees Awarded in 2020-21

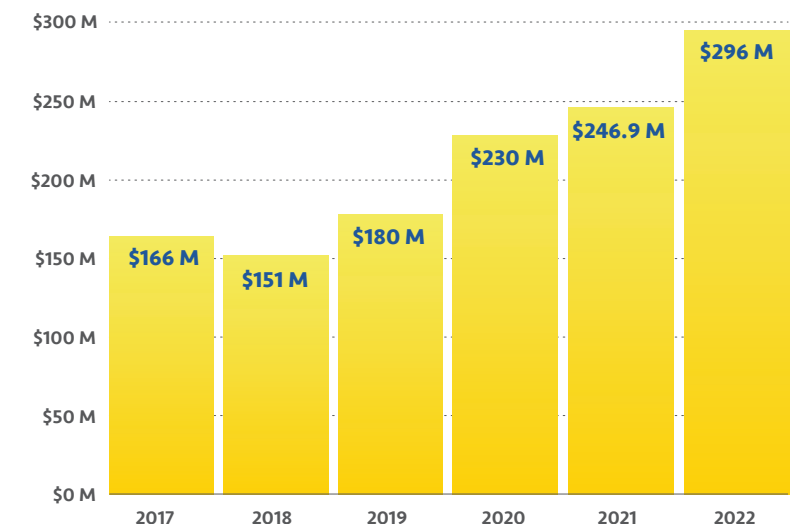
Research Impact

Health Affairs research awards have increased **96%** over the last four years

\$296 MILLION*

* In 2021-22 Fiscal Year Research Awards totaled \$296 Million across Health Affairs

College Research Award Trends



Philanthropic Impact



\$132.6 Million

Raised in Philanthropic Support

Health Affairs had a **60% increase** in gifts from 2020-21 to 2021-22



Clinical Impact

Susan Samueli Integrative Health Institute

4,589

People Served (UCI and UC Care Members)

7,822

Inpatient Acupuncture Treatments

The Susan Samueli Integrative Health Institute is home to **five faculty, 21 researchers, 19 staff, 41 clinicians, over 2,000 trainees, 19 health coaching learners, and works with over 80 medical students and residents** through educational and research programs

UCI Health

Nearly **190** recognized "Physicians of Excellence."

U.S. News & World Report listed UCI Medical Center among **America's Best Hospitals** for the 22nd consecutive year and No. 13 in California and No. 6 in Los Angeles Metro.

Named a **"Top Hospital"** by The Leapfrog Group, with 16 straight "A" Hospital Safety Scores.



Capital Projects



Over the next five years, Health Affairs will expand by nearly **2.5 million sq ft**



Susan Samueli Integrative Health Institute concept

Health Sciences District

This fall 2022, the Susan & Henry Samueli College of Health Sciences (COHS) and Sue & Bill Gross Nursing and Health Sciences Hall (N&HSH) will open, and includes a new location for the Susan Samueli Integrative Health Institute. The 9-acre complex includes a 200-seat auditorium, classrooms, high-fidelity simulation center, faculty research, and administrative space that will house schools and units within the Susan & Henry Samueli College of Health Sciences.



UCI Health - Irvine Chao Family Comprehensive Cancer Center

UCI Health – Irvine Medical Complex

UCI Health continues to expand its footprint with new clinical sites across Orange County and construction of the UCI Health – Irvine medical complex. Whether through the Chao Family Comprehensive Cancer Center and Ambulatory Care or the new Joe C. Wen & Family Center for Advanced Care, the new medical center will improve access for patients living in coastal and south O.C.

Top News in National Media

UCI Big Hits List

UCI Health Affairs had more than 6,000 placements in the media across the region, nationally and abroad this year. With 30.98 billion impressions over the 12 month period, UCI dominated with a 44% share of voice in the Orange County market.

UCI Team Treats Former President Bill Clinton

Every patient is important, but some have *The New York Times* and *The Washington Post* report on their hospital stays. Such was the case when former President Bill Clinton had an up close and personal introduction to UCI Medical Center Orange. Clinton stayed for nearly a week while UCI doctors, including Alpesh Amin, M.D., MBA the chairman of the Department of Medicine and director of hospital medicine for UCI Health, and Lisa Bardack, M.D., treated him for a urological infection that developed into sepsis. Though sepsis can be life threatening, the doctors were able to quickly treat Clinton with a course of IV antibiotics and fluids. Through his spokesperson Angel Urena, the former president expressed thanks for the team of doctors, nurses, and staff who provided him with excellent care.



UCI Researcher Philip Felgner Stands Out Among mRNA Vaccine Heroes



The path to messenger RNA-based COVID-19 vaccines might appear to have happened at warp speed, but the truth is it was a little more arduous. Or perhaps a lot more. Hundreds of scientists spanning the globe worked persistently and usually in obscurity for more than 30 years before, finally, in 2021 mRNA COVID vaccines materialized and commanded the attention of the world. Parsing the history of the mRNA vaccine, a handful of scientist heroes stand out for key contributions. The science journal *Nature* called out UCI biochemist Philip Felgner, director of the university's Vaccine Research and Development Center, as among those key contributors who made a difference in the trajectory of mRNA vaccines. In the late 1980s, Felgner helped develop liposomes to deliver mRNA into human cells – research that this year landed him among the recipients for Spain's prestigious Princess of Asturias Award for Technical and Scientific Research. "It's thrilling for me to see this," Felgner told *Nature*. "All of the things that we were thinking would happen back then – it's happening now."

Nurse Morale

Washington Post; 10/15/2021

Bill Clinton heads home after spending six days in a California hospital

UCI News/NY Times; 10/17/2021

Pufferfish Toxin Holds Clues To Treating 'Lazy Eye' In Adults

NPR; 9/15/2021

The tangled history of mRNA vaccines

Nature; 9/14/2021

Pregnant people are at 'greater risk' in states hit hard by wildfire smoke, air pollution

the 19th; 4/20/2022



Feeling forgetful? How stress may impact memory

Today; 4/12/2022

UCI poised to advance depression research following \$55-million gift to establish center

LA Times; 02/16/2022

A Timeline of How Long Vaccine Boosters Take to Build Immunity

Popular Mechanics; 1/7/22

A COVID-19 pill could soon fill a gap in our pandemic response that vaccines can't overcome

Business Insider; 10/1/2021

UC-Irvine Institute for Precision Health Called an 'Ecosystem for Collaboration

Healthcare Innovation; 2/17/22



School of Medicine



Philip Felgner, Ph.D., Professor in residence of Physiology & Biophysics

Philip Felgner Awarded Prestigious Robert Koch Prize

The UCI community couldn't be prouder of infectious disease researcher Philip Felgner, Ph.D., professor in residence of physiology & biophysics. Felgner was one of two scholars to win the prestigious 2022 Robert Koch Prize for fundamental contributions to the transfer of nucleic acids into cells.

Felgner pioneered the use of artificially-created cationic lipids (positively-charged lipids) to bind lipids to nucleic acids. Known as lipofectin or liposome-based transfection, the contribution would ultimately allow scientists to move DNA or RNA where they want it to go. Liposome-based transfection played a crucial role in the development of messenger RNA COVID-19 vaccines.

In addition, the gene therapy technology holds promise for creating preventive vaccines that will help avoid future pandemics and fight HIV and other infectious diseases. The technology may also offer possibilities for treating cancer and Alzheimer's disease and correcting genetic disorders such as sickle cell disease.

Felgner, who directs UCI's Vaccine Research and Development Center, shared the Koch prize with Dr. Drew Weissman, a professor in the University of Pennsylvania's Perelman School of Medicine.

UCI Researchers Pave the Way for GPCR Breakthroughs

School of Medicine researchers Krzysztof Palczewski, Ph.D., Tamar Getter, Ph.D., and David Salom, Ph.D., teamed up with Oxford researchers to make a discovery that may usher in a new paradigm for drugs that target G protein-coupled receptors (GPCRs).

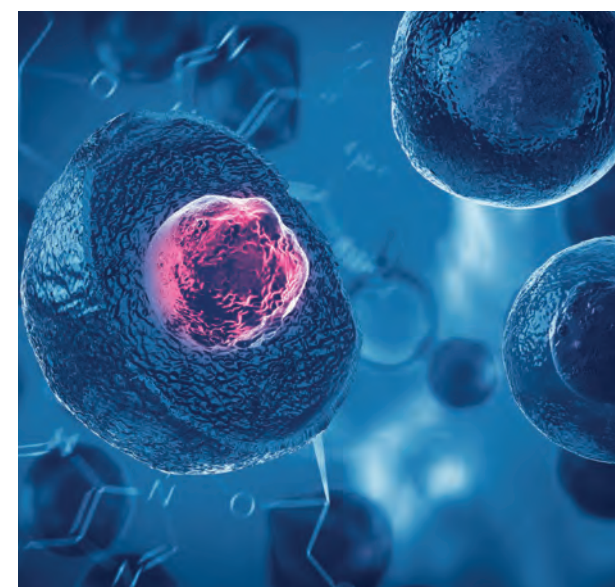
The researchers, who published their findings in *Nature*, uncovered the impact of native lipids on rhodopsin signaling and regeneration. Rhodopsin absorbs light striking photoreceptors, and initiates processing essential for vision. Capturing signaling events of a wild-type receptor in real-time, across a native membrane to its downstream effectors, had previously remained elusive.

The team's findings will enable new potential targets of therapeutic value for the visual system. And since diseases ranging from cancer to heart disease to blindness are all impacted by the function of GPCRs, researchers expect analogous work to be done on other GPCR systems.



Biomarkers Hold a Clue to Suicide Risk

A team of nine UCI researchers, along with members of the Pritzker Research Consortium, have developed an approach to identify blood biomarkers that could predict the suicide risk of major depressive disorder (MDD) patients. Publishing in the journal *Translational Psychiatry*, the researchers performed the first study to analyze matched blood and brain samples in a well-defined population of MDDs, demonstrating significant differences in gene expression associated with completed suicide. Results strongly suggest that blood gene expression is highly informative to understand molecular changes in suicide. Suicides have increased to some 48,000 deaths in the U.S. each year. Developing a suicide biomarker signature in blood could help health care professionals identify who is at highest risk.



One Step Closer to Symptom Relief for Parkinson's Patients

Thanks to UCI Health neurologist Dr. Claire Henchcliffe and colleagues, we may be one step closer to a breakthrough for the nearly 10 million people worldwide living with Parkinson's disease. Henchcliffe, chair of the Department of Neurology, is principal investigator in MSK-DA01. Animal studies have already shown the next-generation stem cell treatment restores the brain's ability to produce dopamine. An inability to produce dopamine leads to Parkinson's hallmark tremors, stiffness, slowness and lack of coordination. Participants in the human trial phase will now have embryonic stem cells transformed into dopamine-producing neurons surgically transplanted into the putamen, the area of the mid brain that is no longer producing dopamine. Over the next two years, researchers will track participants to determine if the treatment provides long-term symptom relief.

Sue & Bill Gross School of Nursing



Dean Mark Lazenby

Nursing Welcomes New Dean

In January, the Sue & Bill Gross School of Nursing welcomed new dean Mark Lazenby, R.N., Ph.D., FAAN. Dean Lazenby is a fellow of the American Academy of Nursing and the American Psychosocial Oncology Society. He earned a Ph.D. in philosophy of religion at Boston University in 2001 and a Master of Science in Nursing from the Yale University School of Nursing in 2009. Most recently before joining UCI, he was a professor of nursing and philosophy, and associate dean for faculty and student affairs at the University of Connecticut.

Q: You've been a professor of both nursing and philosophy, which is a unique path, tell us more about that.

Dean Lazenby: I'm a philosopher first and I was very happy teaching philosophy. When my parents died of chronic illness fairly close to one another, it was a nurse who helped us understand what was going on with my mother and what it would mean to provide a peaceful death for her. After that experience, I decided to go back to school and become a nurse. Nursing is a way to work with my hands as a philosopher in those big moments that people encounter when they need nursing care.

Q: What drew you to the Sue & Bill Gross School of Nursing?

Dean Lazenby: The school of nursing's focus on social justice and its leadership in nursing philosophy is what originally drew me to the school. This focus really resonated with me and my past work. I grew up in California and began my work as a community organizer with underserved youth in East Los Angeles. I believe that the profession of nursing is a powerful driver of social transformation, particularly for social and racial justice.

Q: What is your vision for the Sue & Bill Gross School of Nursing?

Dean Lazenby: My vision for the school includes continuing to develop aspiring nurse leaders for clinical practice and the future of nursing science. In doing this, it is critical to prioritize social and racial justice, and expand interdisciplinary research. As we look ahead, the school will leverage its strengths in interdisciplinary research and practice, community engagement, and interprofessional education to set a blueprint for the profession and the nation on how to achieve health equity today and prepare nurse leaders for the future of health.

Generous Gift Expands Nurse Training and Scholarship

A \$3 million gift from the Sue J. Gross Foundation expanded training and education opportunities in the Sue & Bill Gross School of Nursing. The generous gift supported:

- A high-tech, state-of-the-art simulation center for team-based interprofessional exercises. The center features four suites, each with a different focus, including women's health and pediatrics, surgery, critical care and community health, a hospital bed unit and an examination room.
- Nursing Ph.D. scholarships through the establishment of the Founding Dean Adey Nyamathi Endowment.

In recognition of her gift, a 2,290-square-foot, 200-seat auditorium – connected by a bridge to the Sue & Bill Gross Nursing and Health Sciences Hall – has been named the Sue Gross Auditorium, where UCI faculty can now present research findings and share insights with the campus and community.



Sue Gross and Founding Dean Adey Nyamathi



Tackling the Stress of Dementia Caregiving

Jung-Ah Lee, associate professor of nursing, hopes to help those involved in the “invisible profession” – that is, dementia caregivers. Lee is the lead researcher for a study that focuses on Korean, Vietnamese and Spanish-speaking caregivers. The study includes a team of community education specialists who make home visits to listen to the struggles of caregivers and connect them with valuable resources. As part of the study, the caregivers wear smart watches or rings that track their sleep quality, activity levels and additional indicators of stress. The aim of the study is to uncover ways to help caregivers in underserved communities using tech-driven behavioral interventions. A side benefit, says Lee, is that caregivers can use her research team as a resource even after they are no longer in the study.

Dawn Bounds Awarded Nurse Leader Fellowship

Dawn Bounds, an assistant professor of nursing, was one of 12 nurse leaders accepted to the Betty Irene Moore Fellowship for Nurse Leaders and Innovators. As part of the three-year fellowship program, fellows receive \$500,000 to conduct an innovative project. Bounds' project will focus on how pandemics impact youth and how digital spaces can offer support. Through Project REVIVE (Resilience Empowered Villages in Virtual Environments), Bounds aims to:

- Develop healthy digital spaces where youth can learn self-regulation techniques.
- Create a think tank for youth-friendly, user-centered design for just-in-time adaptive interventions.
- Continue to build pathways for marginalized youth to become peer leaders and future scientists.

School of Pharmacy & Pharmaceutical Sciences



UCI Welcomes First Pharm.D. Class!

The School of Pharmacy & Pharmaceutical Sciences proudly welcomed its first Pharm.D. (Doctor of Pharmacy) class at an inaugural White Coat Ceremony. Founding Dean Jan Hirsch, B.S.Pharm, Ph.D., told the 41 students — the Class of 2025 — that their commitment, collaboration and leadership will set the foundation for the program.

Pharm.D. Grads will be prepared to serve as medication experts for patients and other members of the healthcare team ensuring safe, effective and optimal use of medications. With UCI's dedication to precision medicine, they'll also be on the forefront of the exciting field of personalized medicine, Vice Chancellor of Health Affairs Dr. Steve A.N. Goldstein, M.D., Ph.D., FAAP, said in his address.

Additional speakers included Rear Admiral and Assistant Surgeon General Richardae Araojo, associate commissioner

for minority health and director of the FDA's Office of Minority Health and Health Equity; Provost Hal S. Stern, Ph.D.; and Dr. Allen Chao, founder, chairman and former CEO of Watson Pharmaceuticals and Tanvex BioPharma. Dr. Chao advised students to "love what you do and follow your heart."

Associate Dean of Pharmacy Student Affairs Megan Nguyen, Pharm.D. presented the white coats, which were made possible by Anteaters in Pharmacy alumni chapter. Donors added a special quote inside the collar of each coat, a constant reminder that students are supported by alumni from the beginning of their UCI journey.

Pharm.D. joins UCI's Bachelor of Science in Pharmaceutical Sciences, Master of Science in Pharmacology and Ph.D. in Pharmacological Sciences programs.

UCI Research Points to Possible Solution for Opioid Addiction

A team led by neuropharmacologist Olivier Civelli, distinguished professor in the Department of Pharmaceutical Sciences, appears to be one step closer to an answer to opioid addiction. An interdisciplinary research team including members from Pharmacological Sciences, Pharmaceutical Sciences, and Anesthesiology, published findings in the journal of *Pharmaceuticals*. Their research showed that in animal studies the extract of the plant *Corydalis yanhusuo*, a painkiller used in traditional Chinese medicine for centuries, prevents morphine tolerance and dependence while also reversing opiate addiction.



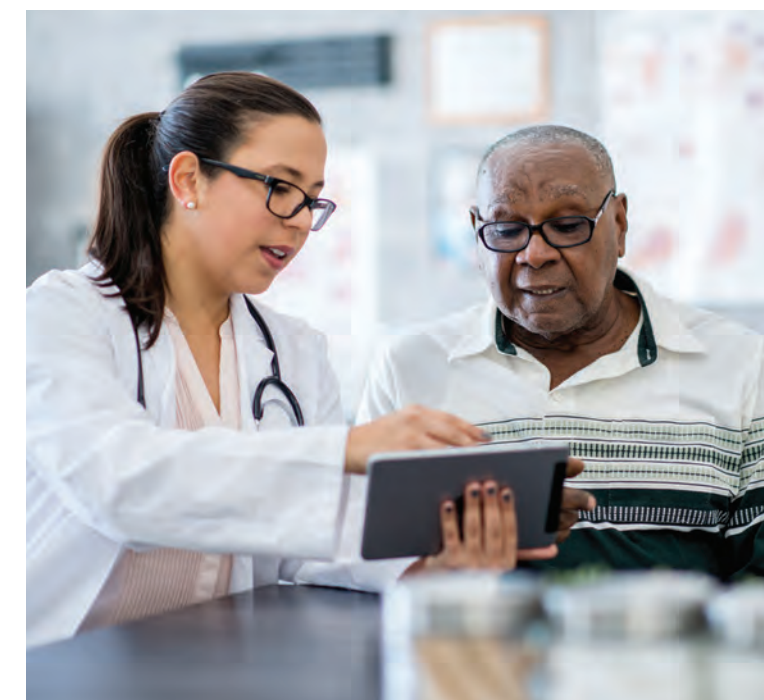
Corydalis yanhusuo plant

Keck Foundation Backs RNA Research Team

Andrej Luptak, professor and chair of pharmaceutical sciences, along with Jennifer Prescher, professor of chemistry, and Oswald Steward, Distinguished professor of anatomy & neurobiology, received a \$1 million grant from the W.M. Keck Foundation to develop new molecular tools to identify ribonucleic acids essential in learning and memory formation. The team's project involves building luminescent RNA molecules, allowing the researchers to observe the position and activity of the molecules in the brains of living, learning mice. The research will further the understanding of the roles of RNA and could contribute to discoveries for conditions like Alzheimer's disease.

UCI Researchers Awarded for Framework Encouraging Patient Voice & Personalized Care

Founding Dean Jan Hirsch, B.S. Pharm, Ph.D., and Associate Dean of Pharmacy Assessment and Quality, Jonathan Watanabe, Pharm.D., Ph.D., along with UCLA David Geffen School of Medicine Professor Derjung Tarn, M.D., Ph.D., received a Value Assessment Challenge Award from the PhRMA Foundation. The team developed a framework for shaping treatment goals based on patient values and shared decision making between patients and clinicians that is continuously refined with a population-based evidence assessment repository. Patient centered health services research has revealed gaps between the outcomes that patients report are most important to them and the outcomes traditionally measured in value assessments. The new framework's aim is to encourage a stronger patient voice in healthcare and more personalized approaches to care.



Program in Public Health

Future School of Population and Public Health



Researchers Delineate How Climate Impacts Vulnerable People

UCI-led efforts are continuing to shine light on climate-intensified health risks in California, particularly for our most vulnerable populations.

Using a combination of big data, advanced spatial analysis, statistical methods, fieldwork and community participation, Jun Wu, Ph.D., professor of environmental and occupational health, Shahir Masri, Sc.D., associate specialist in air pollution exposure and epidemiology, and other team members examined the relationship between wildfire impacts and socioeconomic vulnerability.

The researchers found that a greater proportion of low-income, elderly and Native American populations reside in areas hardest hit by fire.

Between 1980 and 1999, catastrophic wildfires happened an average of one and a half times per decade. From 2000 to 2019, incidents increased to seven per 10-year period and cumulative costs jumped from \$10 billion to \$75 billion.

Working with UC Davis researchers, the team published their findings in *International Journal of Environmental Research and Public Health*. The findings should prove important to policymakers and state agencies in charge of allocating resources.

In another study, Environmental Health Sciences Ph.D. student Yi Sun, Professor Wu and colleagues looked at how heat, air pollution and green space impact pregnancy. Their findings, published in *Environmental Research Letters* suggest that reducing exposure to extreme heat for pregnant women is important. Doing so before delivery appears to lower the risk of preterm birth for pregnant women with high exposure to air pollution and low exposure to green space. Babies born prematurely have a higher risk of health problems both at birth and later in life than babies who are not premature.

UCI-UCLA Collaborate on Major Health Disparity Research Center

Representing a boon to research into the disparity of cardiovascular disease, UCI and UCLA were awarded a \$17.9 million grant from the National Institute on Minority Health and Health Disparities to establish the UCLA-UCI Center for Eliminating Cardiometabolic Disparities in Multi-Ethnic Populations (UC END-DISPARITIES). For the next five years, researchers will study the factors that cause hypertension, diabetes, chronic kidney disease and other heart-related disease. Their focus will be on low-income and Latinx, Black, Asian, Pacific Islander and American Indian communities, which have some of the highest rates of cardiovascular disease and related deaths in the nation. The center, co-directed by Dean Bernadette Boden-Albala, will function through three integrated core groups (administrative, investigator development and community engagement) along with two research projects. An infrastructure will also be developed that supports small pilot projects to reduce cardiometabolic disparities, which community organizations and early career investigators can apply for. UC END-DISPARITIES also aims to mentor the next generation of health equity scientists.



Public Health Informatics Program Garners Major Award

The Program in Public Health is a member of a newly funded interdisciplinary program led by Tim Bruckner, Ph.D., professor of health, society, and behavior and Sora Park Tanjasiri, Dr. P.H., professor of epidemiology and biostatistics. The program's aim is to strengthen U.S. public health information technology (PHIT) efforts, and increasing representation of underrepresented communities within the public health IT workforce. UCI was one of 10 awardees funded by the Office of the National Coordinator for Health Information Technology (ONC) as part of its Public Health Informatics & Technology Workforce Development Program. UCI will partner with the Orange County Health Care Agency and others to develop a robust, inclusive and sustainable workforce development program with a national impact. The program at UCI is expected to train 445 students over four years, with more than 80% of those students coming from ethnically diverse communities.



UCI Public Health ranked #31 in the U.S. News and World Report rankings – a 10-slot jump over the last report

IISBR & CNLM Team Up for Better Way to Detect Early Cognitive Decline

The Institute for Interdisciplinary Salivary Bioscience Research (IISBR) and the Center for the Neurobiology of Learning and Memory have teamed up to develop a method that may help clinicians detect and treat Alzheimer's and dementia earlier. Investigators are looking at the associations between salivary cytokines – proteins that influence interactions between cells – and imaging biomarkers in elderly participants who suffer from the disorders. Research shows that cytokines can play an active role in initiating neurodegeneration by producing inflammatory responses. Pilot studies led by IISBR faculty member and researcher with the UCI Program in Public Health, Beth Thomas, Ph.D., and Program in Public Health epidemiology postdoctoral fellow, Georgia Parkin, Ph.D., have validated a salivary immunoassay to simultaneously measure 10 different cytokines. Preliminary research has demonstrated a correlation between salivary IL-6 and imaging markers in the cortex that are early signs of cognitive decline.

Susan Samueli Integrative Health Institute



Inaugural Samueli Scholars Award recipients

New Program Supports Faculty Investigating Integrative Health

Eight UCI faculty were named inaugural Samueli Scholars Award Program recipients for their commitment to advance basic, translational, or clinical scholarship in integrative health:

Geoffrey W. Abbott, Ph.D., professor of physiology & biophysics - investigating the molecular basis of botanical medicines and the role of ion channels as therapeutic targets.

Olivier Civelli, Ph.D., professor of pharmaceutical sciences and development and cellular biology- investigating the use of the corydalis yanhusuo extract in acute, inflammatory, and chronic pain.

Angela G. Fleischman, M.D., Ph.D., associate professor of medicine - investigating the role of inflammation on myeloproliferative neoplasm and assessing the anti-inflammatory properties of antioxidant supplement N-Acetylcysteine.

Kalpna Gupta, Ph.D., professor in residence of medicine- investigating the effects of global and indigenous armamentaria as potential novel therapeutic agents; investigating biomarkers of treatment response to various complementary interventions; assessing the use of

bioinformatics to quantify the effects of environmental factors and social connectivity.

Michelle Khine, Ph.D., professor of biomedical engineering - investigating the physiological signals of meditation in real time for adults and for children with severe autism.

Katrine Whiteson, Ph.D., associate professor of molecular biology and biochemistry, associate professor of pediatrics - investigating methods by which microbiome health strategies can be integrated into solutions for health and environmental problems.

Xiangmin Xu, Ph.D., professor and chancellor's fellow of anatomy and neurobiology - investigating the mechanism of acupuncture modulation of cardiovascular function to manage high blood pressure.

Sean Young, Ph.D., professor of emergency medicine, professor of Informatics - investigating the use of social data and AI for public health surveillance on issues such as HIV, substance use, mental health, and public safety/crime; designing and testing tech to improve health behavior among racial/ethnic and sexual minorities.



Integrative Health at the Forefront

Chad Lefteris is the CEO of UCI Health and Shaista Malik, M.D., is a professor in the School of Medicine, associate vice chancellor of the College of Health Sciences and executive director, Susan Samueli Integrative Health Institute. Here CEO Lefteris and Dr. Malik discuss UCI's commitment to integrative health and how patients have embraced the offerings.

Q: How has the patient experience at UCI been impacted by integrative health?

CEO Lefteris: Patients recognize that UCI Health is leading the way with cutting edge evidence-based care. We've trained thousands of our nurses and other clinicians in elements of integrative care. We continue to invest in hiring and training skilled integrative health professionals to further our Discover, Teach, Heal mission - and patients are very receptive.

Dr. Malik: Patients are increasingly choosing the Samueli Institute to support their individual health journeys because they trust the evidence-informed, whole health services our expert providers offer. They like that integrative services are part of the fabric of UCI Health, even in the hospital setting. We believe UCI Douglas Hospital may be the only academic hospital in the United States that continuously trains its inpatient nursing team to offer integrative services at the bedside.

Our success in inpatient acupuncture and integrative nursing services are shown through positive patient experience surveys as well as recognition by the Joint Commission surveyors who visited UCI and noted that some of these practices, specifically providing non-pharmacological options for pain management, were examples of best practices.

Q: What kind of response are you seeing from patients?

CEO Lefteris: After opening our first new site in Newport two years ago, the response from our patients has been outstanding! The new Susan Samueli Integrative Health Institute building on campus will further support that growth, making these unique services more easily accessible to our community.

Dr. Malik: We are also noticing an increase in demand for professional education - from programs like our new Academic Integrative Medicine Health and Wellness Coaching course to the Health Education to Advance Leaders in Integrative Medicine curriculum that prepares tomorrow's physicians to incorporate integrative concepts into their practices. In recent years, we've seen tremendous growth in visits to our clinics, demonstrating a real interest in whole health options across our community. In the past three years, patient visits have increased by more than 70 percent. We are also seeing more patients request treatments in the hospital setting, primarily to reduce pain, anxiety and nausea.

Q: A new flagship clinic is opening at UCI this fall. What can we expect from the new flagship location?

Dr. Malik: The Susan Samueli Integrative Health Institute's new flagship clinic will have significantly more space than our current Costa Mesa hub and allow us to serve more patients. We are especially excited about the Nutritional Education Center, which includes an expansive, state-of-the-art teaching kitchen, where nutrition education and culinary medicine skills will be facilitated by our executive chef and offered to patients, learners, and the community.

Q: As UCI integrative health continues to thrive, what we can look forward to?

Dr. Malik: As an academic institute, we are laser-focused on producing scientific evidence that increases understanding of how integrative treatments improve outcomes, who benefits and in what circumstances. To this end, the institute is excited about opening our research core in the coming year. This shared space and resource will foster collaborations among researchers across the UCI campus.

We were also selected to be the data coordinating center for a 19-site integrative health practice-based research collaborative, BraveNet. As a member of the consortium, we can also look forward to participating in multi-site integrative health clinical trials at UCI.



Blazing Trails in Stroke Care & Detection

Stroke is among the leading causes of death and disability in adults worldwide, killing about 140,000 Americans each year. That's why UCI is proud of its stellar commitment to stroke care and detection.

The American Heart Association/American Stroke Association recognized UCI Health Comprehensive Stroke and Cerebrovascular Center with its 2021 Get With The Guidelines® Stroke Gold Plus with Honor Roll Elite Plus and Type 2 Diabetes Honor Roll award for providing the highest standard of stroke care according to nationally recognized, research-based guidelines.

UCI researchers also continue to blaze trails with stroke detection and treatment. A new five-year study, Comparison of Artificial Intelligence Based Large-Vessel Occlusion Solutions, will examine how the use of artificial intelligence (AI) and machine learning can expedite the detection of stroke in diagnostic imaging, optimize clinical workflows for stroke care, and improve patient outcomes. The study, sponsored by Canon Medical Systems USA, will evaluate acute stroke triage and identify areas for improvement.

Epilepsy Center Gives an Artist a Second Chance

UCI Health Comprehensive Epilepsy Center is OC's only academic epilepsy program and one of the leading epilepsy centers in Southern California. Daily, some of the nation's best seizure specialists work to drastically improve the lives of patients like Alan Powell.

Powell, a fine artist, was diagnosed with a seizure-disorder that was poorly controlled by medication. His seizures and the side effects of the medications meant that Powell could no longer paint. In fact, he often landed in the hospital due to the severity of his seizures. Powell had all but given up hope when a doctor near his Joshua Tree home encouraged him to make the trek to UCI Health. That's where he met neurosurgeon Dr. Sumeet Vadera and Dr. Mona Sazgar, a nationally regarded neurologist and epileptologist. After a series of tests, the UCI doctors were able to pinpoint Powell's seizures to his right temporal lobe, a part of the brain responsible for visual and spatial memory, and offer a surgical solution. Two surgeries later, Powell became seizure-free. Gradually, he's been able to reclaim his life as an artist and reports that he's doing some of the best work of his life. Bravo, Alan Powell!



Alan Powell



Stem Cells May Offer Hope for Parkinson's

In a first-in-human clinical trial, UCI Health neuroscientists are assessing the safety of dopamine-producing stem cells surgically implanted in the brains of patients whose advanced Parkinson's disease has progressed to the point where existing medications no longer work to control symptoms. The treatment, MSK-DA01, consists of embryonic stem cells that have been grown and developed into neurons that produce dopamine, a naturally occurring brain chemical that decreases with Parkinson's disease. Claire Henchcliffe, M.D., D.Phil., is chair of the UCI School of Medicine's Department of Neurology and principal investigator for the trial. In pre-clinical study animal models, Parkinsonian movement symptoms — problems of slowing and coordination — were treated and sustained with the stem cells. Establishing the treatment's safety and efficacy are the goals of the phase 1 clinical trial, which is sponsored by BlueRock Therapeutics. Over the next two years, researchers will examine whether the implanted stem cells survive and whether they improve participants' motor functions.

UCI Provides a Resource for COVID Long Haulers

Responding to a community need, UCI Health launched the COVID Recovery Service at outpatient offices in Tustin and Costa Mesa. The program's aim is to help the estimated 10% to 30% of people who have COVID-19 symptoms or complications well after their initial illness. People with persistent symptoms, also known as "long haulers," continue to experience complications such as fatigue, shortness of breath, brain fog, difficulty sleeping, joint pain, anxiety and depression sometimes months after their infection. Often, the patients are uncertain where to turn. COVID Recovery Service provides that resource. The program offers a comprehensive evaluation, referral to specialists, follow-up care and monitoring throughout the course of recovery. In addition to treatment, patients are often offered helpful tools such as free mindful and exercise classes and access to support groups. COVID Recovery Service also educates community doctors on how to identify and treat long COVID.

UCI Health – Irvine



Phase One of New Medical Complex Nears Completion

A long time in the making and finally it's here – well, at least phase one is. UCI and UCI Health's new \$1.3 billion medical complex on the north end of the Irvine campus will start serving its first patients soon. Here's what the community has to look forward to:

Phase One (2023 opening)

- The 168,000-square-foot Joe C. Wen & Family Center for Advanced Care, which will include adult primary and specialty care services, comprehensive laboratory and radiology facilities, imaging services and urgent care.
- The Center for Children's Health, which will provide comprehensive pediatric outpatient services, including pediatric primary care, subspecialty clinics, rehabilitation and simulation services. In addition, the facility will advance UCI's longstanding commitment to the region's autism community when the Center for Autism & Neurodevelopmental Disorders relocates there.
- The 225,000-square-foot Chao Family Comprehensive Cancer Center and Ambulatory Care building, which will offer 10 outpatient operating rooms and a state-of-the-art cancer center, rooted in the innovation and excellence of Orange County's only National Cancer Institute-designated comprehensive cancer center.

Key clinical programs at the new complex will include diabetes care, oncology, neurology, neurosurgery, orthopedics, spine surgery and advanced digestive health services. The new medical center also will be a hub for participation in OC's largest clinical trials portfolio – including early-phase trials – in cancer, neurosciences, stem cell-derived treatments, internal medicine and more.

Phase Two (2025 opening)

- A 350,000-square-foot, 144-bed acute care hospital with an emergency room and 8 operating rooms. It will be the future home of Orange County's only adult hematopoietic stem cell/bone marrow transplant program.



Ralph and Sue Stern

Extraordinary Philanthropists Ralph and Sue Stern Support New Cancer Center

Ralph and Sue Stern have given more than \$12.5 million to the School of Medicine and UCI Health. In 2014, their gift established the Sue and Ralph Stern Center for Cancer Clinical Trials and Research at the Chao Family Comprehensive Cancer Center. In 2008, the Sterns turned to UCI Health for help when Sue Stern was diagnosed with a spinal cord tumor. Following her successful treatment, they made two generous gifts in support of ongoing research by UCI Health Drs. Mark Linskey and Daniela Bota for malignant spinal cord and brain tumors. In recognition of a recent gift and Ralph and Sue Stern's longtime support, a cancer clinic floor located in the Chao Family Comprehensive Cancer Center and Ambulatory Care building, set to open in late 2023 at the new UCI Health – Irvine medical complex, will bear their names. The Ralph and Sue Stern cancer clinic floor will include 36 private exam rooms integrating research, prevention and advanced diagnostics, treatments, and rehabilitation programs.

Nancy and Geoffrey Stack Family Foundation to Support UCI Health Hospital, Cancer Center in Irvine

UCI Health is pleased to announce a \$2 million gift that will benefit the emergency department in the new \$1.3 billion UCI Health – Irvine medical campus being built on the corner of Jamboree Road and Birch Street in Irvine. The gift, funded by the Nancy and Geoffrey Stack Family Foundation, will name the patient welcome areas in the emergency department of the planned acute care hospital and at the Chao Family Comprehensive Cancer Care and Ambulatory Care building. "UCI Health is a beacon of hope in Orange County," said Nancy Stack. "The new medical complex will bring hope and healing to our region and will save lives. Jeff and I are honored to support such a worthwhile cause."



Nancy and Geoffrey Stack (center) with UCI Leadership at the UCI Health – Irvine groundbreaking ceremony

UCI Health Joins Forces with Kindred for New Irvine Rehab Hospital

UCI Health and Kindred Rehabilitation Services (KRS), a business unit of LifePoint Health, have entered a joint venture to construct and operate a 52-bed, 68,000-square-foot inpatient rehabilitation hospital at 17931 Von Karman Ave., in Irvine.

The UCI Health Rehabilitation Hospital, slated to open in late 2025, will treat patients recovering from conditions such as stroke and traumatic brain and spinal cord injury, as well as trauma, burn and orthopedic patients.

KRS will manage the hospital's day-to-day operations, and patients will receive leading-edge care provided by UCI Health physicians and clinical staff, all in private rooms and state-of-the-art rehabilitation facilities. This new facility will considerably expand the UCI Health inpatient rehabilitation capacity from its current rehabilitation unit at UCI Medical Center in Orange. It will also enable clinicians to conduct clinical research, including clinical trials, and advance new rehabilitation technologies. This new facility will further support the new UCI Health – Irvine medical complex and draw patients from across Orange County.

Research Centers and Institutes of Health



Institute for Precision Health

The IPH consolidates expertise across UCI in the application of data science, machine learning-artificial intelligence, genomics-multiomics and public health measures to individualized healthcare. The IPH leverages the collection, curation, access and analysis of multimodal data to deliver the most effective health and wellness strategy for each person in a whole person approach. In doing so, the institute confronts the linked challenges of health inequity and the high cost of care.

Center for Clinical Research

The UCI Center for Clinical Research is a premier clinical research organization providing life-saving clinical trials by strengthening and accelerating the pathway of discovery from bench to bedside. Aligned with a top academic medical center, the CCR is uniquely positioned to deliver world class clinical care and access to innovative trials designed by investigators and industry partners to treat the most complex medical conditions.

Institute for Clinical and Translational Science

The ITCS is funded by the National Institutes of Health (NIH) under the Clinical and Translational Sciences Award (CTSA) program. The ICTS functions as a local centerpiece for the national program, and is dedicated to advancing scientific discovery and medical breakthroughs. Collectively, our goal is simple: to accelerate these discoveries from the lab and translate them into life-altering medical care.



Research Centers and Institutes of Health

Sue & Bill Gross Stem Cell Research Center

The SCRC provides world-class, state-of-the-art infrastructure to support basic, translational, and clinical stem cell research and training, with the vision of accelerating the discovery of stem cell and regenerative medicine therapies and their delivery to patients. The SCRC is the most advanced center in California for discovery and translation of stem cell and regenerative medicine therapeutics for neurological disease and injury.

Chao Family Comprehensive Cancer Center

As an NCI-designated comprehensive cancer center, the CFCCC integrates world-class research, prevention and the most advanced diagnostics, treatment and rehabilitation programs to provide the best possible care for patients and their families. Designated as "comprehensive" in 1994, and renewed in 2021, the CFCCC continues to serve as a vital resource for Orange County and surrounding areas in the fight to alleviate the burden of cancer.



Chao Family Comprehensive Cancer Center Recognized Again as Top Center

The National Cancer Institute (NCI) once again recognized the UCI Chao Family Comprehensive Cancer Center as one of the nation's top cancer centers, renewing its "comprehensive" designation. The UCI Health Cancer Center is among 53 NCI-designated U.S. comprehensive cancer centers and the only one based in Orange County. An NCI designation means patients have access to leading-edge treatments, personalized therapies and clinical trials. UCI Health cancer physicians are specialists in their respective cancer fields who collaborate with researchers to develop new approaches to detecting, preventing and treating cancer for all populations. Recent cancer center initiatives include establishing Orange County's only Hematopoietic Stem Cell Transplantation and Cellular Therapy Program for adults with blood-based malignancies and increasing early detection rates for cancer through its Advancing Cancer Care Together program, which was developed by the Cancer Center's Office of Community Engagement to improve care for underserved communities in Orange County.

Leadership

Aileen Anderson, Ph.D.
Director
UCI Sue & Bill Gross
Stem Cell Research Center

Maheswari Senthil, M.D., FACS
Medical Director
UCI Center for Clinical Research

Eric Vilain, M.D., Ph.D.
Director
Institute for Clinical and
Translational Science

Richard A. Van Etten, M.D., Ph.D.
Director
UCI Chao Family Comprehensive
Cancer Center

Alpesh Amin, M.D., MBA
Co-Director & Medical Director
UCI Institute for Precision Health

Leslie Thompson, Ph.D.
Co-Director
UCI Institute for Precision Health

Research Centers and Institutes of Health



CCR Helps Launch ACT@POC to Diversify and Streamline Clinical Trials

Through the Center for Clinical Research, UCI is home to one of the leading health centers on the West Coast conducting clinical research. Now we are also proud founding members of the Advancing Clinical Trials at the Point of Care coalition. ACT@POC will generate high-quality clinical research evidence in real time to better evaluate treatments and therapeutics, including those to treat COVID-19. Its members will engage a broader, more diverse group of patients and providers and develop digital health tools that make clinical trials simpler to run and more accessible to patients. The multi-stakeholder coalition aims to drive implementation of large-scale clinical trials at the community level – in the doctor’s offices and care facilities where most of the U.S. population receives care. Founding members of ACT@POC also include the Duke-Margolis Center for Health Policy, the MITRE Corp., the Cure Drug Repurposing Collaboratory, Duke University Health System, Emory University’s Morningside Center for Innovative and Affordable Medicine, Intermountain Healthcare, the Mayo Clinic and the Broad Institute.

Skin Bio Resource Center Awarded Grant for Next Gen Research

The National Institute of Arthritis and Musculoskeletal and Skin Diseases awarded a team from the UCI Skin Biology Resource Center a five-year, \$970,000 grant to launch an interdisciplinary skin biology training program. The program takes advantage of the expertise of UCI faculty in the areas of skin biology, systems biology and imaging. The aim is to develop skin biologists who will integrate bioengineering, imaging and computation into their work to help make breakthroughs in skin biology.

The grant funds three graduate students and one postdoctoral fellow, who will pursue a cross-disciplinary project at the intersection of skin biology and either systems biology, bioengineering or imaging, guided by a skin biologist and a mentor from a complementary field. The program includes laboratory-based research, lectures, weekly data presentations, a seminar series and a yearly symposium, as well as career development activities tailored to trainees’ interests and career goals. UCI’s Sue & Bill Gross Stem Cell Research Center is administering the grant.

\$5.5M Grant Supports Spinal Cord Injury Therapeutic

The California Institute for Regenerative Medicine awarded Aileen Anderson, director of UCI’s Sue & Bill Gross Stem Cell Research Center and professor of physical medicine & rehabilitation, a 30-month, \$5.5 million grant for development of a new human neural stem cell therapeutic for treating chronic cervical spinal cord injury. In the U.S. there are about 285,000 individuals living with paralysis due to traumatic spinal cord injury and there are no FDA-approved treatments. Anderson’s work involves integrating transplanted human neural stem cells to improve locomotor function. Increasing a single level of spine function can make a significant positive impact on both quality of life and the economic burden of disease for patients.

IPH: Make Way for a Transformation

UCI launched the Institute for Precision Health, a campus-wide, interdisciplinary endeavor that merges the university’s powerhouse health sciences, engineering, machine learning, artificial intelligence, clinical genomics and data science capabilities. IPH’s objective is to identify, create and deliver the most effective health and wellness strategy for each individual person and, in doing so, confront the linked challenges of health equity and the high cost of care. The three interacting domains of impact through IPH are Practice Redesign, Deployable Equity and Informed Policy on the bed of enhanced patient experience and outcomes. Considered the next great advancement in healthcare, IPH will offer breakthroughs in understanding diseases in subgroups of patients that incorporate their genetics, environment and other factors that influence health so that clinicians can define diseases better, understand them better and treat them better.

ICTS Welcomes Director Eric Vilain

This fall, Eric Vilain, M.D., Ph.D., joins UCI as professor in the School of Medicine Department of Pediatrics, associate vice chancellor for Clinical and Translational Research, and director of the Institute for Clinical Translational Sciences (ICTS).

Dr. Vilain will ensure ICTS fulfills the broad NIH Clinical and Translational Science Awards program mission, which means serving as one of the nationwide hubs dedicated to improving the translational research process to quickly get more treatments to more patients. ICTS also collaborates with other organizations to catalyze innovation in training, research tools and processes.

Dr. Vilain comes to UCI with over 20 years of experience overseeing large collaborative research and innovation projects, leading a clinical division, chairing a medical school department, spearheading global healthcare initiatives and demonstrating a passion for data-driven transformative research. He most recently served as the James A. Clark Distinguished Professor of Molecular Genetics, Children’s National Hospital, Director, Center for Genetic Medicine Research, Children’s National Hospital, Professor and Chair, Department of Genomics and Precision Medicine, George Washington University, and Faculty investigator, Institut National de Recherche Biomédicale and University of Kinshasa, DR Congo.

Precision Health



Precision Health Epoch Officially Begins

Long in the making and now ready to roll, UCI launched the Institute for Precision Health (IPH) in January 2022, co-directed by Leslie Thompson, Ph.D., Donald Bren Professor and Chancellor's Professor in psychiatry & human behavior and neurobiology & behavior and Alpesh N. Amin, M.D., MBA, chair of medicine and executive director of hospital medicine. At the core of IPH is the collaboratory for health and wellness (powered by Syntropy), which houses the dynamic analytics platforms and patient-controlled data.

Precision health endeavors will tap into campuswide resources – health sciences, engineering, statistics, machine learning, artificial intelligence, clinical genomics, data science, public health, and healthcare delivery system capabilities – to confront the linked challenges of health equity and the high cost of care. Operating as an institute without walls, IPH aims to eventually have a brick-and-mortar home on campus, which will serve as a hub to educate data-informed clinicians so they can practice at the top of their licenses, train data scientists to collaborate with clinical practitioners to develop the analytic tools that will drive the field, house personnel to facilitate translational research, and serve as a location for both community outreach and industry collaborations.

“What we are doing in the Institute for Precision Health is perhaps the most important step that we will take in this generation to improve health and well-being. The ever-evolving capabilities of IPH herald a future of personally-tailored care that fundamentally alters the healthcare landscape to place the patient at the center and in control.”

— Steve A. N. Goldstein, M.A., M.D., Ph.D., FAAP
UCI Health Affairs Vice Chancellor

3 Questions for IPH's New Medical Director

Alpesh N. Amin, M.D., MBA professor and chair of medicine, founded and developed UCI Health's innovative hospitalist program. Now he has taken the lead as co-director & medical director of the new Institute for Precision Health, an endeavor that marries UCI's powerhouse health sciences, engineering, machine learning, artificial intelligence, and data science capabilities. Here Dr. Amin answers a few questions about IPH and its mission.

Q: Data is at the heart of precision medicine. Can you explain?

Dr. Amin: Data is at the heart of almost anything successful. If I'm developing a new program, there must be financial sustainability. I need data to substantiate that. When I'm doing research, there's obviously data around that. When I'm treating patients, I want to deliver the highest quality healthcare and the best results. I need data to define my notion of what quality is. I think we all know by now that data is essential. It's just with precision medicine, we'll be able to do more with data, and eventually it will lead to better care and more medical breakthroughs. I'm in the business of creating resources that will allow us to further innovate in health and patient care, and ultimately translate that knowledge and approach forward. IPH's work, which hinges on using data, will do this.

Q: You've said IPH is purpose-driven. What do you mean?

Dr. Amin: Everyone who is working with IPH sees the goal as healing patients. We will focus on projects that produce impact. And by that, I mean better health in people and the community. Our goal is to deliver the most effective health and wellness strategy for each person – and, along the way, confront the linked challenges of health equity and the high cost of care.

Q: Do you expect breakthroughs from IPH quickly?

Dr. Amin: The speed at which we advance always depends on resources, vision, culture and so many other factors. The university's commitment and very formation of IPH is a catalyst to deliver speed and agility, that leads to health data delivering value in a way that creates disruptive innovation for the betterment of patients and the community. With eight functional units, I expect IPH to have quick breakthroughs leveraging the creation of processes, tools, outcomes, and experience impacting the spectrum of care delivery.



Alpesh N. Amin, M.D., MBA

Interprofessional Education and Practice



New high-fidelity simulation center

All Together Now: The Future of Interprofessional Education

Interprofessional Education (IPE) – healthcare professionals learning and working together – is a top priority in the College of Health Science. Jan Hirsch, professor of clinical pharmacy and founding dean of the School of Pharmacy & Pharmaceutical Sciences, and Mark Lazenby, professor of nursing and the dean of the Sue & Bill Gross School of Nursing, teamed up to answer a few questions about IPE and why it's integral.

Q: What is Interprofessional Education and why is it important to the future of team-based care?

Dean Hirsch: If you think about many healthcare settings, patients get care from a team of different specialists – doctors, nurses, pharmacists, and more. Since this is the case, IPE can expand and hasten a positive impact on patient care since students are training together with other healthcare and public health professional students long before working together in a patient care setting. Students learn the specific roles of each profession – the expertise, responsibilities, protocols, and the workflow – as well as how to capitalize on synergies to create positive, patient-centered outcomes not possible when working in silos. The whole is greater than the sum of its parts, and when our students learn together, they will develop new ways to provide comprehensive, coordinated care to improve patient overall health and wellbeing.

Q: What IPE opportunities does the COHS provide for students?

Dean Hirsch: For our students, there are opportunities for

interprofessional development and training within courses and during experiential learning activities delivered by faculty across all four schools. Because of our unique structure, students also have the opportunity to work and learn from professionals within the UCI Health and the Susan Samueli Integrative Health Institute.

Q: What impact do you anticipate the new high-fidelity simulation center will have for students?

Dean Lazenby: The new center will offer high-fidelity simulation experiences and give our students the opportunity to work in extremely realistic spaces, watch recorded simulations to improve performance, engage more students and standardized patients and create simulations that mimic the home environment.

Q: How will the new center facilitate IPE for all students within COHS?

Dean Lazenby: The new simulation center will offer spaces that mimic the hospital setting, including a space designed as a pharmacy with the potential for compounding medications, collaboration spaces where “family meetings” can occur and examination rooms. These spaces will enable us to engage all professions together in areas that are identical to the hospital and clinic to allow more realistic interprofessional interactions promoting communication and collaboration.



Health Sciences Pitches in to Vaccinate Nearly 400 Students Against Flu

Volunteers from the Program in Public Health, the Sue & Bill Gross School of Nursing, the School of Pharmacy & Pharmaceutical Sciences, and the Student Health Center worked together to provide flu shots to nearly 400 students in a three-day, pop-up clinic at Anteater Plaza. The idea for the pop-up clinic started with the need to conveniently administer flu shots to students who hadn't found the time to visit their healthcare provider or the UCI Student Health Center. A UC Policy, implemented in October, stated that all students, faculty, and staff were required to receive a flu vaccine to stave off a flu outbreak amid the ongoing pandemic.

Students Train to Confront Discrimination

An interdisciplinary research team dedicated to helping students recognize, respond to, and prevent microaggressions in the clinical setting has come together for the new program: READ What is SAID: An Inter-professional Approach to Clinical Assessment. The program trains students across the Susan & Henry Samueli College of Health Sciences about empathy, awareness, and communication skills needed to recognize and confront discrimination in ways that supports the needs of both the patient and provider.

The Susan & Henry Samueli College of Health Sciences and UCI Health are building bridges across disciplines to advance a transformative model of discovery, teaching and healing. Our health sciences students benefit from a unique team-based, interprofessional approach to education.

Interdisciplinary Research



Breaking Ground on a Bright Future for Translational Research

Big things are happening on the southwest side of campus. That is the site of Falling Leaves Medical Innovation Building, a future 200,000-square-foot facility that will be used for translational health sciences research. Made possible by a \$30 million donation from Dr. Adeline Yen Mah and Professor Robert Mah's Falling Leaves Foundation, the building will be the largest research facility on campus and one of the largest in the western United States. The building will offer state-of-the-art wet labs for basic and translational research and training, and teaching spaces that bring UCI's collaborative health alliance model to life – with experts across health disciplines working side-by-side.

Michael J. Stamos, M.D. is the dean of the School of Medicine. He came to UCI in 2002, serving as a professor and the John E. Connolly Chair in Surgery before being named interim dean of the School of Medicine in 2016 and dean in 2017. Here Dr. Stamos weighs in on the importance of scientists working across disciplines to bring innovation to the world.

Q: How involved is the College of Health Sciences in interdisciplinary research across the UCI campus and beyond?

Dean Stamos: There are many collaborations between COHS schools and other schools, as well as with other universities beyond our campus. We truly believe in the power of interdisciplinary research. In fact, we incentivize collaboration. We hold joint retreats – for example Biological Science and

School of Medicine retreats – as well as offer grants specifically for faculty who cross schools or sites to work together.

Q: How will the new Falling Leaves Foundation Medical Innovation Building provide opportunity for growth and scientific advancement for the COHS and UCI?

Dean Stamos: The Falling Leaves Foundation Medical Innovation Building is a perfect example of how much we're doing to encourage interdisciplinary work. That building will be used to bring together seemingly disparate disciplines to join forces to solve problems that would be difficult or impossible for a scientist in a single discipline to do. I expect we'll see much impressive work coming out of that building.

Q: Will the new building also impact translational research?

Dean Stamos: The entire focus of the building will be translational research – bringing together basic scientists and physician scientists to work on a common problem. Translational research is where the bench meets the bedside. It is the catalyst that transforms basic science research into actionable innovations to improve the human condition. Phil Felgner's work, that ultimately led to the mRNA vaccine, is a great example. The building will certainly encourage more of this, which is phenomenal.

Researchers Look at New Ways to Predict Addiction Vulnerability

An interdisciplinary research team including the School of Biological Sciences, the School of Medicine and the Irvine Center for Addiction Neuroscience, is part of a five-year project to understand the opioid crisis. The researchers are investigating how early-life adversity influences epigenetics, or experience-induced changes in gene expression, and how they affect the likelihood of adult addiction. Researchers will compare vesicles (cell-produced droplets containing proteins and microRNAs), in blood samples and the cerebral spinal fluid of rodents to learn if the blood holds clues about an individual's risk of addiction or other mental disorders. If so, it could mean a blood screening might be able to prevent addiction vulnerability.



Researchers Discover How to 'Turn Off' Certain Skin Cancers

It's elegant, but it took a decade-plus of research made possible by National Institutes for Health and the UCI Anti-Cancer Challenge. Anand Ganesan, M.D., UCI Health dermatologist and School of Medicine professor of dermatology and biological sciences, and Marco De Vivo, group leader of the Molecular Modeling & Drug Discovery Lab at the Italian Institute of Technology (IIT) in Genoa, have discovered how to flip the "off-switch" for certain chemotherapy-resistant Stage III melanomas. Their work, based on computational models, used a genetic approach to find out which signaling pathway was integral for the cancers and then how to use medication to interfere with the signal. The researchers and two other partners have now launched Alyra Therapeutics to develop the medication further.

Researchers Use AI to See Color in the Dark

It all started with this question: Is there a way to do everything in the dark? That's what led Andrew Browne, Ph.D., M.D., clinical assistant professor of ophthalmology in the School of Medicine, and computer scientist Pierre Baldi, Ph.D., Distinguished Professor in the department of computer science, to use artificial intelligence to train a night-vision system to identify the infrared fingerprint of colors in the dark. The researchers, who published their findings in PLOS ONE, experimented with a camera that was sensitive to both visible and near-infrared light and connected to a convolutional neural network. They used this system to analyze 140 images of faces printed using cyan, magenta, yellow and black inks lit under multispectral illumination spanning both visible and infrared wavelengths. In effect, they successfully predicted and reconstructed how faces in pitch-black settings would look in visible light. The technology may be useful for military and medical uses – and of course recreational.

Researchers Explore Links Between Enzyme, Viruses and Cancer

A study led by Rémi Buisson, Ph.D., assistant professor in the UCI School of Medicine Department of Biological Chemistry, along with graduate student Sunwoo Oh and postdoctoral fellow Elodie Bournique, Ph.D., has revealed different ways that cells regulate the enzyme APOBEC3A.

Their work illustrates how viral infection triggers a specific innate immune response to activate APOBEC3A expression in human

cells and how this is important in the elimination of the virus.

The enzyme is linked to genetic changes that present in up to 80 percent of certain cancer types – including lung, breast and bladder cancers. By understanding how cancer cells and viral infections regulate APOBEC3A expression, the researchers are poised to take the next step toward finding new therapeutic strategies to fight cancer.

Capital Projects



UCI Health Sciences Complex

Preparations Underway for Opening of the New UCI Health Sciences Complex

This fall 2022, UCI is planning a soft-opening of the Susan & Henry Samueli College of Health Sciences (COHS) and the Sue & Bill Gross Nursing and Health Sciences Hall (N&HSH). Construction on the state-of-the-art complex began in February 2020. The 9-acre complex has a \$185 million budget and includes a 200-seat auditorium, classrooms, high-fidelity simulation center, faculty research, and administrative space that will house schools and units within the Susan & Henry Samueli College of Health Sciences along with a new location for the Susan Samueli Integrative Health Institute (SSIHI).

The Susan Samueli Integrative Health Institute opens its expansive new site in October 2022 to continue leading the

nation in scientific research, education and clinical care that advances the discipline of whole-person, evidence-based integration of complementary and conventional medical to support lifelong wellness.

The new institute location will serve as the hub, allowing for expanded patient care, research, and community initiatives. The SSIHI offers patients proven effective strategies including meditation, acupuncture, nutrition, exercise, mind-body techniques, massage as well as lectures and classes for tai chi, mindfulness and yoga.

UCI Health Sciences District

Faculty research and health sciences administrative offices, classrooms, interprofessional high-fidelity simulation center, 200-seat auditorium, and new location for the Susan Samueli Integrative Health Institute, and future cross-disciplinary research facility to enhance discovery and translational research.



Fall 2022
Susan & Henry Samueli
College of Health Sciences



Fall 2022
Sue & Bill Gross Nursing
and Health Sciences Hall



Est. 2025
Falling Leaves Foundation
Medical Innovation Building

UCI Health – Irvine

The 800,000-square-foot medical complex will be anchored by a state-of-the-art hospital, which will offer 24-hour emergency care and personalized cancer treatments. Our world-renowned experts will also deliver exceptional care in other specialties, such as digestive diseases, neurosciences and orthopaedics



Late 2023
Joe C. Wen & Family
Center for Advanced Care



Late 2023
Chao Family Comprehensive Cancer
Center and Ambulatory Care



Late 2025
Hospital with
Emergency Department

Health Equity



Advancing Health Equity

Since 2019, Bernadette Boden-Albala, M.P.H., Dr.P.H., has been the director of the Program of Public Health and founding dean of the future School of Population and Public Health. Dean Boden-Albala is a renowned researcher and administrator whose efforts to reduce health disparities for America's disadvantaged became a blueprint for community-based stroke and heart disease prevention. Here she answers a few questions about health equity, a topic at the very center of her life's work.

Q: Why is health equity critical to society?

Dean Boden-Albala: We know that while there are genetic factors that influence health, it is mostly influenced by social and environmental factors. As a society, we've placed some people and communities in positions where access and resources to all the things needed to optimize health are simply not equal. For example, we know that when we look at heart disease, an affluent white male will have a very different experience with the disease when compared to someone who is not affluent and perhaps a minority in Orange County. The disease experience, the disease prognosis, the access to resources, and many other factors are different. That's how health equity or inequity manifests itself.

Of course, meanwhile, everything that we stand for in this country is about our right to a good and healthy life. So, rooting out inequity when it comes to health is fundamental to our country's values.

Q: Can you explain a bit about 'deployable equity'?

Dean Boden-Albala: Absolutely. Deployable equity means that we're out engaging community stakeholders and health-equity groups so that our researchers and clinicians work with the community to create solutions that truly work. Public health has really led the call to build these meaningful relationships because we know it's the only way to create sustainable change.

Q: How does the call for health equity impact all of UCI Health Affairs?

Dean Boden-Albala: Everybody in the College of Health Sciences understands that our aim is to narrow the disparities gap in the health and wellbeing of underserved and at-risk populations. Only in true partnership with our communities can we begin to realize optimal and sustainable solutions where everyone can achieve health and wellbeing in Orange County and beyond.

Nursing, pharmacy, public health, medicine...we've worked to ensure that everyone is highly aware of how structural bias impacts health and wellbeing. UCI researchers and clinicians are focused on different strategies to overcome bias and create a healthier Orange County. Awareness and focus on equity play a key role in everything – from how someone designs a clinical trial to how nurses are trained or which initiatives we undertake. Health equity is our fundamental goal and at the core of our mission.



Confronting Racism in Healthcare

Dr. Sora Tanjasiri shares her parents' immigration story from Korea to the U.S. and how they faced racism on their route to achieve higher education and success. Tanjasiri reports how these same prejudices have invaded America's healthcare system and how biased narratives can cause physical harm. Tanjasiri addresses how the recent launch of the Institute for Precision Health tackles these biases.



Disparities in Marginalized Communities

Professor Cheryl Wisseh, clinical pharmacist, highlights the importance of breaking down the barriers of structural racism in primary care, offering solutions to address some of these disparities through clinical practice, research, community solutions, and advocacy.



High-Quality Care in FQHCs

Joyce Yu-Chia Lee, Pharm.D. and Sarah McBane, Pharm.D., advocate for the importance of improving the quality of care in underserved areas. Solutions expanded upon include increasing access to digital care and increased education.



Climate Change as a Social Determinant of Health

With growing concerns around unhealthy conditions caused by climate change, Professor Jun Wu says that if society does not act now, the devastation caused by fires, floods, rising temperatures, and mass displacement will be catastrophic to millions of people.



Healthcare in Latinx Communities

Led by Dr. Charles Vega, the UCI PRIME-LC program has been used as an exemplary model to address healthcare disparities in the Latinx community. This program's goal to achieve better healthcare is tackled through putting the primary focus on shaping the healthcare workers who will serve this community.



COVID-19 Vaccine Hesitancy

Countering vaccine hesitancy is the key to reducing infection and hospitalization rates. Bernadette Boden-Albala, dean of the future UCI School of Population and Public Health, provides strategies for healthcare providers to utilize to encourage vaccination and to better reach those in underserved communities.



Transgender Health Equity

Many transgender children avoid medical care for fear of discrimination. Brit Cevantes highlights the healthcare challenges that gender-nonconforming children face and the policies and programs UCI has put in place to confront this issue.

Advancement and Engagement



Joe C. Wen & Family Center for Advanced Care

Joe C. Wen & Family Donate \$20M to Support UCI Health

UCI Health welcomed Joe C. Wen and family to the ranks of some of its most fervent supporters. Orange County businessman Joe C. Wen, founder and chief executive of Sakura Paper, Inc., a division of Formosa Ltd, gifted UCI Health \$20 million for the UCI Health outpatient clinical facility at the new UCI Health — Irvine medical complex. The facility will be named the Joe C. Wen & Family Center for Advanced Care. The five-story, 168,000-square-foot outpatient facility on Jamboree Road will offer adult and pediatric specialty care, urgent care, digestive health,

neurosciences and comprehensive laboratory and radiology imaging services in one convenient location. An outdoor garden and café will enhance the patient and visitor experience. Children and adults will benefit from one-stop outpatient healthcare. The Center for Children’s Health will consolidate primary and specialty pediatric services in one easily accessible facility and offer unparalleled continuity of care from birth through early adulthood. This is the largest gift to UCI Health by a donor under age 50 and is among the largest-ever gifts to UCI.

“UCI Health is building Orange County’s next chapter of healthcare in Irvine. The Joe C. Wen & Family Center for Advanced Care will provide residents of coastal and southern Orange County access to the comprehensive care in critical clinical specialties that are only available from an academic health system.”

Chad T. Lefteris, UCI Health CEO

Cancer Researcher Hung Fan and Husband Create Legacy

After devoting decades to the university, Professor Emeritus Hung Fan and his husband Michael Feldman made a bequest worth an estimated \$1.5 million to be split equally between the Department of Molecular Biology and Biochemistry, Fan’s home department, and UCI’s Cancer Research Institute, which he founded and directed for three decades. Fan helped establish the university as a world-class cancer center and advanced research into how viruses cause cancer. Fan previously gave \$50,000 toward the construction of Sprague Hall among his many other annual gifts.



Left to right: Michael Feldman and Professor Emeritus Hung Fan

The people we serve inspire us to explore uncharted territory and make the impossible possible. Working hand in hand, we have the power to achieve what others only imagine. The time to act is now, and we are ready to lead the way.



CareConnect+, World-Class Care for You

At UCI Health, we are proud to offer world-class care to our patients. CareConnect+ provides qualifying donors access to compassionate, trusted advocates within the UCI Health system who will help them navigate through their entire healthcare journey. This is our way of saying thank you to the generous, philanthropic leaders in our community who are shaping UCI and UCI Health’s brilliant future.

CareConnect+ program director Susan Anderson and her team advocate for patients and their families throughout the continuum of care. Because of the nature of our integrated UCI Health system, our CareConnect+ team is able to expedite care in ways other health systems cannot. We will be there for you and your family throughout your entire healthcare journey.

UCI Health Affairs ONE HEALTH Vision



“Our first-of-its-kind model of collaboration of health disciplines throughout the whole of UCI Health Affairs, empowered by alliances across the university, facilitates the mission to Discover. Teach. Heal. We are creating the future of healthcare — patient-centered, team-based, whole-person, precision-driven, and community-serving care provided by a diverse and united healthcare workforce.”

— Steve A. N. Goldstein, M.A., M.D., Ph.D., FAAP
UCI Health Affairs Vice Chancellor

Three Strategic Pillars

ONE HEALTH is the vision that directs the Discover • Teach • Heal mission and empowers three strategic priorities, or pillars, that are shared across all Health Affairs units for the next five years:

1 Future Health: Innovations in Education & Research

Innovating from bench to bedside in education and research, focusing on arenas where UCI can distinctively push the boundaries to deliver data-driven, compassionate, precise, whole-person care for all people through:

- Innovation in interprofessional education and practice (IPEP) to advance healthcare in team-based collaborations across health disciplines and the development of novel undergraduate programs leading to careers in allied health fields.
- Innovation in basic, translational, and clinical research to make discoveries that advance precise care for individuals and communities.

2 Health Equity

Producing deployable equity, demanding that one identify, redress, and prevent health disparities, as one educates the diverse healthcare workforce of the future to serve effectively in all communities. Achieving this priority requires change in all three arms of the Discover • Teach • Heal mission.

3 Precision Health

Creating care that is optimal for individuals and communities through the collection, analysis, and use of data in an ongoing manner with the highest level of attention to privacy and patient control of personal information. In this way, UCI can achieve the best outcome for each person, while advancing the quality of care for the next patient through continuously accrued knowledge.

These strategic priorities are being carried out through the Susan & Henry Samueli College of Health Sciences, the UCI Health medical care system, and the UCI health affairs research centers and institutes. UCI Health Affairs is committed to advancing discovery, teaching, and healing to benefit Orange County, the state, and the nation.

At UCI Health Affairs, we do not practice medicine, We create it. As a university-based, comprehensive healthcare system, we offer the most advanced support for human wellbeing based on groundbreaking research and delivery of cutting-edge care at the right time and in the best place. UCI's nation-leading status is achieved by the innovative silo-free collaboration of our world-class experts in medicine, nursing, pharmaceutical sciences, public health, and integrative health, to produce a unique alliance across health disciplines. We call our inclusive, team-based, and data-driven approach ONE HEALTH.

ONE HEALTH is both a vision and a philosophy to care for all people and communities with excellence. It is an aspiration to conduct research and share information for the good of all people in the pursuit of global health equity. It is a charge to bring to market innovative health solutions with industry and investor partners, and to contribute to the economic vitality of the region and the state. Most significantly, it is a way of life that UCI Health Affairs is modeling for the future success of academic health systems and the healthcare industry.

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**UCI Susan & Henry Samueli
College of Health Sciences**
865 Medical Sciences Quad
Irvine, CA 92697
healthaffairs.uci.edu

