A PUBLICATION OF THE **UC DAVIS SCHOOL OF MEDICINE**

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~~ARTIFICIAL~~ AUGMENTED INTELLIGENCE

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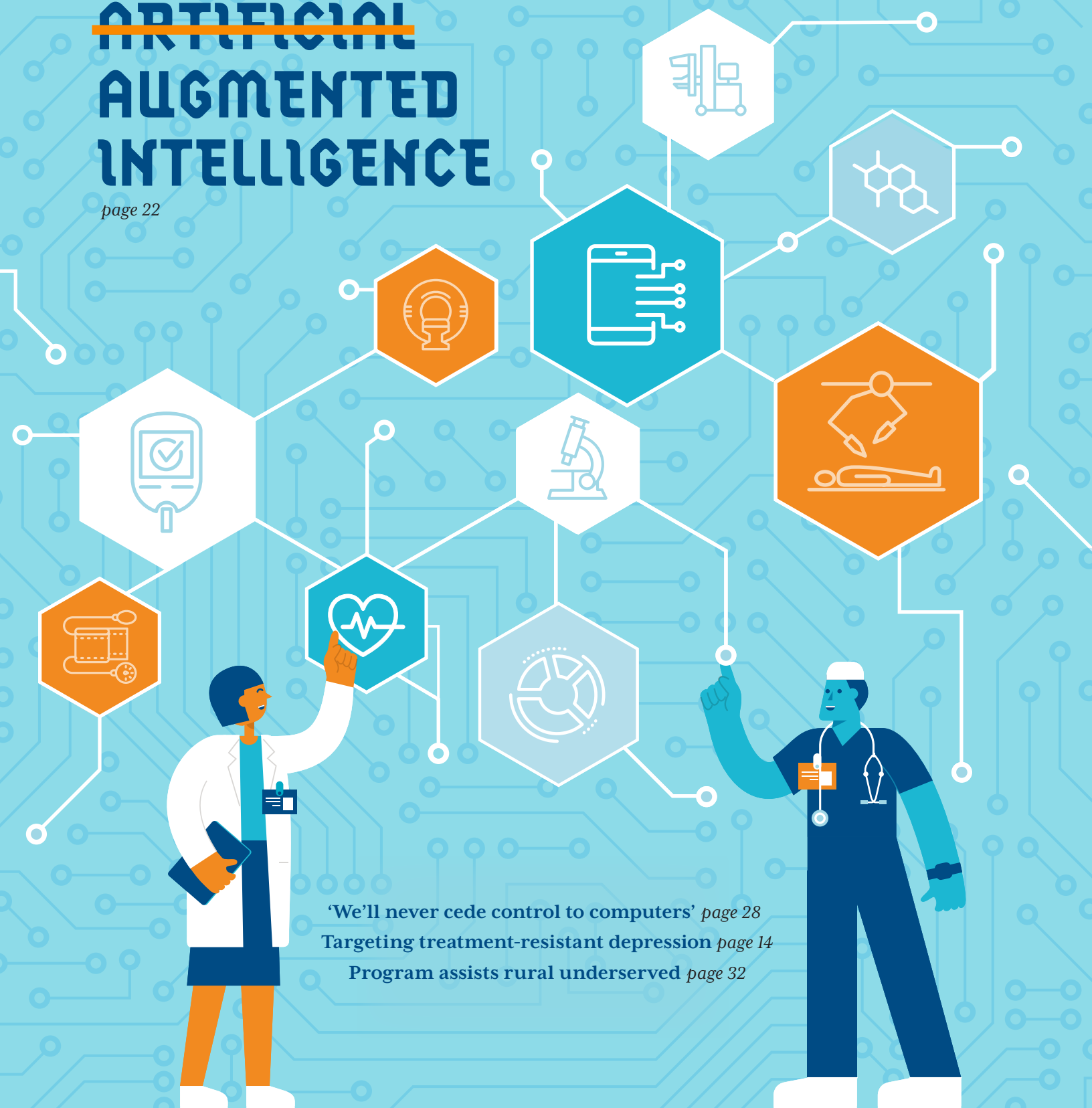

The future of augmented intelligence in health care

We are at the dawn of a new era in medicine and a pivotal moment in human history. Artificial intelligence tools offer the possibility and probability to swiftly uncover difficult-to-discern patterns in massive quantities of data, revolutionize how physicians and nurses are trained and how they work, improve how biomedical research is conducted, and significantly enhance how health care is delivered to patients and communities. And that's just for starters, as AI is changing our lives in so many other aspects.

UC Davis is helping to lead the way on human-centric "augmented intelligence" — my phrase for AI, because it reflects the fact that humans are ultimately in decision-making control in an empowered partnership between provider and patient.

The key is to get AI right. As we move forward, UC Davis is helping to lead the way on human-centric "augmented intelligence" — my phrase for AI, because it reflects the fact that humans are ultimately in decision-making control in an empowered partnership between provider and patient. Looking ahead, the possibilities are limitless — we can use AI tools in amazing ways that break down barriers to access and significantly upgrade the quality, consistency and efficiency in patient care, and much, much more.

As you'll see in this issue, UC Davis Health is embracing open innovation and radical collaboration with health care organizations so that we — the health care industry — can get it right. We've taken a "voluntary AI ethical pledge" and are helping to lead VALID AI, which our IT leaders founded and which includes cooperating health systems, partners, and payers as well as industry partners. Goals include promoting an equity-focused and responsible utilization of generative AI. By building out the systems that can truly evaluate patients' social determinants of health, providers can deliver care in the full context of the patients' circumstances. Leaving no one behind is the future of health care.

As we push the boundaries to ensure the changes ahead are for the good, we are committed to the principle that augmented intelligence requires guardrails to ensure safety and efficacy. The benefit of the VALID AI partnership is that it can serve to coordinate the validation of use-cases and alignment around best practices for AI governance and AI-enabled innovation, which will eventually empower care teams to deliver the best possible patient experiences and help to bridge gaps in care for the underserved.

In a recent video (**ucdavis.health/48v54mU**), I sat down with our Chief AI Advisor Dennis Chornenky and moderator Pamela Wu to discuss the latest AI trends and UC Davis Health, as well as the importance of guardrails for the use of AI. As I noted, doctors and nurses are in charge. Doctors and nurses will always be in charge of the decision-making. AI is artificial intelligence, but it's not. In health care, it's actually augmented intelligence — it's about giving your doctors and your nurses more tools to make better decisions for the patients.

On the Sacramento campus, our AI research continues to shine brightly. In one recent example, a team of UC Davis Health clinicians and data scientists developed an AI-based, machine-learning model to better predict which patients are at greater risk of developing a common type of liver cancer, hepatocellular carcinoma. Eventually, this technology can give physicians critical information to screen patients more closely, and as a result, offer them more personalized care.

There has never been a better time to be involved in the health care field. Our young people starting out in the schools of medicine and nursing today — and our physicians, nurses and employees — are on the leading edge of this wave of innovation. It arguably marks the most progress in patient care since the introduction of antibiotics. So many incredible and unparalleled changes await us all at UC Davis Health. Let's share the journey together!

Yours in health,

David Lubarsky, M.D., M.B.A., F.A.S.A.
Vice Chancellor of Human Health Sciences
Chief Executive Officer, UC Davis Health

Video discussion on artificial intelligence: **ucdavis.health/48v54mU**

Training the physician workforce our nation needs and leading groundbreaking discoveries

UC Davis School of Medicine continues to be recognized for its national leadership as a prolific research community. We're also expanding our innovative pathway programs to train the physician leaders our nation needs.

This year, the Blue Ridge Institute for Medical Research again placed our school among the nation's leading medical schools for National Institutes of Health (NIH) funding—with a new record-high $209 million in NIH grants in 2023. Four of our departments were ranked in the top 10 nationally—Neurology, Public Health Sciences, Physiology and Membrane Biology, and Urologic Surgery. The departments of Cell Biology and Human Anatomy, Emergency Medicine, Medical Microbiology and Immunology, Psychiatry and Behavioral Sciences, and Physical Medicine and Rehabilitation ranked in the top 20.

Central to our national leadership in education is our innovative pathway programs that create opportunities for a wide range of talented individuals to pursue medical school.

The Hartwell Foundation named UC Davis among the prestigious 2024 Top Ten Centers of Biomedical Research. UC Davis pediatric surgeon Erin Brown was also awarded a Hartwell Individual Biomedical Research Award to develop a stem cell treatment for neuroblastoma, the leading cause of cancer death in children under the age of five.

This spring, four of our faculty members were elected fellows of the American Association for the Advancement of Science, recognized as innovators and leaders in their fields. These new fellows include Andreas Bäumler, distinguished professor in the Department of Medical Microbiology and Immunology; Emanual Maverakis, professor in the Department of Dermatology; School of Medicine Vice Dean for Basic Sciences Luis Fernando Santana, professor and chair of the Department of Physiology and Membrane Biology; and Renee Tsolis, professor in the Department of Medical Microbiology and Immunology.

Our exceptional Class of 2024, which thrived despite beginning medical school the first year of the pandemic, graduated this spring. Eighty-one percent of our graduates will stay in California for their residency training programs and 54% will train in primary care. We are delighted that 24% will remain at UC Davis Health for their residency programs. The top specialties into which our students matched included internal medicine, anesthesiology, emergency medicine, general surgery, family medicine, and psychiatry.

Central to our national leadership in education is our innovative pathway programs that create opportunities for a wide range of talented individuals to pursue medical school. This year, we partnered with Cal Poly Humboldt to create the Huwighurruk Health Postbaccalaureate Program. This is the state's first post-graduate education program that seeks to enroll pre-med students passionate about providing health care to American Indian and Alaska Native communities in rural and urban areas.

This is one of our many innovative pathway programs that is helping us to develop a physician workforce in California that better reflects the state's population and contributes to improving the lives of all our communities.

Thank you for your partnership and support as we continue to make an impact in all our mission areas.

Sincerely,

Susan Murin, M.D., M.Sc., M.B.A.
Interim Dean, UC Davis School of Medicine
Professor, Pulmonary, Critical Care and Sleep Medicine

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A publication for alumni, donors, faculty and friends of UC Davis Health

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Medical school ranked among the nation's best for NIH research funding

The UC Davis School of Medicine is among the nation's leading medical schools in National Institutes of Health (NIH) funding, according to the latest Blue Ridge Institute for Medical Research ranking. The school broke its record of NIH funding with a total of more than $209 million, placing it 33rd nationally.

This year, nine School of Medicine departments ranked in the top 20 nationally in their respective fields, with an unprecedented four in the top 10 (see list on this page).

The top three departments in terms of overall NIH funding were Neurology ($34.5 million), Internal Medicine ($26.2 million) and Public Health Sciences ($24.4 million). This fiscal year, 266 principal investigators (PIs) were awarded 410 NIH grants.

"Research is foundational to our mission of delivering tomorrow's health care today," said Susan Murin, M.D., M.Sc., M.B.A., the School of Medicine's interim dean. "We're proud to be in the top quartile of all medical schools in the country for NIH funding, furthering us in this mission."

The Aggie Square innovation district, currently under construction, is also expected to double the school's research spaces.

"We are very proud of our researchers who work to address some of the most challenging medical and health issues," added Kim E. Barrett, vice dean for research. "We're also excited that Aggie Square will soon accelerate this exciting research and allow for greater collaborations across disciplines."

$209 million
School of Medicine NIH funding

Departments in Top 20 for NIH funding:

Cell Biology and Human Anatomy #15
Emergency Medicine #16
Medical Microbiology and Immunology #17
Neurology #6
Physical Medicine and Rehabilitation #20
Physiology and Membrane Biology #10
Psychiatry and Behavioral Sciences #17
Public Health Sciences #6
Urologic Surgery #10

To view School of Medicine annual research impact reports, visit ***health.ucdavis.edu/medresearch****. For more about Aggie Square, visit* ***aggiesquare.ucdavis.edu****.*

A top 25 graduate nursing program

The Betty Irene Moore School of Nursing at UC Davis ranks among the top 25 best master's-degree nursing programs for the fourth year in a row, according to *U.S. News & World Report's* 2024 Best Graduate Schools.

In April the publication released its annual report and ranked the school's Master's Entry Program in Nursing as No. 24, tied with one other school. The Master of Health Services – Physician Assistant (P.A.) Studies Degree Program placed #40 (tie) in the most recent multi-year rankings, issued in 2023.

"We continue to be honored that our peers recognize the School of Nursing as a leader in health care education," said Dean Stephen Cavanagh, Ph.D., R.N., F.A.A.N. "We remain focused on evolving our educational programs, research and community partnerships to meet the needs of an ever-evolving California."

The 2024 *U.S. News* Best Graduate Schools rankings for medical schools were not available at press time. In 2023 rankings, *U.S. News* placed two of the UC Davis School of Medicine's programs in the top 10: family medicine as fifth and primary care as sixth. The publication also ranked psychiatry 15th nationwide.

UC Davis ranked the third most diverse medical school in the country, and 50th in research (tie). The public health graduate program ranked 22, tied with five other schools.

Williams appointed Chief Nursing Executive

Christine Williams, M.S., R.N., C.N.S., has been named UC Davis Medical Center's Chief Nursing Executive. Williams will be responsible for the professional nursing practice, including advanced practice providers, across all locations operated by UC Davis Health, and will provide strategic direction, executive leadership, and general management for all Patient Care Services departments and programs. Williams has been part of UC Davis Health for more than 30 years, serving multiple clinical and leadership nursing roles in areas such as the intensive care unit, life flight, emergency department, and trauma program. Recent roles include Associate Chief Nursing Officer, Chief Nursing Informatics Officer, and, for the last year, Interim Chief Nursing and Patient Care Services Officer.

Hazard appointed chair of Pathology and Laboratory Medicine

Florette K. Gray Hazard, M.D., has been appointed chair of the Department of Pathology and Laboratory Medicine at the UC Davis School of Medicine. Hazard comes to UC Davis from Stanford University, where she was a professor of pathology and pediatrics, medical director and chief of the anatomic and clinical pathology service at Stanford Medicine Children's Health, and pediatric pathology fellowship director at Stanford University School of Medicine. She also served as pathology vice chair for professional development and diversity. Hazard's research expertise is in the study of rare pediatric tumors, developmental disorders and causes of perinatal morbidity and mortality. Lydia Howell retired in 2023 after a 37-year faculty career at UC Davis, the last 13 as pathology chair.

Cancer center appoints interim physician-in-chief

David Tom Cooke, M.D., F.A.C.S., has been appointed interim physician-in-chief for UC Davis Comprehensive Cancer Center and UC Davis Health, where his direct reports will include the medical directors of the inpatient oncology units and outpatient clinics, as well as the cancer center's disease groups, physicians and clinician leaders. Cooke is currently a professor and founding chief of the Division of General Thoracic Surgery and vice chair for faculty development and wellness for the UC Davis Department of Surgery. He is serving as president of the Thoracic Surgery Directors Association, as a director with the American Board of Thoracic Surgery and ACGME, and received the 2022 Ethnic Physician Leadership Award from Physicians for a Healthy California.

New leader of UC Davis Health's Affiliate Network

UC Davis Health has welcomed **Susan Walsh, M.B.A.**, as the executive director of our Affiliate Network. Previously known as Regional Affiliations, the Affiliate Network seeks to build partnerships with external organizations and health providers to support and extend the regional system of care. It currently oversees more than 38 external partnerships, such as the UC Davis Cancer Care Network and a pediatric hospitalist program at Adventist Health Lodi Memorial Hospital. Prior to joining UC Davis Health, Walsh was director of corporate strategy at Northwestern Medicine in Chicago, where she partnered with key physician leaders across eleven hospitals and three physician groups.

Kim new medical director of the UC Davis Cancer Care Network

UC Davis oncologist **Edward Kim, M.D., Ph.D.**, has been named the new medical director of the UC Davis Cancer Care Network (CCN). Kim is currently the medical director of the Office of Clinical Research at UC Davis Comprehensive Cancer Center, a position he will continue to hold, and has been directly involved in expanding the center's clinical trials into counties served by CCN affiliates. The CCN is designed to improve cancer care in community hospitals so patients can access care advances near home; community oncologists work directly with UC Davis oncologists to ensure the latest diagnostic and treatment options are available to their patients.

Tong to help lead health equity-focused population science research

Elisa Tong, M.D., M.A., has been named assistant director for population sciences for UC Davis Comprehensive Cancer Center, where the internist and tobacco researcher will focus on health equity to improve cancer prevention, screening, treatment and survivorship. Tong will join Shehnaz Hussain, Ph.D., Sc.M., the associate director for population sciences, and also work with center leadership to facilitate and disseminate impactful research on cancer determinants and outcomes. Tong directs the Tobacco Cessation Policy Research Center, supports the California Tobacco Prevention Program, has collaborated with the California Cancer Registry, led UC Quits, and founded and leads CA Quits.

CAARE Center announces new leadership team

From top: Ornelas Knight, Blacker, Timmer

A new leadership team was announced this winter at the UC Davis CAARE Diagnostic and Treatment Center, a nationally recognized model program for evaluating and treating child maltreatment and training mental health providers in empirically based treatments. **Michele Ornelas Knight, Psy.D.**, has been appointed director after serving as co-director, while **Dawn Blacker, Ph.D.**, has been appointed director of clinical operations and training and **Susan Timmer, Ph.D.**, has been named research director. All have worked at the center for more than 20 years.

Baxter chief innovation and economic development officer for UC Davis

UC Davis Chancellor Gary S. May has selected **George Baxter, Ph.D.**, to serve in the new role of Chief Innovation and Economic Development Officer. Baxter currently serves as CEO of Edinburgh Innovations Ltd., or EI, the innovation management company of the University of Edinburgh. Under his leadership, EI rose to be among the top four in several innovation rankings in the United Kingdom and was named the Global University Venturing Tech Transfer Office of the Year in 2021. Baxter also serves as an advisor to or board member of several Scottish, British and European organizations that foster university and business partnerships, as well as the TenU, a university group that includes Stanford, Columbia and MIT.

Condrin listed among top chief operating officers

Michael Condrin, M.B.A., interim chief administrator for UC Davis Medical Center and chief operating officer for UC Davis Health's Hospital Division, was recognized by *Becker's Hospital Review* in February as one of "60 academic medical center COOs to know." Condrin's responsibilities include all inpatient care for UC Davis Health, including UC Davis Medical Center and UC Davis Children's Hospital, level I trauma and emergency services, and surgery and post-operative care. He is also responsible for the health system's operational, logistical, patient-support services, nursing and medical staff clinical operations, facility operations, and supply chain management. Condrin most recently served as chief operating officer for ambulatory care, where he oversaw all outpatient care.

Galante listed among top chief medical officers

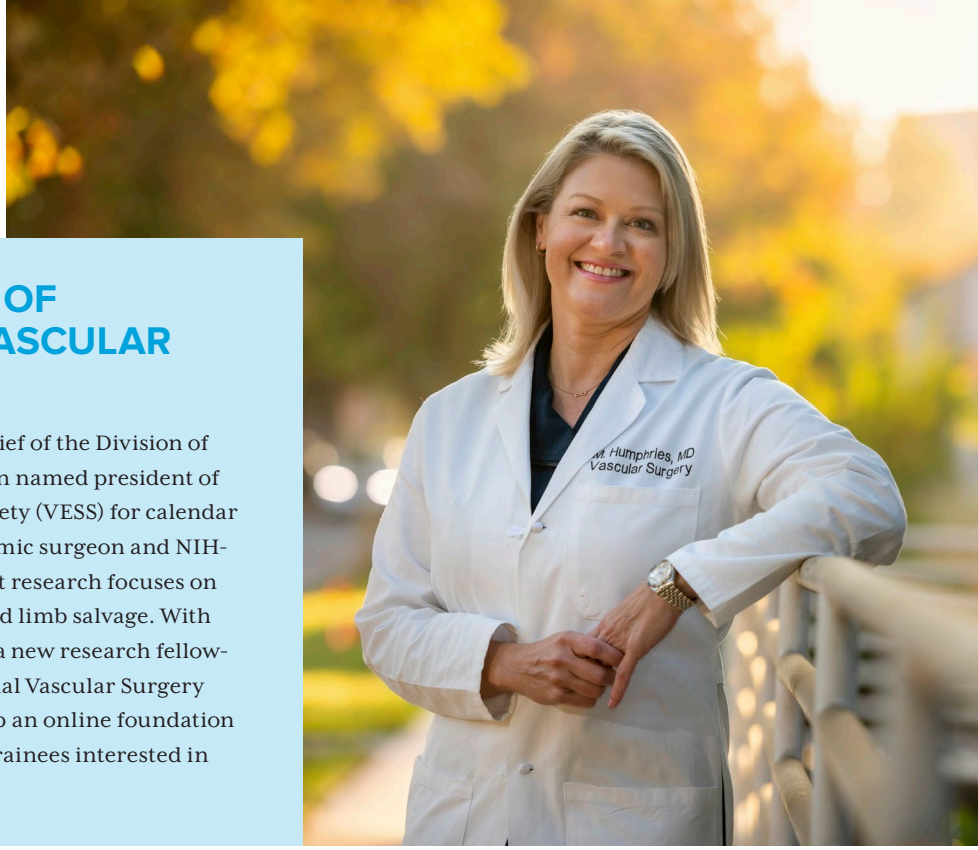
Joseph M. Galante, M.D., M.B.A., F.A.C.S., interim chief medical officer at UC Davis Medical Center, has been recognized by *Becker's Healthcare* as among the "180 chief medical officers to know" in the United States for 2024. Galante leads and directs the professional portion of UC Davis Health's 646-bed acute care teaching hospital's clinical delivery system and serves as a liaison between the hospital, school of medicine and the self-governed medical staff. He is also the medical center's senior officer for patient safety and quality, and leads clinical affairs for 10 departments across the medical center.

Kenber among top chief human resources officers

Tammy Kenber, M.S., chief human resources officer for UC Davis and UC Davis Health, has been recognized by *Becker's Hospital Review* as among the "84+ CHROs to know in 2024." Kenber assumed the role of CHRO in December 2022, and under Kenber's leadership, UC Davis Human Resources has helped advance several transformative initiatives, such as: The Hiring Experience, a comprehensive two-year recruitment and retention initiative; the You Belong Here outreach campaign, supporting recruitment efforts, affirmative action goals, and obligations as an equal opportunity employer; and a comprehensive reorganization and strategic planning effort.

HATFIELD LISTED AMONG TOP CHIEF PHARMACY OFFICERS

Chad Hatfield, Pharm.D., M.H.A., B.C.P.S., chief pharmacy officer for UC Davis Health, was recognized by *Becker's Hospital Review* in February as one of "75 hospital and health system chief pharmacy officers to know." Hatfield has served as chief pharmacy officer at UC Davis and assistant dean at the UCSF School of Pharmacy since 2018. He is board certified in pharmacotherapy and leads UC Davis services with ~500 staff supporting 13 pharmacies, acute and ambulatory clinical services, and dozens of residents. He also serves as residency director for the PGY1/PGY2 Pharmacy Administration and Leadership program.



HUMPHRIES PRESIDENT OF VASCULAR AND ENDOVASCULAR SURGICAL SOCIETY

Misty Humphries, M.D., M.A.S., interim chief of the Division of Vascular and Endovascular Surgery, has been named president of the Vascular and Endovascular Surgical Society (VESS) for calendar year 2024. Humphries is a recognized academic surgeon and NIH-funded physician investigator whose current research focuses on telemedicine in peripheral artery disease and limb salvage. With VESS she will be responsible for continuing a new research fellowship and further enhancing the VESS National Vascular Surgery Interest Group. She is also helping to develop an online foundation articles journal club for students and early trainees interested in vascular surgery.

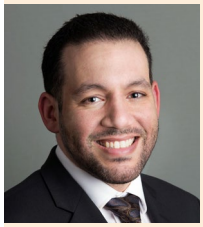
Nursing dean re-elected to national nursing board

Stephen Cavanagh, Ph.D., R.N., F.A.A.N., dean for the Betty Irene Moore School of Nursing at UC Davis, has been selected to serve a second term on the board of directors for the American Association of Colleges of Nursing (AACN). He was first elected to the board in 2022. AACN is the voice for academic nursing representing more than 865 member schools of nursing at public and private institutions nationwide, and also sets quality standards for nursing education. Cavanagh has contributed to AACN as a member of the finance and nominating committees.

Shaikh appointed to national, global leadership positions

Ulfat Shaikh, M.D., M.P.H., M.S., professor of pediatrics and medical director of health care quality at UC Davis School of Medicine, has been appointed project leader for the American Academy of Pediatrics national primary care quality improvement collaborative. The project, funded by a grant from the Elevance Health Foundation, will focus on how primary care clinics can prevent and treat substance use and improve mental health in adolescents. Shaikh has also been appointed to the board of directors for the International Society for Quality in Health Care (ISQua), a global organization committed to promoting and improving the quality and safety of health care worldwide. ISQua's work includes education, consultancy and advisory services, and quality and safety initiatives.

Maximus director of Aortic Center



Vascular surgeon Steven Maximus, M.D., F.A.C.S., has been named the new director of the Aortic Center at UC Davis Health. The multidisciplinary program within the Vascular Surgery and Cardiac Surgery divisions provides a full range of care for complex aortic diseases, such as aneurysms, dissections and genetic disorders. Maximus has performed the most Transcarotid Arterial Revascularizations in the region as of March 2024, placed the most thoracic branch endoprosthesis devices in the U.S., and is one of a handful of U.S. vascular surgeons to have an FDA Physician Sponsored Investigational Device Exemption to investigate physician modified endografts for complex thoracoabdominal aneurysms.

America's 100 Best Hospitals Award for 2024

UC Davis Medical Center has been nationally recognized as a top-performing hospital according to research released by Healthgrades. Receiving America's 100 Best Hospitals Award for 2024 means the medical center is among the top 2% of hospitals nationwide for overall clinical performance. The medical center received accolades for high-quality patient care, known as Specialty Excellence Awards, in five areas. This marks the third year in a row for specialty awards for gastrointestinal care, gastrointestinal surgery, pulmonary care and stroke care, and the fourth year in a row as one of America's 100 Best Hospitals for critical care.

ONE OF AMERICA'S BEST LARGE EMPLOYERS

UC Davis Health ranked No. 51 among 600 listed institutions on the 2024 *Forbes* list of America's Best Large Employers, an annual ranking based on an independent survey of approximately 170,000 participants from a wide range of companies with 1,000 or more U.S. employees. Respondents rated their willingness to recommend their employer to family and friends, as well as factors such as working conditions, development potential, organizational culture and company image. UC Davis Health has also earned *Forbes* distinctions as a Best Employer in the State, Best Employer for Diversity, and Best Employer for Women.

ONE OF AMERICA'S GREATEST WORKPLACES FOR WOMEN

Newsweek recently ranked UC Davis Health among the best workplaces for women in organizations with more than 5,000 employees. The America's Greatest Workplaces for Women rankings included more than 100 hospitals and health systems in addition to thousands of other organizations and companies. UC Davis Health was the only UC health campus selected in the "large" employer tier, and one of two UCs named overall. In 2023, *Forbes* also listed UC Davis Health as a Best Employer for Diversity for the fourth consecutive year and a Best Employer for Women for the second consecutive year.

One of America's Greatest Workplaces for Parents and Families

UC Davis Health has been recognized as one of America's Greatest Workplaces for Parents and Families by *Newsweek* and Plant-A Insights Group, based on an evaluation of categories such as work-life balance, working environment, and corporate culture. Some contributing factors to the recognition include UC Davis' award-winning lactation support program; a recently opened child development center for UC Davis Health affiliates; and child care grants for medical and nursing students.

UC Davis recognized for innovation and economic prosperity

UC Davis has again been recognized for significant contributions to innovation, economic growth and community engagement by the Association of Public and Land-Grant Universities, which extended UC Davis' Innovation and Economic Prosperity designation for another five years. A 2019 economic impact report showed UC Davis is a major economic driver for California, generating $12.56 billion in statewide economic activity and supporting 68,900 jobs. Every dollar UC Davis spends in California generates an additional $1.10 of economic activity in the state, and for every UC Davis job, the university's economic activity led to the creation of another non-UC Davis job in California.

Emergency medicine physician receives two national awards for advancing health equity

Tiffani Johnson, M.D., M.Sc., associate professor of emergency medicine, has been honored by the American Academy of Pediatrics for commitment to reducing inequities and disparities in child health. Johnson received the Jane Knapp Emerging Pediatric Emergency Medicine Leader Award for outstanding contributions to pediatric emergency medicine during the first 10 years of their career. Johnson also received the 2023 Equity, Diversity, and Inclusion Excellence Award for commitment to advancing child health equity through advocacy, clinical practice and research, in addition to promoting equity, diversity and inclusion within the profession of pediatrics.

Neuroscientist named Sloan Research Fellow

Theanne Griffith, Ph.D., assistant professor in the Department of Physiology and Membrane Biology, has been awarded a prestigious 2024 Sloan Research Fellowship in neuroscience from the Alfred P. Sloan Foundation. The two-year, $75,000 fellowships honor exceptional U.S. and Canadian researchers whose creativity, innovation, and research accomplishments make them stand out as the next generation of leaders. The fellowship is one of the most prestigious awards available to young researchers, in part because so many past fellows have gone on to become distinguished figures in science; to date, 57 fellows have received a Nobel Prize. Griffith is among 126 early career researchers chosen this year from 53 institutions. Her research investigates the cellular and molecular mechanisms underlying proprioception — our internal spatial awareness of self — and other somatosensory modalities. Her research uses an innovative combination of electrophysiology, transgenic mouse models, behavior, imaging, and molecular profiling.

Four researchers elected as AAAS fellows

Four UC Davis School of Medicine faculty members were among 10 from UC Davis announced as elected fellows of the American Association for the Advancement of Science (AAAS) this April for their achievements:

- **Andreas Bäumler, Ph.D.**, a distinguished professor in the Department of Medical Microbiology and Immunology, was selected for pioneering work on understanding how the cells in the intestinal lining regulate composition and function of microflora.
- **Emanual Maverakis, M.D.**, a professor in the Department of Dermatology, has made great contributions to diagnostic and treatment guidelines for many rare, life-threatening immune-mediated skin diseases.
- **Luis Fernando Santana, Ph.D.**, chair of the Department of Physiology and Membrane Biology and vice dean for basic sciences at UC Davis School of Medicine, conducts work that shows the role of calcium channel signaling modalities in regulating muscle excitability in health and disease.
- **Rene Tsolis, Ph.D.**, a professor in the Department of Medical Microbiology and Immunology, has made innovative and impactful contributions to the field of host-pathogen interactions, and is also recognized for effective mentoring and program-wide DEI advocacy.

Elizabeth Morris named 2024 Gold Medalist by Society of Breast Imaging

Elizabeth Morris, M.D., chair of the Department of Radiology, has been selected as the Society of Breast Imaging (SBI) 2024 Gold Medalist. In announcing the award, SBI also noted her distinguished record as a radiology and breast imaging leader. Morris' research focuses on how to use newer techniques, such as MRI, for early breast cancer detection. In collaboration with her colleagues, she has written over 230 papers, 40 chapters and five books about breast diseases with an emphasis on the use of MRI. Morris is a fellow of SBI, the American College of Radiology and the International Society of Magnetic Resonance in Medicine, and a past president of SBI.

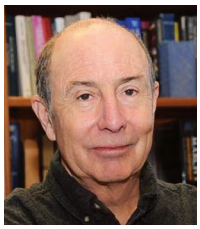
NIH Director's New Innovator Award

Christina Kim, Ph.D., assistant professor in the UC Davis Department of Neurology and faculty member of the Center for Neuroscience, has been selected as a 2023 NIH Director's New Innovator Award recipient. The award supports research from exceptionally creative, early career investigators who propose innovative, high-impact projects in the biomedical, behavioral or social sciences. The prestigious recognition provides $2.3 million to support Kim's research, which aims to develop and test new technologies to examine neurons whose activity is linked to certain health conditions such as epilepsy, Alzheimer's disease, and autism.

Chosen for national program for emerging STEM leaders

Angel N. Desai, M.D., M.P.H., assistant clinical professor of infectious diseases, has been named a member of the 2024 New Voices cohort at the National Academies of Sciences, Engineering, and Medicine. Desai is one of 26 outstanding scientists, engineers and medical professionals to join the 2024 cohort. New Voices is a prominent leadership program for early- and-career professionals that aims to expand the diversity of expertise engaged in the work of the National Academies, and to develop a network of leaders to address national and global challenges.

Hammock a California Academy of Sciences fellow



UC Davis distinguished professor **Bruce Hammock, Ph.D.**, internationally recognized for discovering a new group of human chemical mediators, is a newly inducted fellow of the California Academy of Sciences (CAS). Hammock, who holds a joint appointment with the Department of Entomology and Nematology and UC Davis Comprehensive Cancer Center, joins the ranks of more than 500 fellows, a governing group of distinguished scientists and other leaders who have made notable contributions to scientific research, education, and communication. Hammock is also a fellow of the National Academy of Inventors, National Academy of Sciences, and Entomological Society of America, and received a Lifetime Achievement Award from UC Davis.

Ophthalmologist's Walk of Fame star in Brazil

Mark Mannis, M.D., F.A.C.S., professor and Department of Ophthalmology and Vision Sciences chair, has been honored by the Eye Hospital of Sorocaba near Sao Paulo, Brazil, for his work in ophthalmology. The hospital, one of the busiest eye banks and departments of ophthalmology in the world, recognized Mannis' work with a star on its Walk of Fame, honoring physicians who have made significant contributions to global efforts around ophthalmology. Mannis is a world-renowned expert in the diagnosis and treatment of external eye disease and diseases of the cornea.

More Beacon Awards for Excellence

The American Association of Critical-Care Nurses (AACN) has conferred a silver-level Beacon Award for Excellence on UC Davis Health's Post-Anesthesia Care Unit (PACU) and Children's Surgery Center PACU. At the time of announcement in December it was the only PACU with this distinction on the West Coast. The three-year award recognizes unit caregivers who successfully improve patient outcomes and align practices with AACN's Healthy Work Environment Standards. Multiple intensive care units across UC Davis Health, and its regional burn center, held gold- or silver-level Beacon recognition as of early 2024.

Wang recognized for stem cell work

Aijun Wang, Ph.D., has been inducted to The American Institute for Medical and Biological Engineering (AIMBE) College of Fellows. Fellows are among the nation's most distinguished medical and biological engineers, belonging to the top two percent of engineers in their fields. Wang is vice chair for translational research, innovation and entrepreneurship in the Department of Surgery, co-director of the Center for Surgical Bioengineering at UC Davis, and principal investigator at the Institute for Pediatric Regenerative Medicine (IPRM) and Shriners Children's Northern California. Wang was elected "for his outstanding contributions in advancing stem cell engineering technologies for clinical translation in treating birth defects and tissue regeneration applications." He leads the Wang Lab, who engineers and develops stem cells and their derivatives and biomaterial-based scaffolds for treatment of surgical diseases such as Duchenne muscular dystrophy and spina bifida.

American College of Gastroenterology honors UC Davis Health physicians

Four UC Davis Health physicians from the Division of Gastroenterology and Hepatology were among leaders in the field recognized by the American College of Gastroenterology for significant and lasting contributions to the profession and patient care. **Ronald Hsu, M.D., F.A.C.G., A.G.A.F., F.A.S.G.E.,** received the prestigious American College of Gastroenterology Community Service Award. Hsu and gastrointestinal fellows Sean Nguyen, Christine Shieh and Alex Zhornitskiy won one of the 16 Service Awards for Colorectal Cancer Outreach, Prevention and Year-Round Excellence. Finally, Nguyen was awarded Outstanding Poster Presenter.

Violence prevention study wins top journal award

Garen Wintemute, M.D., M.P.H., director of the UC Davis Violence Prevention Research Program (VPRP), is the recipient of the Jess Kraus Award for a major research paper he authored on political violence. "Views of democracy and society and support for political violence in the USA: findings from a nationally representative survey," was published in *Injury Epidemiology* last September. The recognition is given annually to the first author of the best article published in the journal. The award-winning paper found that a small but concerning segment of the U.S. population considers violence, including lethal violence, to be usually or always justified to advance political objectives.

AAP HONORS 3

Three UC Davis Health physicians were among 60 pediatricians, subspecialists and trainees recognized in the fall by the American Academy of Pediatrics for exemplary achievements in advocacy, practice and research.

- **Satyan Lakshminrusimha, M.D., M.B.B.S.**, chair of the Department of Pediatrics and pediatrician-in-chief at UC Davis Children's Hospital, received the AAP Education Award.
- **Tiffani Johnson, M.D., M.Sc.**, associate professor of emergency medicine, received an Equity, Diversity and Inclusion Excellence Award.
- **Heather McKnight, M.D.**, division chief of pediatric hospital medicine, received the Section on Hospital Medicine Service Award.

Notable quotes

"It was while working in two hospitals in Atlanta, Georgia, a city which has a predominantly Black population, that ingrained inequities really became blatantly obvious to me. One hospital had predominantly wealthier, white patients, and the other had predominantly poorer, Black patients. The poorer patients had worse outcomes — and I thought: why? It's me, the same doctor treating them."

Ruth Shim, M.D., M.P.H., psychiatry professor and the Associate Dean of Diverse and Inclusive Education at the UC Davis School of Medicine, in a February 2024 *Lancet Psychiatry* profile about confronting racism in psychiatry.

"I never show up as a woman in medicine; I always show up as a Black woman. When I go to my clinical practice, I see children who look like me with inequities and whose stories historically have not been told. Identification is important. Racism has permeated the medical fields. I want to give children, whose pain and dreams are real, a voice so they can live and thrive."

Tiffani Jenae Johnson, M.D., M.Sc., pediatric emergency physician and professor at UC Davis Children's Hospital, in the December *New York Times* story "Profiles of Change: For 7 Women, a Heartfelt Cause Became a Mission."

"We're going to be doing much more complex surgeries there with the planned ability to have more than a dozen patients every night staying up to 23 hours, so we can straddle that zone between what used to be an inpatient procedure [and] now could be an outpatient procedure."

UC Davis CEO **David Lubarsky, M.D., M.B.A., F.A.S.A.**, in a February *Modern Healthcare* article about investments in outpatient care. When complete next year, UC Davis Health's 268,000-square-foot 48X Complex is expected to be one of the largest ambulatory surgical centers in the U.S. for number of operating and procedure rooms.

"We have a lot of nursing homes that are owned by financial institutions. They own the real estate, and therefore whoever is managing the nursing home is separated from the ownership. And this has created a lot of problems because the money that's coming into the nursing home is being siphoned off for the real estate part of it, and it leaves less operational dollars. And we're not going to solve all of these quality of care problems until that is also dealt with."

Deb Bakerjian, Ph.D., A.P.R.N., F.A.A.N., F.A.A.N.P., F.G.S.A., professor and associate dean at the Betty Irene Moore School of Nursing, in an October *Marketplace* feature on a shortage of nurses for nursing homes.

"Instead, we choked off funding and now we're answering questions that we could have had 30 years ago. How many more thousands of people are dead today that would have been alive if the research of the 90s had continued, if we had answered those questions?"

Garen J. Wintemute, M.D., M.P.H., emergency physician and director of the UC Davis Violence Prevention Research Program, in an October *Guardian* story "After years of mass shootings, the U.S. is still trying to understand gun violence. Why?"

A summary of recent findings in clinical, translational and basic-science research at UC Davis

Body of Knowledge

In the largest study of its kind, researchers at UC Davis Health found that exposure to organophosphate ester (OPEs) flame retardants during pregnancy was associated with preterm birth, especially among females. OPEs are widely used in foams found in furniture, baby products, electronics, textiles and building materials to prevent fires and make plastics more flexible. Individuals are exposed to OPEs through their skin or when they ingest or inhale indoor dust. The major new research study was published in *Environmental Health Perspectives*.

In a study published in *Communications Biology*, researchers at UC Davis School of Medicine and the UC Davis MIND Institute showed that imbalances in folic acid, a necessary nutrient taken by pregnant people to prevent neural tube defects, and vitamin B12 can alter brain development in mice. The researchers wanted to explore whether there is a possible link between increases in neurodevelopmental conditions, like autism and attention deficit/hyperactivity disorder, and excessive folic acid. In ongoing work, the team is also investigating the effects of folic acid and B12 in human brain organoids. This research may provide better insights into how these nutrients affect human biology.

Researchers from the UC Davis Comprehensive Cancer Center identified a crucial protein section on a specific "death receptor," CD 95 or Fas, that can cause cells to die. This ability to trigger programmed cell death could lead to improved cancer treatments. Developing drugs that boost death receptor activity could provide an important weapon against tumors. Though drug companies have had some success targeting another type of death receptor, no "Fas antagonist" drugs have made it into clinical trials. These findings, published in the *Nature* journal *Cell Death & Differentiation*, could potentially change that.

People with personality traits such as conscientiousness, extraversion and positive affect are less likely to be diagnosed with dementia than those with neuroticism and negative affect, according to an analysis by researchers at UC Davis and Northwestern University. The difference was not linked to physical damage to brain tissue found in dementia patients, but more likely to how certain personality traits help people navigate dementia-related impairments. The work, supported by the National Institute on Aging, was published in *Alzheimer's & Dementia: The Journal of the Alzheimer's Association*.

A study from UC Davis Health and Oregon Health & Science University found that people living with dementia from minoritized racial and ethnic populations are less likely to receive an accurate and timely dementia diagnosis compared to non-Hispanic whites, are less likely to be prescribed anti-dementia medication or use hospice care, have a higher risk of hospitalization, and receive more aggressive life-sustaining treatment in end-of-life care. The study was published in *Alzheimer's & Dementia: The Journal of the Alzheimer's Association* and was supported by the National Institute on Aging.

New clinic for treatment-resistant depression, research

Transcranial magnetic stimulation (TMS) and esketamine treatment modalities underway, with future research also to include psychedelics

Debra Kahn (left) and Katharine Marder (right) view an image on the transcranial magnetic stimulation device.

The UC Davis Department of Psychiatry and Behavioral Sciences recently opened a new Advanced Psychiatric Therapeutics (APT) Clinic in Sacramento, dedicated to treating patients with treatment-resistant depression.

The APT Clinic provides the novel treatment modalities transcranial magnetic stimulation (TMS) and esketamine nasal spray. It opens at a time when medication and technology have made major improvements in recent years: treatment response rates with TMS and esketamine are up to 70%, while electro-convulsive therapy (ECT) — also to be offered through the clinic in the future — has shown up to an 85% response rate in patients with refractory major depression.

"Depression is one of the most common psychiatric disorders. It spans all life stages and can be debilitating and even life-threatening," said Helen Kales, M.D., the Joe P. Tupin Professor of Psychiatry and chair of the Department of Psychiatry and Behavioral Sciences. "While antidepressant medications and therapy are effective in many patients, they don't work for everyone."

New hope

TMS and esketamine may offer hope for patients with treatment-resistant depression or those for whom antidepressant

medications are only partially effective or intolerable.

TMS is a non-invasive treatment that uses gentle pulses of magnetic fields to stimulate nerve cells in the brain. It works differently than standard antidepressant medications, like serotonin reuptake inhibitors (SSRIs), and without their undesirable side effects such as weight changes and sexual dysfunction. The FDA has also approved TMS for obsessive-compulsive disorder (OCD) and migraines.

Patients will generally receive daily treatments for the first six weeks, followed by a three-week taper phase in which frequency is gradually reduced to once per week before completion. Treatment durations generally last from five minutes to 30 minutes, depending on the individual patient.

Although TMS was first approved for treatment in 2008, the technology has evolved and improved significantly since then, according to Debra Kahn, M.D., professor and clinical psychiatrist in the Department of Psychiatry and Behavioral Sciences and director of the new APT Clinic.

Esketamine (brand name Spravato®), an FDA-approved nasal spray derived from ketamine, is thought to improve symptoms of depression by helping to restore connections between nerve cells in the brain. Esketamine is administered under supervision in a clinic due to the potential for side effects including sedation or dissociation.

Patients will typically receive treatment twice weekly for the first month, once weekly for the second month, and once every one to two weeks for maintenance. During clinic visits, patients self-administer the nasal spray medication and then spend a couple of hours in a relaxing environment while it takes effect. Results can be rapid, with some patients feeling improvement within days.

Candidates for these treatments are adults who have tried two other antidepressants without significant improvement. Physicians work with patients to determine eligibility, and discuss risks and benefits before formulating treatment plans.

"Depression is, unfortunately, a common and potentially devastating illness, and it's becoming more common each year in the United States," said Katharine Marder, M.D., a UC Davis Health psychiatrist who specializes in treatment-resistant depression. "While medications and talk therapy are effective treatments for many people, we also know that one in three people with depression won't respond to those standard treatments."

"As a provider, it's sad and frustrating when you have patients who have been depressed and are not getting better," Kahn added. "It's exciting to have these new treatment options, and it makes us feel hopeful that we can help people that we haven't been able to help before."

Intravenous ketamine, psychedelics research also on tap

The clinic's current home in the Lawrence J. Ellison Ambulatory Care Center is temporary, with a 15,000-square-foot permanent space at East Sacramento's Cannery Business Park expected to open next year following a $20 million renovation. The clinic will accommodate more patients and offer expanded treatments after the move, with more TMS machines plus intravenous ketamine in addition to nasal spray.

It will also engage in clinical trials, such as investigations of new TMS algorithms that utilize functional neuroimaging to identify treatment locations, and surgical interventions for refractory major depressive disorder in concert with UC Davis Health's Department of Neurosurgery. The APT clinic will also support trials of psychedelics and non-hallucinogenic psychedelic analogues, the latter in collaboration with the UC Davis Institute for Psychedelics and Neurotherapeutics.

Although there are many promising new treatments, the clinic is taking an evidence-based approach to potential new therapies.

"New psychiatric interventions, including psychedelics and other novel neurotherapeutics, offer a lot of hope for people struggling with mental health disorders. Hope is great, but we need the evidence to back it up. With the new clinic, we will be able to evaluate the potential effectiveness of these new treatments."

HELEN KALES, CHAIR, UC DAVIS DEPARTMENT OF PSYCHIATRY AND BEHAVIORAL SCIENCES

"New psychiatric interventions, including psychedelics and other novel neurotherapeutics, offer a lot of hope for people struggling with mental health disorders," Kales said. "Hope is great, but we need the evidence to back it up. With the new clinic, we will be able to evaluate the potential effectiveness of these new treatments."

In addition to Kales, Kahn, and Marder, TMS-certified psychiatrists at the new clinic are John Onate, Lorin Scher, Amy Barnhorst, James Alan Bourgeois and Manpreet Singh. Additional care team members include Matthew Settle, a psychiatric nurse practitioner; Donna McDonald, a nurse manager; and Leticia Diaz and Mary Lomu Lilomaiava, TMS technicians.

Liver transplant program certified, expands access

The UC Davis Transplant Center has been certified as a liver transplant program by the Centers for Medicare and Medicaid Services (CMS), and UC Davis Health can now accept potential liver transplant patients insured by Medicare or Medicaid (Medi-Cal in California). The designation greatly expands access to life-saving liver transplants for patients throughout Northern California. To gain certification, transplant programs must meet stringent quality-of-care requirements stipulated by CMS, and perform a minimum of 10 liver transplants in the first 12 months of operation. While the liver transplant program is less than a year old, the UC Davis Transplant Center has been a leader in organ transplantation since its inception in 1985.

All-in-one multidisciplinary Parkinson's clinic

UC Davis Health has launched the region's first Parkinson's Disease Multidisciplinary Clinic. Located in Midtown Sacramento, the clinic is part of the UC Davis Center for Movement Disorders and Neurorestoration, which was recognized last year as the region's first Parkinson's Foundation Center of Excellence for expertise in clinical care. Living with Parkinson's disease requires significant coordination of care, and the new clinic simplifies care by bringing experts from many specialties to one location, allowing patients to see many specialists during one visit from areas such as nutrition, speech therapy and neuropharmacology.

New level 4 epilepsy unit targets uncontrolled seizures

The UC Davis Comprehensive Epilepsy Program has opened a new 11-bed epilepsy monitoring unit that specializes in diagnosing and guiding treatment for people whose seizures aren't controlled by medication. The unit is the largest in inland Northern California accredited by the National Association of Epilepsy Centers as level 4, a highest-level designation only given to facilities with the most sophisticated intensive neurodiagnostic monitoring technology and the full array of treatments for epilepsy and other seizure disorders. Alongside the new expanded adult unit are four beds dedicated to monitoring in children.

NEW PROGRAM TO INCREASE LUNG CANCER SCREENING

Although lung cancer is the No. 1 cause of cancer death for both men and women, only about 1% of those eligible in California are checked. A new Lung Cancer, Lung Nodule Early Detection (Lung-LEAD) Clinic, part of a new lung cancer integrated service line at UC Davis Health, provides dedicated "lung care navigators" to increase screening. Navigators proactively engage with eligible patients to conduct virtual screenings, then schedule eligible patients with an advanced practice provider to encourage low-dose CT. Patients whose screening reveals a lung nodule are quickly scheduled with UC Davis Comprehensive Cancer Center specialists for further testing. Info for self-referring patients and referring providers: 916-703-7050.

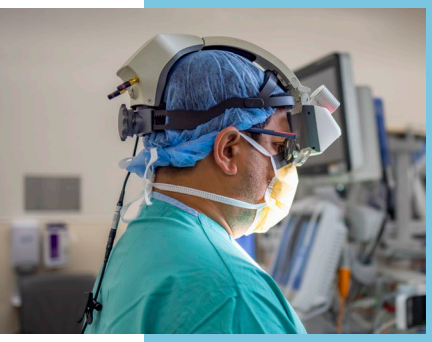
STOCKTON PRENATAL CLINIC OPENS NEW LOCATION

A new Stockton clinic location for patients with high-risk pregnancies has opened housing the UC Davis Health Prenatal Diagnosis of Northern California and the UC Davis Fetal Cardiology Clinic. Both clinics are linked to the UC Davis Fetal Care and Treatment Center, the first comprehensive multidisciplinary fetal diagnosis and therapy center in inland Northern California. The new prenatal clinic provides comprehensive counseling, genetic screening and diagnostic testing for fetal anomalies, with multiple dedicated ultrasound machines, and has tripled patient capacity compared to the former location.

NEW AT-HOME CARE PROGRAM FOR POST-ANGIOPLASTY CARE

UC Davis Health has launched a novel digital care program for patients who have undergone a Percutaneous Coronary Intervention (PCI), previously known as angioplasty with stent. The remote program, supported by the American College of Cardiology and Rosenfeld Foundation, aims to reduce post-procedure admissions. Patients are provided a scale, blood pressure kit, and 4g hub that transmits data directly to a dashboard accessed by UC Davis Health clinicians, who perform daily monitoring and can provide care when there are changes in vitals.

Augmented reality glasses in the operating room



Safdar Khan, M.D., vice chair of surgical innovation in the Department of Orthopaedic Surgery, is one of the first surgeons in the country to use augmented reality (AR) glasses. The tool essentially allows him to see beneath the skin without an incision, gaining high quality two-dimensional and three-dimensional views of the spine. The technique enables enhanced accuracy and precision, smaller incisions, meticulous planning, and more efficient and shorter operations, and has proven especially helpful when implanting devices or screws. Khan plans to build an AR program at UC Davis to explore the technology's potential to help across a wide range of spinal issues.

First in region with prostate cancer therapy

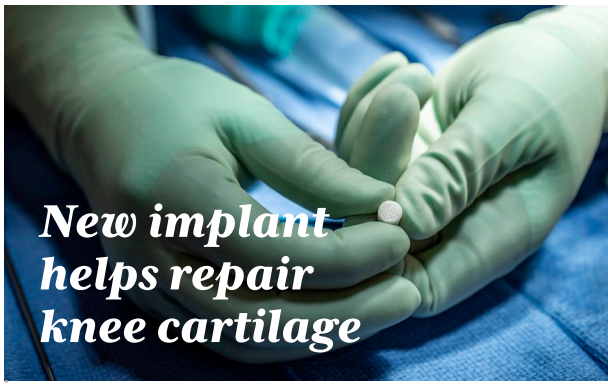
UC Davis Comprehensive Cancer Center is now offering high-intensity focused ultrasound or (HIFU), a leading-edge, non-invasive prostate cancer procedure without a blade, incision, scar or radiation. The idea is to avoid risks and side effects of radical prostatectomy while reducing recovery time. An estimated 80% of early-stage prostate cancer patients who undergo HIFU will not need additional treatment. The robotic platform, developed by Focal One, ablates prostate tissue by focusing high-intensity ultrasound only on the affected area, destroying gland cells without damaging healthy surrounding tissue. The outpatient procedure takes less than two hours and patients can return to work and normal activities within a week.

Novel tricuspid repair with newly approved device

UC Davis Health cardiology team members are among the first in the country to treat patients with tricuspid regurgitation by using a groundbreaking catheter. The minimally invasive procedure, a transcatheter edge-to-edge repair (TEER), is made possible with a new medical device called the Abbott TriClip™ system. UC Davis Medical Center is one of the first sites nationwide to have commercial access to TriClip, and the first hospital in the western U.S. to utilize the system since FDA approval this spring. The new system is designed specifically for the tricuspid valve's position, location and shape, and was tested for safety and efficacy as part of the national TRILUMINATE Pivotal trial that included UC Davis Health.

World's first endoscopic, ultrasound-guided biopsy with new needle

UC Davis Health performed the world's first endoscopic, ultrasound-guided core biopsy of a pancreatic tumor, efficiently collecting a larger than normal core of tissue to allow for improved diagnostics. **Antonio Mendoza-Ladd, M.D.**, medical director of gastrointestinal endoscopy, used an EndoDrill® GI to biopsy a gastrointestinal stromal tumor and two pancreatic tumors. Developed by BibbInstruments AB, it offers much better access to deep tissues in upper GI tract, where cancer can often go undetected. Together, these three cases were the first performed in the U.S. and the pancreatic tumor biopsies were the first cases in the world done with the novel instrument.



New implant helps repair knee cartilage

UC Davis Health orthopaedic surgeon **Cassandra Lee, M.D.**, is among the first in the U.S. to implant a new product that can help preserve knee cartilage. Lee, chief of the Division of Sports Medicine, recently used CartiHeal™ Agili-C™ Cartilage Repair Implant to help ease a patient's knee pain after an injury. The absorbable, porous implants are made from a form of calcium carbonate; stem cells and healing factors from surrounding tissue and marrow migrate to the implant, allowing the damaged area to fill with new bone and cartilage.

Total-body PET captures immune response to COVID-19 infection

UC Davis scientists used dynamic total-body PET to provide the first imaging of the human body's immune response to COVID-19 infection in recovering patients. Researchers used the uEXPLORER total-body PET scanner, developed at UC Davis in collaboration with United Imaging Healthcare. Their work, published in *Science Advances* last fall, could lead to better understanding of how the immune system responds to viral infections and develops long-term protection against re-infection. The study showed the potential of total-body PET to assess T-cell distributions across the entire body, with image quality for detailed modeling and radiation low enough to allow broad application for human study, researchers said.

Pioneering Women's Cardiovascular Medicine Program celebrates **30 YEARS**

Amparo Villablanca

For three decades, the UC Davis Women's Cardiovascular Medicine Program has been raising awareness about the leading killer of women: heart disease. Established in 1994, the program was the first of its kind in the nation dedicated to female-focused heart disease care, research, education and community outreach.

The program offers personalized, integrated and women-centered care ranging from prevention to advanced treatments. It provides health equity-focused and guidelines-directed care in a specialty clinic for cardiac conditions that are unique to women or more often occur in women.

Founder **Amparo C. Villablanca, M.D.**, has led the program since its inception, along the way striving to enhance awareness of women's heart health among patients, providers and policymakers. Some of the program's achievements include recognition for distinction by California Gov. Pete Wilson; designation as a model women's heart program by the Department of Health and Human Services; establishing the Women's Center for Health at UC Davis and its leadership and fellowship training program; a collaboration with the California Department of Public Health to draft California's Master Plan for Stroke Prevention; and founding the Center for Women's Cardiovascular and Brain Health.

The nationally recognized program celebrated a special 30th anniversary gala held on National Wear Red Day.® Guests were invited to write a personal heart pledge and pin it to a red dress (see photo). Aaron Jones, an aide to Rep. Doris Matsui, read a proclamation at the event that the congresswoman presented on the floor of the U.S. House of Representatives, honoring the program for national leadership.

Judy Roberson (L) and Vicki Wheelock

Huntington's Disease Clinic transitions after 25 years of care and research

One afternoon in 1997, neurologist **Vicki Wheelock** received an invitation from **Judy Roberson** to chat about what UC Davis Health could do to advance research and care for patients with Huntington's disease (HD). Roberson is president of the Joseph P. Roberson Foundation, which was started by her brother-in-law, Joe, after his HD diagnosis. At the time, there was no clinic in Northern California that specialized in Huntington's.

That year, thanks to ongoing support from the foundation, the UC Davis Huntington's Disease Clinic launched, co-directed by Wheelock and nurse practitioner **Terry Tempkin**. The UC Davis Huntington's Disease Clinic began with eight patients and is now one of the largest in the country. It receives support from the Huntington's Disease Society of America (HDSA) as a Center of Excellence for clinical expertise, and is the first and only Level 1 HDSA Center for Excellence for Huntington's in Northern California.

Sasha Duffy

The Joseph P. Roberson Foundation has continued to help fund the center over the past 25 years, and recently reached a major milestone: $1 million in donations. Funding also comes from the Charles and Margaret Pue Foundation, the HDSA, and others.

Wheelock rose to prominence as a national and international leader in the field. Over the last few years she and other UC Davis researchers have published studies aimed at finding treatments through gene modification and stem cells.

Wheelock retired last summer, transitioning center leadership to movement disorders specialist **Alexandra (Sasha) Duffy**, but can often be seen at local HD community events.

A *BECKER'S* 'GREAT PSYCHIATRY AND MENTAL HEALTH PROGRAM'

UC Davis Health was one of 36 hospitals and health systems in the U.S. honored by *Becker's Hospital Review* in its January list of "hospitals and health systems with great psychiatry and mental health programs." The publication highlighted the UC Davis Department of Psychiatry and Behavioral Sciences as "diverse, profitable, and a trailblazer within the field." The honor comes at a momentous time for the department, which recently opened its Advanced Psychiatric Therapeutics Clinic (see page 14).

A *BECKER'S* 'GREAT DIABETES AND ENDOCRINOLOGY PROGRAM'

UC Davis Health was also one of 36 U.S. hospitals and health systems honored by *Becker's* in its first "hospitals and health systems with great diabetes and endocrinology programs" in February. UC Davis Health was the only organization in Northern California on the list, and one of three in California. The division has a new endocrine XY clinic for children and a new endocrine cardiometabolic clinic, and is home to a dedicated transplant endocrinology clinic and a specialized inpatient diabetes program.

A *BECKER'S* 'GREAT ONCOLOGY PROGRAM'

UC Davis Health was also listed by *Becker's* as one of the nation's top "100 hospitals and health systems with great oncology programs" last fall. UC Davis Comprehensive Cancer Center is the only National Cancer Institute-designated cancer center serving patients in the Central Valley and inland California, a region of over 6 million ethnically diverse people. UC Davis Health also appeared on *Becker's* lists of 70 hospitals and health systems with spine and neuroscience programs to know last fall, and 100 hospitals and health systems with great heart programs last summer.

COMPREHENSIVE BREAST IMAGING CENTER ACCREDITATION

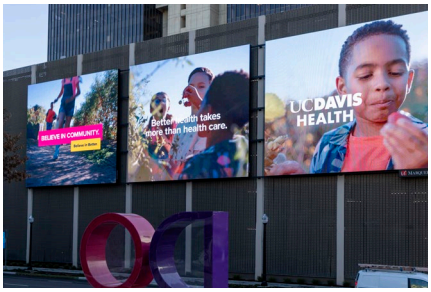
The American College of Radiology (ACR) has recognized UC Davis Medical Center as a Comprehensive Breast Imaging Center. The new designation acknowledges facilities that achieve excellence by participating in rigorous quality assurance programs, and are fully accredited by ACR in mammography, breast MRI, stereotactic breast biopsy and breast ultrasound. ACR evaluation took place at the main breast radiology location at the Lawrence J. Ellison Ambulatory Care Center in Sacramento.

The Believe in Better brand campaign:

Delivering on our promise

Highlighting our efforts and the importance of improving health for all

You may have seen new UC Davis Health Believe in Better television commercials, billboards, online ads on media platforms, or even on the digital screens in Downtown Commons (DOCO) near the Golden 1 Center. Believe in Better is a new brand campaign for UC Davis Health. At UC Davis Health, we believe the ability to live a healthy life should be enjoyed by every person. That's why we're committed to inspiring better health for all, not just our patients, through our new Believe in Better campaign.



The process of developing our new brand platform centered on our core values and strategic goals and involved comprehensive research including a series of focus groups and informational sessions with patients, faculty, staff, employee groups, leadership and the community. Our new brand platform represents nearly two years of behind-the-scenes research and work. This multichannel campaign allows us to showcase the wonderful work that our organization and its faculty, staff and students do every day, in so many ways, to provide better health for all.

Better health is more than health care

We know that good health involves more than the services we provide within the walls of our hospital — no matter how excellent. Research shows that factors outside of health care settings, such as access to job opportunities, stable housing, healthy food and clean air, have huge impacts on health.

Better health is more than health care, and we're acting to help change these circumstances and get closer to health equity in the community. By highlighting these efforts, their importance, and their impacts through the new Believe in Better campaign, we hope to encourage more people to see that removing barriers to health is possible — and hopefully, inspire more work to help make it happen.

Pillars to health

The campaign focuses on sharing examples of positive actions around foundational pillars to health such as healthy food and food security, local economic opportunity, environmental impact, and access to inclusive health and mental health care.

For instance, to expand education on healthy food, our chefs have partnered with the Food Literacy Center to teach cooking and nutrition in low-income schools, where children are at the highest risk of diet-related diseases.

UC Davis Health's Executive Chef Santana Diaz is also leading the charge in changing hospital food by tapping into locally grown produce. By purchasing much of its food from sources almost within view of the hospital's tallest tower, UC Davis Health provides a healthy economic boost for locally produced food. This also can reduce delivery mileage and fuel consumption, helping UC Davis Health in its commitment to lower its carbon footprint — a commitment also recognized with sustainability awards from organizations like Practice Greenhealth.

In addition to sourcing its food locally, UC Davis Health also seeks to support the local economy and strengthen job security in the community by hiring, contracting, and investing locally.

Access to quality and affordable health care is another essential factor in a healthy community. Our Federally Qualified Health Center partners, as well as the nationally recognized UC Davis Health affiliated student-run clinics, provide low-cost or free, culturally appropriate health care to thousands of people from underserved communities throughout Sacramento.

Communities challenged by health disparities also stand to benefit from the culturally competent and socially inclusive care offered by the physicians trained in the UC Davis School of Medicine's Community Health Scholars program, which trains future doctors to practice in California's rural, urban, valley and tribal communities.

Access to mental and behavioral health care is just as vital as physical health care. For example, helping vulnerable populations, UC Davis Health's community-based Early Psychosis education and outreach program stresses early identification and intervention to reduce impacts on affected individuals, including Medi-Cal and uninsured patients.

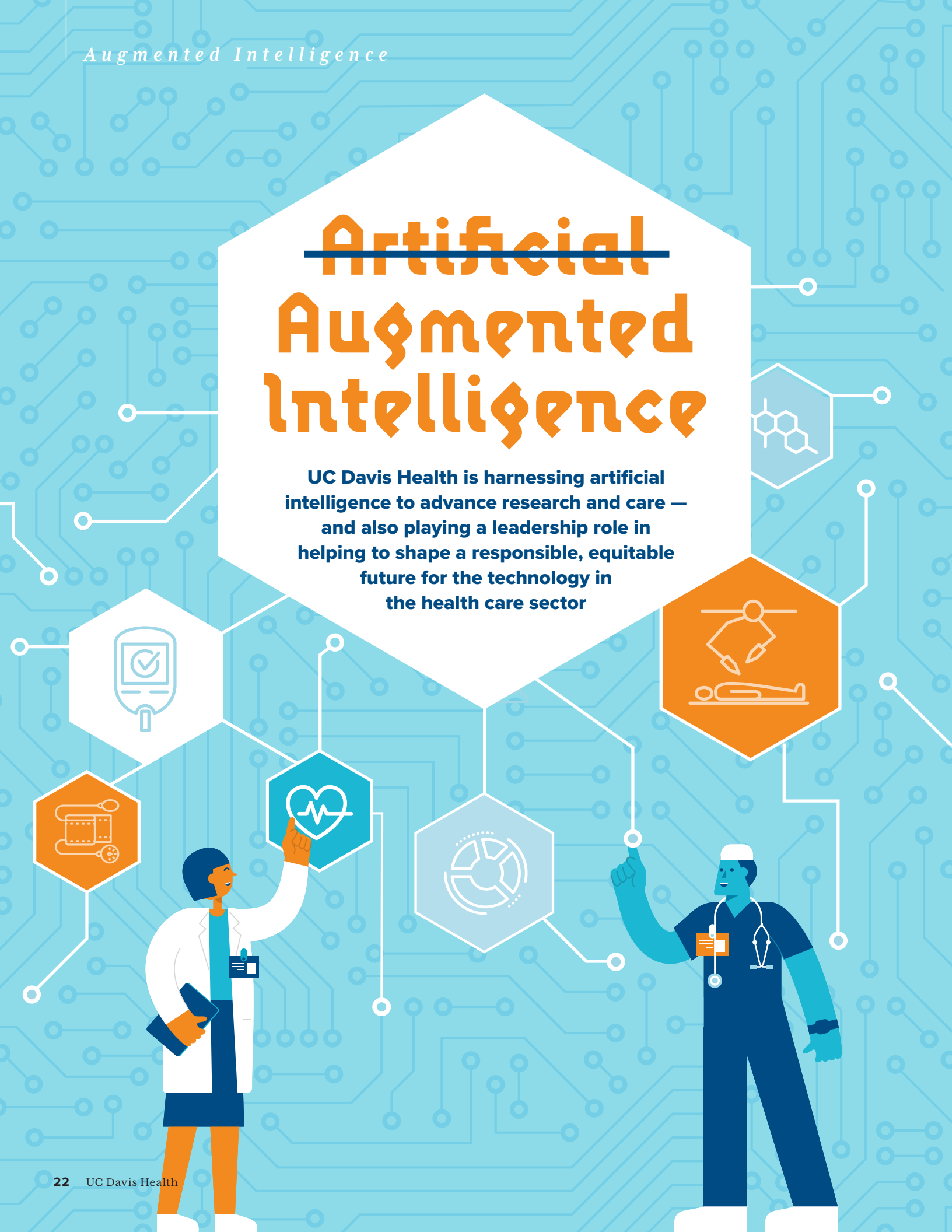
Learn more

Removing barriers to health doesn't happen overnight, or alone. It takes all of us, making consistent steps, to create big changes. We hope that by sharing news about meaningful actions here at UC Davis Health, we can help show that better health for all is possible.

Learn more at **believe.ucdavis.edu**.

~~Artificial~~ Augmented Intelligence

UC Davis Health is harnessing artificial intelligence to advance research and care — and also playing a leadership role in helping to shape a responsible, equitable future for the technology in the health care sector



UC Davis Health is embracing AI

As the promise and pitfalls of generative AI in health care emerge as top-of-mind topics — with the number of research papers on the subject seemingly doubling every few months — UC Davis Health has simultaneously increased both its activity and influence around AI.

The health system is recruiting prominent, veteran digital leaders; leveraging AI analysis to enhance diagnosis and screenings; bolstering remote data collection to feed that analysis; pursuing AI solutions to reduce provider burdens (and burnout) from medical documentation; and playing major roles in national public-private collaboratives that seek ethical, equitable adoption of the technology.

It's all with an eye toward preserving, and even enhancing, the human or personal touch in health care and health decision-making, says UC Davis Health CEO David Lubarsky, M.D., M.B.A., F.A.S.A.

"Doctors and nurses will always be in charge of the decision-making," Lubarsky said in his leadership message in this issue (see inside front cover). "AI is artificial intelligence, but it's not. In health care, it's actually augmented intelligence — it's about giving your doctors and your nurses more tools to make better decisions for the patients."

UC Davis Health has been a telehealth pioneer since the 1990s, and earned honors for the past decade as a "Most Wired" health system for high-level, innovative uses of information technology. That influence now continues in the digital and AI space as well.

Chief Information and Digital Health Officer Ashish Atreja, M.D., M.P.H., F.A.C.P., A.G.A.F., who joined UC Davis Health from Mount Sinai in late 2020, was named among the nation's top 30 health care IT influencers in 2022 by *HealthTech* magazine and among the top 35 chief digital officers of health systems to know last year by *Becker's Hospital Review*. Atreja is known for establishing innovation hubs within academic medical centers to build and test disruptive digital health technologies, and credited with coining the term "evidence-based digital medicine."

Dennis Chornenky, M.B.A., M.P.H., a former senior advisor and strategy consultant in AI and emerging technology for the White House, was also named chief AI advisor to UC Davis Health last summer. In his newly created key role, Chornenky, with his consulting and technology firm Domelabs AI, leads efforts to establish strategy and governance frameworks that ensure UC Davis Health's approach to AI is safe, ethical, and meets emerging regulatory compliance standards. He previously led initiatives on AI policy, digital health, and national security across two presidential administrations.

> **"In health care, it's actually augmented intelligence — it's about giving doctors and nurses more tools to make better decisions for patients."**
>
> – DAVID LUBARSKY, UC DAVIS HEALTH CEO

A variety of UC Davis Health researchers and clinicians are already using AI for disease patterns, looking for lifesaving insights in areas ranging from cancer screening and stroke diagnosis to opioid surveillance (see examples p. 26). Meanwhile, health system leaders and faculty are involved nationally in forging collaborative ways to advance AI adoption in an enlightened, equitable way.

The University of California Health system, which includes UC Davis Health and other UC medical centers, was a nonprofit founding partner of the prominent Coalition for Health AI (CHAI), along with health systems like Mayo Clinic and Stanford Medicine and industry partners such as Amazon, Google and Microsoft. Last year the coalition issued a "Blueprint for Trustworthy AI" to identify and propose solutions to issues that must be addressed for trustworthy health AI, such as risk of bias.

In October, UC Davis Health along with other UC Health systems also launched VALID AI, a member-led collective of health systems, health plans, non-profit associations, coalitions, and technology and research partners that aims to help facilitate and accelerate responsible Gen AI in health care (see story p. 24).

Following a White House executive order on AI last fall, UC Davis Health was one of 28 provider and payer organizations that made voluntary commitments to help move toward safe, secure, and trustworthy purchasing and use of AI.

"We're striving to not only improve patient outcomes through digital health and AI, but to help be a game-changer for the entire health care sector," Atreja said.

UC Provost Katherine Newman invited Atreja to speak at a February UC AI congress that brought together minds from across the UC's 10 campuses, three national labs and six academic health centers to discuss the university's role in shaping AI in service of the public good.

"I see the University of California as the University of Collaboration, and that's how we need to lead the world, by bringing us together," Atreja said in an accompanying story.

UC Davis Health, NODE.Health, and leading health systems launch VALID AI

The new 'execution accelerator' partnership will create a collaborative community to advance generative AI — in a responsible manner — to improve health care and research

As generative artificial intelligence (Gen AI) becomes more prevalent in health care, UC Davis Health along with the rest of the University of California health systems is now leading a member-led collective of health systems, health plans, nonprofit associations, and technology and research partners across the U.S. and internationally.

The group of more than 30 founding partners was announced at the launch of VALID AI at the Future & Health Summit at HLTH last fall. VALID AI — short for Vision, Alignment, Learning, Implementation, and Dissemination of Validated Generative AI in Healthcare — is a collaborative that will explore uses, pitfalls, and best practices for Gen AI in health care and research, and accelerate execution and real-world evidence.

Gen AI is a watershed moment in health care, but fewer than 1 in 10 health care organizations have concrete plans in place for execution, coalition leaders noted. VALID AI hopes to help bridge this gap.

"By embracing open innovation and radical collaboration, health care organizations of all sizes can lead the charge in creating value from Gen AI in a responsible manner," said Ashish Atreja, M.D., M.P.H., F.A.C.P., A.G.A.F., UC Davis Health's chief information and digital health officer, and VALID AI's founding chair. "We now have an opportunity to co-create the science of Gen AI with our diverse partners in a way that could fundamentally change how care and research will be delivered in the future."

By bringing together diverse perspectives, expertise, and insights, VALID AI is intended to push the boundaries of implementing AI technology and ensure the responsible and ethical development of Gen AI, ultimately shaping a more equitable future for all.

"Gen AI holds tremendous promise for health care but requires guardrails to ensure safety and efficacy," said Dennis Chornenky, M.B.A., M.P.H., chief AI advisor at UC Davis Health and CEO of consulting and technology firm Domelabs AI, who serves as VALID AI's executive director. "VALID AI will accelerate adoption through coordinated validation of use-cases and alignment around best practices for AI governance and AI-enabled innovation."

"We now have an opportunity to co-create the science of gen AI with our diverse partners in a way that could fundamentally change how care and research will be delivered in the future."

ASHISH ATREJA, UC DAVIS HEALTH CHIEF INFORMATION AND DIGITAL HEALTH OFFICER

Five core values

The VALID AI program revolves around a collective of five core values and work areas, focused on bringing the power of generative AI to health care organizations and patients:

- ***Vision:*** Create a cohesive strategy and shared vision to guide generative AI research in health care, aligning relevant parties, facilitating learning, promoting equitable access to generative AI resources, and accelerating implementation across member organizations.
- ***Alignment:*** Help member organizations and partners align with common standards as they evolve and apply them internally with best-suited organizational frameworks and safe and equitable governance practices.
- ***Learning:*** Aggregate leading-edge research on use-cases, implementation science, policy work, and industry standards from the U.S. and around the world, and share it with member organizations and key partners through virtual learning sessions, executive briefings, in-person summits, an online portal, and an online forum for sharing ideas.

Gen AI is a watershed moment in health care, but fewer than 1 in 10 health care organizations have concrete plans in place for execution. VALID AI hopes to help bridge this gap.

- ***Implementation:*** Establish a collaborative AI sandbox to support member organizations with integration, validation, and implementation of generative AI use-cases. The sandbox program will bring together startups, researchers, and leaders focusing on generative AI in health care with members receiving support and favorable terms for collaboration.
- ***Dissemination:*** Share knowledge and science generated through collective efforts on a global scale through co-publishing white papers, journal articles, and op-eds to advance innovation and enrich the scientific and business communities. An in-person summit will bring CEOs, executives, and leading practitioners together to discuss advancements and share insights.

"UC experts across its health system are excited to be a catalyst and collaborative force to bring leading academic health centers and industries together for a shared purpose," said Van Williams, M.B.A., the UC's vice president and chief information officer. "Taking this step forward in developing the frameworks that will guide groundbreaking and ethical uses of Gen AI is critical."

To learn more about the initiative and express interest in collaborating, visit **VALIDAI.Health**.

VALID AI leaders urge: Integrate social determinants at the point of care

One of VALID AI's first actions was to issue a call to action across the industry to help make equity considerations a structural part of AI adoption.

The collective is encouraging organizations worldwide to use a screening method called "Social Vital Signs" to identify and evaluate patients' social determinants of health (SDOH) when delivering care.

Social determinants such as socioeconomic status, language, literacy, neighborhood, employment, social support and care access are crucial in shaping individual health outcomes and risks. But they're often overlooked, hidden within unstructured notes, or insufficiently captured during patient assessments, VALID AI leaders noted in a February press release outlining the challenge.

They said while evidence has been building on the need for making SDOH available as Social Vital Signs, real-world implementation of the approach has lagged due to technology, data-sharing and policy barriers.

"I'm hoping this challenge and call to action will activate organizations of all sizes to work together, in an open innovation framework, to make Social Vital Signs a reality for all care settings — irrespective of geographic location or practice type," said Ashish Atreja, CIO and chief digital health officer at UC Davis Health and VALID AI's founding chair.

VALID AI member organizations will serve as co-hosts in each state to support Gen AI testing environments and workstreams. They, in turn, will assist organizations, researchers, students, patients, and community members to tackle a series of mini challenges that currently prevent the widespread adoption of Social Vital Signs in clinical practice.

The output will be made available as part of a Gen AI "SDOH Toolkit" that aims to:

- Develop a database of content and standards related to SDOH
- Create tools to help providers improve clinical documentation to capture SDOH
- Leverage Gen AI to identify and predict SDOH indicators
- Create dashboards to allow providers to exchange SDOH data
- Identify local SDOH gaps and find solutions to address those needs

Organizations and individuals can join in the challenge by visiting VALIDAI.Health.

UC Davis Health a founding member of new Mayo global data network

This April, UC Davis Health became one of eight founding members of Mayo Clinic Platform Connect, a global data-sharing network that aims to drive AI innovation in health care. Other members include Hospital Israelita Albert Einstein (Brazil), the Mayo Clinic, Mercy (St. Louis), Seoul National University Hospital, Sheba Medical Center (Israel), SingHealth, and the University Health Network (Toronto).

Mayo officials said the network now has de-identified clinical data from 32 million patient lives, including "representation from diverse global regions, which is critical to improve accuracy, reduce model bias, and create more diverse, and therefore stronger, treatment recommendations for patients."

"This network extends the work we are doing to advance the responsible and ethical development of generative AI-powered health care globally," Atreja said.

VALID AI founding partners

Health systems and health plans

Amrita University, India (global partner)
Atlantic Health
Boston Children's Hospital
Cedars-Sinai
Children's Hospital of Los Angeles
CommonSpirit Health
Cone Health
Elevance
ELNA Medical, Canada (global partner)
Fairview Health Services
Houston Methodist
MedStar Health
Memorial Hermann
MetroHealth
Michigan Medicine
Moffitt Cancer Center
New York-Presbyterian
Ochsner Health
Sheba, Israel (global partner)
UC Berkeley
UC Davis Health
UC Irvine Health
UC Riverside Health
UC San Diego Health
UCLA Health
UCSF
Union Health
University of Utah Health
Urology of Virginia
Vanderbilt University
Yale New Haven Health System

Associations and research partners

Berkeley Artificial Intelligence Research Lab (BAIR)
Berkeley Skydeck
BrainX AI
Center for Health Technology & Innovation – American Medical Association
Coalition for Health AI (CHAI)
MedARC
Node.Health

Snapshots: Harnessing AI to improve care

Using AI-driven data and image analysis to enhance prevention, triage

Screening: Better prediction of liver cancer risk

A team of UC Davis Health clinicians and data scientists have developed a machine-learning model to better predict which patients are at greater risk of developing the common liver cancer hepatocellular carcinoma (HCC).

Their findings — published in January in the journal *Gastro Hep Advances* — describe how predictive-learning can aid in providing early HCC risk assessments for patients diagnosed with metabolic dysfunction-associated steatotic liver disease or MASLD, formerly called nonalcoholic fatty liver disease or NAFLD. Around 25% of Americans have some form of MASLD, an accumulation of fat in the liver often linked to metabolic diseases such as type 2 diabetes.

"It doesn't make sense to biopsy every patient with MASLD, but if we can segment for risk, we can track those people more closely and perhaps catch HCC early."

ANIKET ALURWAR,
CLINICAL INFORMATICS SPECIALIST

The pilot technology may be able to give providers critical information to screen patients more closely and offer more personalized care.

"MASLD can lead to HCC, but the disease is quite sneaky, and it's often unclear which patients face that risk," said study co-author Aniket Alurwar, M.S., a clinical informatics specialist at the UC Davis Center for Precision Medicine and Data Sciences. "It doesn't make sense to biopsy every patient with MASLD, but if we can segment for risk, we can track those people more closely and perhaps catch HCC early."

Researchers trained machine-learning algorithms, which leveraged large datasets to make verifiable predictions, and tested them against de-identified data from 1,561 UC Davis Health and 686 UCSF patients. The study confirmed one of the most reliable markers for HCC risk is advanced liver fibrosis or scarring, characterized by high Fibrosis-4 Index (FIB-4) scores. However, researchers also found four additional risk factors associated with liver function: high cholesterol, hypertension, bilirubin and alkaline phosphatase (ALP). A combination of those factors in one model helped predict HCC risk.

The team found there are multiple pathways to HCC, with high FIB-4 the most obvious. In some cases, patients with low FIB-4 but high cholesterol, bilirubin and hypertension also developed HCC. Under current guidelines, these patients would not receive precautionary care.

"We got 92.12% accuracy when predicting which MASLD patients would develop HCC, which is very good for a pilot model," Alurwar said. "Patients with low FIB-4 are typically considered low risk and do not get referred for further assessment. By showing which of these 'low risk' patients could develop HCC, we can get them referred for biopsies or imaging."

Researchers plan to advance their accuracy by incorporating more precise data, such as clinical notes, using AI natural language processing to translate written text into data. The team will also test Bedrock, Amazon's generative AI platform. Eventually, a similar model could be incorporated into electronic health records, or a separate platform, to flag greater HCC risk.

Acute care: Identifying stroke quickly

UC Davis Health has adopted a new technology platform, Viz.ai, to help quickly identify patients suspected of having a stroke. The hospital is the first in the Sacramento region to use the platform, which utilizes image-based AI to analyze CT scans and alert care teams of a potential stroke within minutes. It complies with federal patient privacy laws, allowing the care team to communicate securely.

"Time is a major determining factor in outcomes for stroke patients. Physicians will still review all CT scans — the AI will help to prioritize cases," said Kwan Ng, M.D., Ph.D., director of the UC Davis Health Comprehensive Stroke Center.

In addition to coordinating care within the hospital, Viz.ai will allow remote hospitals to securely share patient images and information with experts at UC Davis' stroke center. Images will now be shared within minutes, allowing UC Davis clinicians to make more informed decisions before patient transfers.

"Our partnership with Viz.ai is a great example of how we're empowering our clinicians with the latest tools," said UC Davis Health's chief AI advisor Dennis Chornenky. "This is part of a broader AI adoption roadmap that will help us augment, but not replace, the capabilities of our care teams and improve patient experience."

"Time is a major determining factor in outcomes for stroke patients. Physicians will still review all CT scans — the AI will help to prioritize cases."

KWAN NG,
UC DAVIS COMPREHENSIVE STROKE PROGRAM DIRECTOR

As of press time, UC Davis Health had successfully launched Viz.AI usage as part of its telestroke program with the Adventist Health + Rideout hospital serving the Yuba-Sutter region — with one life saved already. After a patient presented to Rideout with severe stroke symptoms, Viz.ai detected a large vessel problem within minutes of imaging completion. Alerts to the local emergency physician and UC Davis stroke neurologist allowed for expedited review of the patient's presentation and imaging, and a rapid determination to pursue thrombectomy. A decision to transfer the patient for treatment occurred within 10–15 minutes of imaging completion. Time saved is brain saved, and this process saved the patient three to four times the amount of time spent in more traditional triage, Ng noted.

Expansions of Viz.AI usage are underway for our telestroke partnerships with Adventist Health Lodi Memorial Hospital serving San Joaquin County, Howard Memorial Hospital in Mendocino County, and NorthBay Health Hospitals in Solano.

More examples:

Improving early breast cancer detection

With support from the National Cancer Institute, a national research team co-led by Diana Miglioretti, Ph.D., is exploring how to use AI to make breast cancer screening and surveillance more accurate and equitable. The team is using AI to predict which women with no history of breast cancer are at high risk of advanced cancer, and also to determine whether AI detection scores and facility-level interventions can improve outcomes.

Creating de-identified data from clinical notes

AI analyzes clinical notes and longitudinal medical histories to create aggregate, de-identified data for an opioid overdose surveillance dashboard created for public health agencies in Sacramento and Yolo counties. The pilot using the SMART Cumulus digital platform is part of a partnership involving UC Davis Health and its Digital CoLab innovation hub, the CDC Foundation, and Boston Children's Hospital.

Streamlining physician notes

UC Davis Health is piloting AI scribe technology to decrease clinician burnout by automating note captures with human oversight. AI drafts about 90% of note content with an aim to improve physician morale, information accuracy, patient satisfaction and access to care. The first pilot generated tremendous enthusiasm among participating physicians, Atreja said, and at press time was expanding with system-wide implementation envisioned in the future.

Improving real time decision-making support during surgery

Founded with the help of a prestigious $6.3 million NIH P41 grant, UC Davis' National Center for Interventional Biophotonic Technologies is advancing two noninvasive optical imaging technologies — both developed here — that measure fluctuations in light from bodily tissues. By adding AI capabilities to analyze data, researchers intend to create new instruments for robust tissue analysis during surgery and for blood flow monitoring.

Developing privacy-preserving machine learning techniques

UC Davis researchers were awarded a four-year, $1.2 million National Institutes of Health grant to generate high-quality "synthetic data," which can be generated from real-world sources such as images, videos, text or speech in a way that preserves statistical properties without risk of exposing sensitive information.

In December, UC Davis Health's CEO David Lubarsky and Chief AI Advisor Dennis Chornenky met with Director of News and Media Relations Pamela Wu to discuss trends, possibilities and challenges with AI in health care, including the relationship between human intelligence and AI. Here are excerpts of the discussion, edited for length.

The full 39-minute video is available at ucdavis.health/48v54mU.

'We will never cede control of our care for human beings to computers'

How is UC Davis Health approaching AI's role and patient care?

Lubarsky: The first and most important thing is that doctors and nurses are in charge. Doctors and nurses will always be in charge of not only the decision making, but in being the partner to the patient in the decision making. And, you know, AI is artificial intelligence, but it's not. In health care, it's really augmented intelligence. It's about giving your doctors and your nurses more tools to make better decisions for the patient.

Patients want their care personalized to them. We hear this over and over, and we aim to deliver that. How big of a role can AI have in personalizing care?

Lubarsky: I think AI is actually the route to getting truly personalized recommendations... When Amazon sells you the reading lamp that goes with your book purchase, it knows what you want... It's running algorithms in the background all the time. Those personalized recommendations foundationally are from AI. There's no reason we can't apply... that same thinking, if you will, so that all the past decisions and past diseases and past labs on a patient's chart can help inform what the next step should be for that patient in their journey towards wellness...

And we're used to "self-service" (through digital technology) now, especially the younger age group. A study said 44% of young adults 18 to 34 believe that by using the internet and Chat GPT, they can know as much as their doctor about a disease process... We know that's not really true, but the point is, we are evolving to where people expect to quickly master a topic and become a true partner in their care. And I think that's where this is going. Self-identification of a problem, self-diagnosis, self-triage and self-treatment — if guided correctly by health professionals — could truly

"We have added very low-value interactive time with keyboards to the most expensive labor in the United States. We've turned our brightest and best and most compassionate health care providers into typists. And so what generative AI will do is free them."

— DAVID LUBARSKY

UC Davis Health CEO and former White House AI advisor discuss AI and machine learning in health care

From left: David Lubarsky, Pamela Wu, and Dennis Chornenky

extend our ability to serve what is an ever-burgeoning need, and (provide) personal health care.

Chornenky: There's certainly a reason we have medical schools and licensing and residencies, and I think it's very important that we build off the value infrastructure and responsibility and guardrails we do have in place. At the same time, at least personally, I feel like we haven't always done a great job as a society of educating consumers and patients about how to really achieve well-being and wellness. There is a little bit of a mentality that if the tiniest thing is wrong with you, you go to your doctor and your doctor's going to fix it. That your wellness is your doctor's responsibility in some ways. And of course, it's primarily our responsibility starting as patients, as consumers. And so to the extent that AI, especially generative AI, can help direct consumers to live healthier lives, they're going to need less care. And when they do need care, they will have better guidance about the kind of care that they might need, how to connect with the right professionals, how to stay on course with the right recommendations, and why it's important to listen to medical professionals.

When it comes to AI and health care, what are regulators keeping a close eye on?

Chornenky: That conversation has rapidly accelerated, especially (recently)... We had the AI executive order coming out of the White House... that builds on some previous executive actions, but really takes it further now, looking at more specific requirements for the private sector... to help ensure consumer safety and patient safety with use of AI technology. So things like watermarking AI-generated content for example, or other forms of disclosure so that folks know that they're speaking to an AI chatbot — rather than a chatbot that's pretending to be a human, in order to try to create a more human experience. I think it's very important that we always help make people aware of what exactly they're interacting with and in what ways.

Snapshot: **Dennis Chornenky**

Chief AI Advisor to UC Davis Health

Experience:

- White House Senior Advisor and Presidential Innovation Fellow
- Senior Vice President and Chief AI Officer, Optum Health
- Investment banker, Morgan Stanley and Lazard
- Startup CEO

Education:

- B.A., Political Science, UC Berkeley
- M.B.A., Oxford
- M.P.H., Harvard
- M.S., Management of Technology and Business Analytics, M.I.T. (Sloan Fellow in Global Leadership and Innovation)

Snapshot: **David Lubarsky**

Vice Chancellor of Human Health Sciences and Chief Executive Officer, UC Davis Health

Experience:

- 100 Most Influential People in Health Care, *Modern Healthcare*, 2022
- 100 Academic Medical Center CEOs to Know and 60 Health System Influencers, *Becker's Hospital Review*, 2023
- Top 25 hospital executives, *C-Suite Spotlight*, 2023
- Chief Medical Officer and Systems Integration Officer, University of Miami Health System
- Top 100 published U.S. anesthesiologists

Education:

- M.D., Washington University in St. Louis
- Residency, Anesthesia, NYU
- Fellowship, Cardiovascular Anesthesia and Clinical Research, NYU
- M.B.A., Duke (Fuqua Scholar and valedictorian)

What is the relationship between artificial intelligence and human intelligence in terms of how they reinforce one another?

Lubarsky: So we're working with a company that does remote patient monitoring, and it has eight different vital signs it collects every minute of the day. That's 1,440 minutes, eight vital signs each minute — so 11,500 or so data points per patient. Applying AI which looks at patterns of these vital signs can very, very, very early on detect who might be deteriorating, allowing the doctor and the nurse to keep a closer eye on that patient, to intervene earlier, to be prepared for a deterioration. It's not telling the doctor what to do. They're going to eventually expand it to 16 variables — now there'll be 24,000 data points per day per patient. A human being can't process that. And they can't say, "oh, you know, this variable moved here, and then in relation to this one, it moved here." It's just too complicated for the human brain. But AI is built to analyze those patterns. So number one is pattern identification.

...Two thirds of patients would like the doctor and their medical record to know all the information collected on their (smart watch/device). There are too many data points. But it could be incredibly valuable if an AI engine was running behind it and said "I've looked at your sleep pattern and you're not sleeping through the night anymore. What are the causes of that? Are you drinking alcohol? Are you anxious? Have you changed pillows? Are you having allergy attacks in the night?" It prompts your (provider) to ask the right question. They can't possibly have time to parse through all that data. AI can make your care more personalized, and it doesn't mean it's making the decisions either for you or your doctor. It's just packaging ideas and information in a way that prompts that personalized attention."

What is the role of generative AI — which generates new data, text or other media — in health care, and where do you see that headed?

Lubarsky: ...More than 40%, and often more than 50% of the time nurses spend is writing notes and documenting what they've done. None of that is necessary. For physicians, their biggest complaint is filling stuff about patient visits into the electronic medical record. We have added very low-value interactive time with keyboards to the most expensive labor in the United States. We've turned our brightest and best and most compassionate health care providers into typists. And so what generative AI will do is free them. It doesn't mean we will let AI write the notes. But that (AI) tool can erase the burden. It can eliminate the contribution of overzealous documentation leading to burnout. That's the number-one initiative we're pursuing at UC Davis Health, because we care about our providers. Because when we care about them, they're able to care for their patients. At the (medical) office, there's always a keyboard and a screen either between you and the doctor and the nurse, or off to the side. So they're constantly talking to you and then turning around and typing. We're going to eliminate that. We're going to eliminate the electronic barrier that we've placed between patients and providers. And generative AI is going to do it (see story capsule p. 27).

"In isolation, these technologies are moving too quickly for any one organization to really be able to figure it out on its own." — DENNIS CHORNENKY

Chornenky: ... I think generative AI will have more transformative impact on health care in, let's say the short-to-medium term than any other AI/machine learning methodology. Others will probably have their day in the next 10, 20, 30 years... but right now is really the time of generative AI. And to that point, thanks to Dr. Lubarsky's vision and our CIO and Chief Digital Officer, Dr. Ashish Atreja, we just had a very successful launch of a new collaborative bringing leading health systems and payers and academic medical centers, covering the entire country, together to help advance responsible adoption of generative AI technologies (VALID AI, see story p. 24). Focused on execution... discovery... validation of use cases... across member organizations to help build capacity mutually together. Because in isolation, these technologies are moving too quickly for any one organization to really be able to figure it out on its own. There are so many research papers coming out on generative AI right now. It was near zero per month in certain publication databases even a year and a half ago. But now it's getting to hundreds per month and very quickly climbing.

Lubarsky: ...If you go to Amazon and want to parse through 14,000 reviews... now there's an AI-generated blurb. That doesn't always mean it's all the information you're seeking, but it's a pretty good summary and it's very pertinent. And it's the same thing we've done. If I'm a little worried about a patient's hemoglobin, I can ask the record to provide all the hemoglobins for this patient for the last 10 years. You can have a table generated. Where it would previously take a long time for a doctor to parse through individual labs. The capability of, again, personalizing care by extracting with a simple query all the pertinent information.

And then you could ask Chat GPT, what are all the causes of low hemo-

"We will never be able to fill the gap by just training more people. AI allows us to change the work so we're all working at the very top of our capabilities... It is going to make us better at treating people who need to be treated." — DAVID LUBARSKY

globin? And you've thought about 39 of the 40, but hadn't thought about that 40th. It's not saying what you should do. It's doing a complete information search for you so that you don't forget anything... Chat GPT can (currently) give some false information, but the next generation will provide references if you want them for each of its recommendations or statements. Once that happens, we can now get the validation and verification that it was a correct interpretation...

What do you think warrants skepticism as we see more AI in health care? What issues and challenges are you keeping an eye on?

Lubarsky: We've made it really clear that our health care providers cannot, should not, and will not ever seek judgment or courses of treatment through what's suggested on the internet, and specifically with Chat GPT. We added an AI paragraph to our medical staff bylaws about what constitutes the responsibility of the physician to the patient. And we made it really clear that they were not to ever rely on that in terms of driving their decision making.

Chornenky: ...There is this potential for hallucinations, these kind of fake responses, and so this is one of the reasons it's so important to doublecheck everything for human beings. We're just not at the point where the large language models' failure rate is one in a million or one in a billion. It can be a lot more frequent.

And it's also a bit of a social choice or choice for us in terms of technology and how we want to use it. Because in some ways, hallucinations actually can be a measure of creativity in a model. So if you completely want to eliminate the potential for hallucinations — and maybe we (do) want that in certain environments — you're really reducing that model's ability only to very precisely and almost verbatim kind of spit back things it's gotten from its training data. But if we want to give it a little bit more flexibility for interpretation or suggestions or creative solutions to certain problems, we sort of have to set the parameters a little bit differently...

That's a social conversation and how our interaction with this technology will evolve over time. But I think for environments like ours in health care, especially now in the earlier stages of these technologies, we really need to err on the side of caution.

Lubarsky: The part that worries us is down the road. It's five years, 10 years before we'll have the right level of insight into data to really let AI really suggest treatment suggestions. But all the rest of it's really worked out and we're just not employing it... (Summarizing notes)... pattern recognition... facial recognition. We can do all that and not cede one ounce of responsibility or decision making to computers. We can make doctors more efficient... When they added AI into the mix with breast-trained radiologists, they were able to cut the number of people required to do a day's worth of readings in half. You may say "someone's going to lose their job." No, no. Only half the women in America who should have their breast mammograms get them read. Imagine if we, without adding one penny to the labor workforce, can now get to 100% of women and have their breast mammograms read by professionals.

We will never, ever be able to catch up with the demand right now because of the aging of the population, the expansion of possibilities, and hopefully a continuing journey towards wellness for a much longer period of time in life. We need to change how we work. We will never be able to fill the gap by just training more people. AI allows us to change the work so we're all working at the very top of our capabilities... It is going to make us better at treating people who need to be treated.

How do we make sure we're not perpetuating inequities by looking at old patterns to inform new ones?

Chornenky: What we really need to do is provide... better access to more diverse, more equitable data sets... Historically health care data has been so siloed and difficult to access... One very interesting thing that I think is going to help with this is the federal government is really trying to promote the use of privacy preserving technologies... (for) machine learning modeling on data that stays encrypted. The data never has to actually get exposed or unencrypted... We can kind of skip risks (of reidentification) and still provide better access for folks that want advanced medical science using these more diverse sets.

If there's one takeaway you want our patients and employees to know, what would that be?

Lubarsky: AI is augmented intelligence. It's for every employee, every nurse, every doctor to use on behalf of their patients — for whom they are solely responsible. And we will never cede control of our care for human beings to computers.

‘You have to practice to the highest level of your license’

UC Davis medical students reach underserved populations between Sacramento and Portland in the COMPADRE partnership, an effort to increase the rural physician workforce

UC Davis third-year medical student Brandon Drws meets with his patient at Cascades East Family Medicine Center in Klamath Falls, OR.

(KLAMATH FALLS, OR) Deep in Southern Oregon — facing backdrops of rich forests, a world-class migratory bird flyway and vivid landscapes — Brandon Drws is helping to transform how UC Davis is training future doctors for rural communities.

He is the first student from the UC Davis School of Medicine assigned to care for patients out of state under a unique partnership with Oregon Health & Science University (OHSU). The collaboration, known as COMPADRE, sends students and residents to clinics and hospitals in Sacramento and Portland, as well as the vast, more sparsely populated land in between where physicians are in short supply.

Drws’s six-week stint at Cascades East Family Medicine Center serves as a preview of the life and work of a rural doctor. And the assignment is a good fit: he’s a nature lover from rustic El Dorado County. So choosing a clinical rotation in this city of 22,000 is like a dream come true.

“I love the community that you get to build with your patients, the relationships you get to have,” Drws said. “But I also love the kind of medicine you get to practice.”

In urban settings like Sacramento, Drws explained, it’s easier for primary care physicians to refer patients to specialty care when they encounter a disease they are uncertain about diagnosing. But in Klamath Falls, which is two-and-a-half hours from some specialty care services, family medicine doctors in a sense are the specialists.

“In places like this,” Drws said on a recent afternoon between patient appointments, “you have to practice to the highest level of your license. No matter what kind of doctor you are, you have to become more comfortable with all of the conditions that you see.”

He added: “This is the kind of program that I really liked thinking about when I first considered a career in medicine.”

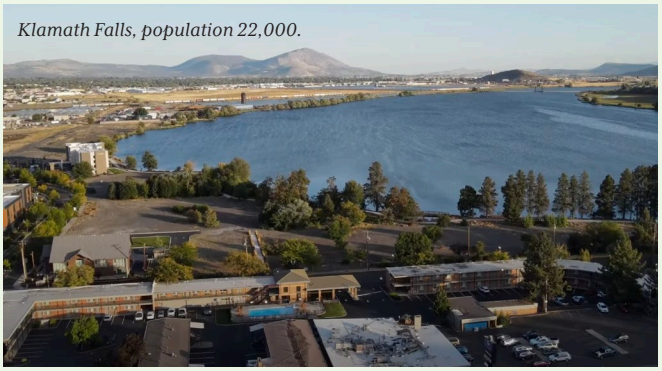
Transforming the physician workforce to meet rural needs

COMPADRE, which stands for California Oregon Medical Partnership to Address Disparities in Rural Education and Health,

started when leaders from the UC Davis and OHSU medical schools joined forces in 2017 to apply for a grant from the American Medical Association to transform access to care between their campuses.

They received $1.8 million and tapped 10 health care systems, 16 hospitals and a network of Federally Qualified Health Centers as training sites for students and newly graduated doctors entering various residency programs. In California, COMPADRE sites are in and around Eureka, Redding, Ukiah, Santa Rosa and Sacramento; Oregon sites are in Portland, Hillsboro, Roseburg and Klamath Falls.

If the schools could boost the number of residents assigned to train in underserved areas, they reasoned, they should be able to increase the number of doctors who practice there.



Klamath Falls, population 22,000.

According to a 2023 report by the Health Resources and Services Administration, 65% of rural areas suffer from a shortage of primary care physicians.

"We certainly know that when a physician trains in a residency program, about 60% of them stay within about 100 miles of that program," said Tonya Fancher, M.D., M.P.H., an internal medicine physician and the UC Davis associate dean for workforce innovation and education quality improvement who helped launch COMPADRE.

"When we look out our door and look across Northern California, we feel it's our responsibility to really work with those communities, health centers and hospitals to create the doctors who will work there," she added.

UC Davis has long been devoted to advancing health in rural and remote communities. In 2007, it started the Rural-PRIME pathway, a medical education track for students who envision a career working in California's out-of-the-way areas.

"We focus on Rural-PRIME because we serve so many rural communities from Northern California and receive those patients here at UC Davis, but those rural communities also need providers there, physicians there, taking care of them as well," said Melody Tran-Reina, M.D., an assistant professor of internal medicine and executive director of the UC Davis Community Health Scholars program, which administers Rural-PRIME.

After COMPADRE created infrastructure for residency training, Rural-PRIME benefitted too: COMPADRE invites third-year medical students, like Drws, to train in the same sites during their clinical rotations.

Treating 'the whole gamut' of health conditions

Drws shuttles from exam room to exam room in the busy health center that overlooks Upper Klamath Lake and the Cascades. Patients come with an array of concerns, and some have delayed care because they live far. They come with diabetes, aches and pains, hypertension, anxiety, reproductive issues. "The whole gamut," Drws likes to say.

As a third-year student he's barely past the midpoint of medical school but has similar responsibilities to some doctors here. He interviews patients, builds rapport, compiles treatment plans and shares them with residents and attending physicians who supervise him. The clinic training, he said, "is very, very autonomous, and very faithful to what practicing medicine is really like."

UC Davis students live rent free, spend four weeks in the outpatient clinic and two at nearby Sky Lakes Medical Center. "It's a really supportive environment for students to learn and get a lot of hands-on experience," said Nellie Wirsing, M.D., who oversees medical student education at Cascades East Family Medicine Center and is Drws's faculty mentor.

Promoting patient care and the local scenery

Communities like Klamath Falls have long struggled to attract doctors who often prefer higher-paying jobs in vibrant and prestigious cities. According to a 2023 report by the Health Resources and Services Administration, 65% of rural areas suffer from a shortage of primary care physicians.

Drws, whose family has been in the Sierra foothills and nearby regions for six generations, can appreciate what it's like to live in a slower-paced world, far from school, work and hospitals.

"Regardless of which specialty I end up in, my wife and I absolutely see ourselves settling down in a small town, someplace rural," he said. "We both like the rural environment, and we both recognize that the opportunities that you give up by leaving a large city are more than made up for by the opportunities that exist out here in these kinds of places."

Medical student receives national award for diversity efforts

Andrés Maldonado is the latest UC Davis recipient of the AAMC Nickens Scholarship

When Andrés Maldonado scrolled through medical school websites, something about UC Davis caught his eye.

He noticed a page titled "Matriculant Demographics." About a third, 34%, were Latino. Nearly a quarter, 72%, came from economically disadvantaged backgrounds. And 43% were the first generation in their family to graduate from college.

Maldonado, who identified with all three categories, applied for admission, got in and quickly immersed himself in meaningful efforts to promote diversity and provide care for people in underserved communities.

He recently received the 2023 Association of American Medical Colleges (AAMC) Herbert W. Nickens Medical Student Scholarship, an impressive national award for outstanding students who show leadership to eliminate inequities in medical education and health care, and who address the educational, societal and health care needs of underrepresented individuals.

Maldonado is one of five recipients from across the country. Some of his many achievements during his first three years of medical school include co-directing the Clínica Tepati student-run clinic and co-founding its mentorship program, co-founding the school's Club de Español Médico, co-leading the school's Latino Medical Student Association (LMSA) chapter, and receiving the 2022 LMSA National Scholarship.

Through the Nickens award, Maldonado also draws more national attention to how the UC Davis School of Medicine — ranked one of the most diverse in the country — recruits and supports students from historically underrepresented backgrounds.

Maldonado, the middle of five children, was born to hard-working Mexican American parents. His father, an ironworker, and his mother, a fast-food employee, settled in the East Bay, and he received a full scholarship to a Catholic high school while spending weekends and vacations helping his father with work.

His high school years were uneasy, emotionally, because he was straddling three separate worlds. One world, hidden from view, was based on his sexual orientation. Maldonado was gay but felt he couldn't tell anyone at the time. He was receiving a free Catholic education and was the son of socially conservative, old-school Mexican parents.

Another world was filled with Advanced Placement classes and high academic standards, anchored by a long-held dream of becoming a doctor.

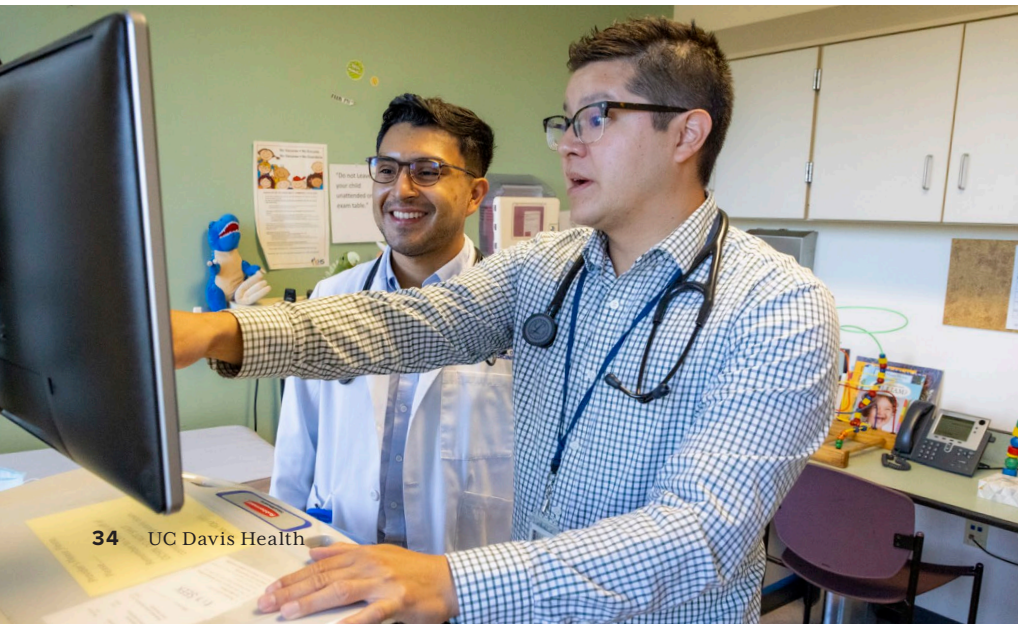
The other world was grounded in day-to-day survival where Maldonado's father took on grueling jobs and his mother worked in fast food until her struggles with epilepsy rendered her disabled.

Still, Maldonado excelled through school and was accepted to Columbia in New York City, with a full scholarship and the majors he wanted to pursue: Hispanic studies and neuroscience, a field inspired by his mother's neurological disorder.

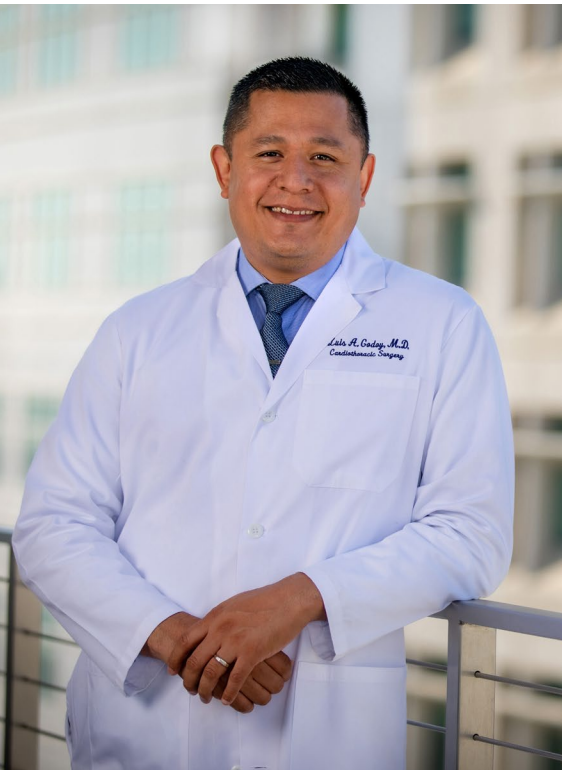
As he settled into Columbia, Maldonado felt isolated when he learned a large share of Latino students came from economic circumstances quite opposite to his own. It wasn't until his senior year that he finally encountered another from a similar upbringing.

After graduating with honors, Maldonado spent a year researching migration and nutrition epidemiology at Columbia. He moved home during the pandemic and was eventually accepted to the UC Davis School of Medicine.

Though Maldonado now lives in Sacramento, he often drives home to take his parents to doctors' appointments and visit his siblings.



UC Davis Health pediatrician Sean Muñoz, pictured right, assigned to the Sacramento County Health Center, trains medical student Andrés Maldondo, recipient of the AAMC Nickens Student Scholarship.



Surgeon recognized nationally for commitment to diversity in medicine

Luis Godoy was awarded the AAMC Herbert W. Nickens Faculty Fellowship for his community service and fighting inequities

In recognition of his outstanding efforts to support students from underserved backgrounds, UC Davis Health thoracic surgeon Luis Armando Godoy, M.D., has been awarded The Association of American Medical Colleges (AAMC) Herbert W. Nickens Faculty Fellowship.

The award recognizes an outstanding faculty member who demonstrates leadership potential in addressing inequity in medical education and health care, shows efforts in addressing educational, societal and health care needs of racial and ethnic minorities in the U.S., and is committed to a career in academic medicine.

Godoy's path to medicine has been filled with adversities. An immigrant from a small Mexican village, he went from a farmworker picking stone fruit alongside his parents to working as an assistant professor at the UC Davis School of Medicine. His experiences along the way, including becoming a father while in high school, helped to shape his desire to fight inequities and promote diversity in medicine.

Godoy is now an assistant professor of thoracic surgery and the diversity and inclusion director in the Department of Surgery, and an affiliate faculty member in the Department of Internal Medicine and the UC Davis Comprehensive Cancer Center.

Godoy believes that diversity in the medical field is a matter of health and well-being. For this reason, he has proudly served as a mentor to undergraduate students, especially first-generation college students — the first to go to college in their families — and those from disadvantaged communities.

"The only way we can provide adequate care to patients of all backgrounds is to educate ourselves on different cultures and health issues, both through training, exposure and education," Godoy said. "We also know that a diverse medical workforce leads to better patient care, outcomes and trainee education."

He was actively involved in the inception and support of Preparando Estudiantes Para Ser Medicos (or Prep Médico), a summer program for pre-medical and medical students that provides scholarships, mentorship, internships, residential programs, volunteer opportunities and hands-on clinical experiences.

In 2021 Godoy also co-founded the nonprofit organization PreMedCC.org, an online community that hosts weekly events for pre-medical students attending California community colleges. These colleges serve about 2.5 million students a year, 76% of whom are ethnic minorities.

Godoy has also worked with the UCLA Center for Community College Partnership, which helps community college transfer students prepare academically, especially those who are first-generation, low-income and from underrepresented communities.

The Nickens Faculty Fellowship includes a $25,000 grant to support a project in the U.S. to support racial and ethnic minorities. Godoy plans to implement a comprehensive program that he hopes will strengthen the pipeline of medical students from underrepresented communities, by giving students and trainees more exposure to the surgical field and by promoting a climate of inclusion for current surgical residents by incorporating discussions about surgical practice, health care disparities and social justice into training.

Alumni Association updates

Join us for Alumni Weekend — and keep in touch!

Doug Gross (M.D. '90)
President
UC Davis School of Medicine
Alumni Association

Lisa Dicce
Director of Alumni Engagement
279-386-6317 mobile
ladicce@ucdavis.edu

We hope the stories and photos in this magazine bring back fond memories and make you proud to be an alum. We are grateful to have you in our community and want to share ways you can stay engaged.

Alumni Weekend will be held September 27–29, 2024 on the Sacramento Health campus. All School of Medicine alumni, including M.D., residency, and fellowship graduates, are welcome. There will also be special reunion celebrations for alums with class years ending in "4" and "9." We hope you will join us to reminisce and reconnect with your peers. During the weekend, you'll also have a chance to hear from health leaders, toast exceptional alumni awardees, and mingle with students. Be on the lookout for formal invitations soon!

We also host smaller events specifically for School of Medicine alumni. You should be receiving a monthly newsletter with news and event information. If you are not, please reach out to share your contact information. We want to make sure you're always in the loop.

The alumni association is proud to support student success. We are always looking for alumni who want to mentor students or speak to small groups about their career paths. If you'd like to help current students, please contact us.

We are glad to have you in the UC Davis School of Medicine Alumni Association and want to hear from you. Please reach out with your feedback and updates or just to say hello! You can contact us via the SOMAA website, email (**medalumni@ucdavis.edu**), or phone (**916-734-9410**).

Thank you for being an important member of our community. We hope to hear from you soon!

UC Davis School of Medicine Alumni Updates

1972

Randall Stenson

This past year we moved to Regency, a 55+ very active, friendly community in Folsom. This is close to our two sons' families and our four grandchildren, now ages 14–19, with the oldest a freshman at UCLA. We continue to treat about 1,200 opioid-addicted patients at CORE and my daughter-in-law, Kristi Bell, M.D., has assumed my Medical Director role. I remain the owner but with much less responsibility. Enjoy golf, pickleball, and good health (knock on wood!). Mary Ann is doing well, and we celebrated our 55th anniversary this past year. We were sad to hear of Polly Langsley passing, age 96, who always sent us a warm, newsy Christmas letter. We've been able to communicate with Don and Polly's daughters, who we babysat during our medical school years.

1979

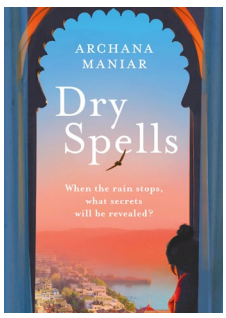
Paul Richard Beninger

In 2023, the National Academies appointed Dr. Beninger to serve as a member of the Committee on Developing a Framework to Address Legal, Ethical, Regulatory, and Policy Issues for Research Specific to Pregnant and Lactating Persons. The formal charge to the committee is to conduct a study on the state of real and perceived liability around research conducted in pregnant and lactating persons, and develop a framework for addressing medicolegal and liability issues when planning or conducting research specific to pregnant and lactating persons. Based on its review of the information and other expert and public input, the committee will develop a report with its findings, conclusions, and recommendations for safely and ethically including pregnant and lactating persons in clinical research that substantially mitigates or avoids incurring liability (absent negligence or malfeasance). Dr. Beninger was also promoted to full professor at Tufts University School of Medicine on Sept. 1.

2000

Archana Maniar

I am a UC Davis alum starting with medical school, through residency, and through fellowship, and currently a professor of medicine in the Division of Infectious Diseases at UC Davis Health. I have also been an aspiring novelist and after years of dabbling, revision, rejection and persistence, my first novel Dry Spells was published internationally by Lake Union Publishing in May of 2024, with a second novel to follow!



Emeritus faculty

David Siegel

Dr. Siegel, emeritus professor and former vice chair of internal medicine at UC Davis School of Medicine, was awarded the 2023 Lifetime Achievement Award last May at the Albert Einstein College of Medicine Commencement Ceremony at Lincoln Center in New York. The award recognizes Einstein alumni who have attained distinction in their medical fields and made major contributions to the health and welfare of underserved communities. Dr. Siegel also served as chief of medicine at the VA Northern California Health Care System and a professor at UCSF, where he received the NIH Preventive Cardiology Academic Award. In the 1980s, he was a visiting medical professor in Nicaragua and investigated Geneva Convention violations of medical neutrality during armed conflict. He also worked for the World Health Organization's Global Program on AIDS in Tanzania and developed an AIDS-prevention program for Oakland public schools.

Editor's note: Information shared in class notes is submitted by individual alumni and reflects their personal views, not those of UC Davis or alumni organizations. Questions or comments about individual class notes should be brought up directly with the note's author through publicly available channels.

In memoriam

PETER JOHN LYNCH, M.D., the former chair of UC Davis' Department of Dermatology and a highly respected dermatologist whose life's work touched countless individuals, passed away in February 2024 at age 87.

Born in 1936, in Minneapolis, Minnesota, Lynch earned his medical degree from the University of Minnesota and completed his residency in dermatology at the University of Michigan. He met his wife, Barbara Ann Lanzi, during his last year of residency. Peter and Barbara married on January 18, 1964. That summer Peter was drafted, and the young couple moved to Fort Benning, Georgia.

In 1968, after completing his time in the Army, Peter and Barbara moved to St. Paul, Minnesota, where Peter worked in his father's dermatology practice. Peter and Barbara then moved to Ann Arbor, Michigan, where Peter joined the University of Michigan dermatology department.

In 1973 Peter was recruited to the University of Arizona to develop the dermatology department. Peter adapted easily to his new western lifestyle. He wore cowboy boots every day to work and attempted to learn Spanish no less than 50 times. The move to the University of Arizona was the start of his academic career in which he thrived, launching him to chair the Department of Dermatology at both the University of Minnesota and UC Davis. He found his love in teaching medical students and mentoring residents.

Peter's research contributions were vast and influential, garnering recognition both nationally and internationally and contributing significantly to the field of dermatology. His work included numerous published articles and textbooks. In 2013 Peter was awarded the American Academy of Dermatology Pearson Memorial Education Award and was given honorary membership to the American Academy of Dermatology. Fewer than 50 of the 13,000 American dermatologists have been awarded this honor.

Peter is survived by wife Barbara Ann Lynch, daughter Deborah Riddell, son-in-law Ian Riddell, son Timothy Lynch and daughter-in-law Caroline Lynch, grandchildren, Elise and Lawson Riddell and Katherine, Matthew, Sophia, Olivia and Elizabeth Lynch, and his sister Mary Hanranhan. He is preceded in death by his brother Tom Lynch.

The family will hold a private burial and this summer, we will join together to celebrate Peter. In lieu of flowers, the family wishes that contributions be made to the Bass Lynch Endowment Fund. The check can be made payable to the UC Davis Foundation, check memo line 114858, and mailed to the UC Davis Foundation at P.O. Box 160186, Sacramento, CA 95816.

Excerpted from content provided by family

‘A brilliant medical innovator and a generous servant leader’

The Cal Aggie Alumni Association honors Sandra Reed (M.D., ‘85), a tireless UC Davis School of Medicine and UC Davis supporter, with its Lifetime Achievement Award

In March the Cal Aggie Alumni Association (CAAA) announced the recipients of its 2024 Alumni Awards, an annual program that recognizes remarkable impacts made by alumni and friends of the university. The association, which serves more than 314,000 UC Davis graduates, has honored Sandra Reed, M.D., ’85, with its Lifetime Achievement Award.

This year’s winners are leaders in technology, health care, civil advocacy and higher education. All have dedicated their time and resources to create life-changing opportunities for students at UC Davis and around the world.

Friends and colleagues describe Reed as a brilliant innovator in the medical field and one of the most generous servant leaders to UC Davis and beyond, the CAAA noted in its announcement. Reed retired as a Navy medical doctor, and had previously served as an officer in the Marine Corps — a rarity for the branch of the military where even four decades later, women would make up just 10% of officers.

Between those two stints in the military, she earned her M.D. at UC Davis in 1985. She then completed a residency in internal medicine at Kern Medical Center in Bakersfield and later began a fellowship at the VA in Martinez. She left the fellowship to serve in the Navy, where she completed her training in pulmonary and critical care medicine. During her career as a Navy physician, she worked at military bases and medical centers throughout North Carolina, Virginia, Maryland and Washington, D.C.

Helping students achieve their dreams has always been a priority for Reed, which is why she has supported the UC Davis School of Medicine with the Sandra L. Reed, M.D. Award, which provides scholarships to veterans who are at the top of their class. She is also a passionate supporter of the Aggie Compass Basic Needs Center, and gives regularly to the School of Veterinary Medicine “in gratitude for the four-legged companions who have enriched my life.”

Today Reed resides in Michigan, but still finds time to serve in volunteer leadership roles across the university. She chairs the UC Davis Health Campaign Board and is a member of the university’s Global Campaign Leadership Council. Reed also devotes her time as a trustee for the UC Davis Foundation. She previously served on the board of directors for the UC Davis School of Medicine Alumni Association.

The 51st Alumni Awards gala was scheduled for Thursday, May 2.

“This year’s honorees are shining examples of how people can find their greatest fulfillment when they pursue their passions,” said Dana Allen, assistant vice chancellor and executive director of CAAA. “Their collective impacts have greatly served our campus, state, country and the world. We are excited to honor them and thank them for their roles in growing our abundant Aggie Pride.”

White Coat Week: How physicians mentored high schoolers over spring break

Sierra Sacramento Valley Medical Society program aims to help diversify the health care workforce

Ten local high school students shadowed 18 physicians in March as part of UC Davis Health's second annual White Coat Week program. The program was started by the Sierra Sacramento Valley Medical Society to help diversify the health care workforce with doctors from backgrounds underrepresented in medicine.

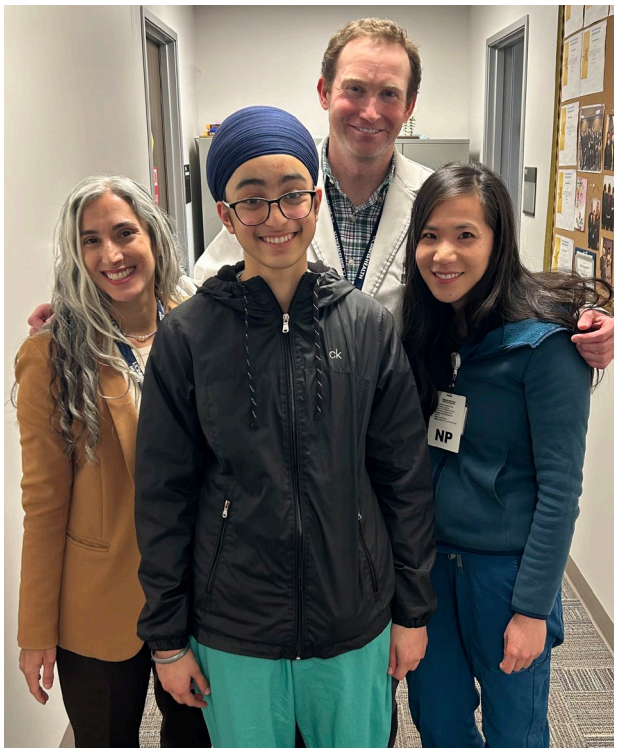
This year's students dedicated four days each out of their respective spring breaks. They learned one-on-one from physicians across a variety of specialties and clinic locations, from Rocklin to the MIND Institute and many more. Participating physician specialty areas included ENT, GI, radiology, vascular neurosurgery, genetics, integrative medicine, hematology/oncology, internal medicine/transplant, and pediatric neurosurgery.

"We hope that early exposure to medicine empowers students to consider a wider range of career paths and to aim high when it comes to educational and career goals."

– JULIA SHARMA,
CHIEF OF PEDIATRIC EPILEPSY

The students appreciated acquiring new skills, like how to read MRI scans and X-rays. One 15-year-old student from Sheldon High School said it started to make sense when Cyrus Bateni, M.D., compared radiology analysis to the classic "spot the difference" games. "I am having fun!" she said.

It seemed surprises were around every corner. Students got to see a chemo port up close, and learned why ports are less invasive than needle pricks.



Student Nehchal Kaur shadowed members of the Department of Neurological Surgery.

"My favorite part was visiting Dr. Prathima Prodduturi and being able to visibly see how chemotherapy works," said another Sheldon High student, also 15. "I loved the last day so much because she showed me around and educated me on so many different things the whole time."

Several participants wrote thank you notes following their shadowing experiences.

"I cannot thank you enough for giving me this opportunity! I truly respect doctors and those in the medical field because they dedicate their whole life to changing someone else's life," wrote Pleasant Grove High School student Nehchal Kaur, who learned how colonoscopies are done, what to do when there is excess cerebral fluid in the brain, and especially loved meeting the babies in pediatric neurosurgery.

"It is a great opportunity to provide students with insight into specialties like neurosurgery that are often seen as being out of reach for many students," said Chief of Pediatric Epilepsy Julia Sharma. "We hope that early exposure to medicine empowers students to consider a wider range of career paths and to aim high when it comes to educational and career goals."

Stephen Cavanagh, Ph.D., R.N., F.A.A.N.

An update from Stephen Cavanagh, dean of the Betty Irene Moore School of Nursing at UC Davis

We make the difference

"We can change the world and make it a better place. It is in our hands to make a difference."

Those words from Nelson Mandela echo the theme for Nurses Week 2024: "You Make the Difference." The sentiment profoundly resonates with the ethos of the Betty Irene Moore School of Nursing at UC Davis. It serves as a poignant reminder of the transformative power embedded within each of you — the power to heal, to comfort and to inspire hope. Your tireless dedication to advancing health care, promoting wellness and advocating for those in need exemplifies the very best of our profession.

We create new evidence-based approaches to support family caregivers, driving new solutions and improving access to care. From leading a UC multicampus program to prepare psychiatric mental health nurse practitioners to developing the UC's first Doctor of Nursing Practice – Nurse Anesthesia program, our educational approach tackles challenges head on and leans into our partnerships.

Each year we graduate roughly four dozen master's-prepared students poised to take the national nursing licensing exam and become change agents at the bedside. In 2025, the inaugural cohort of our Doctor of Nursing Practice — Family Nurse Practitioner Degree Program will complete a three-year program and fulfill vital provider and advocacy roles in California's rural and urban communities. They, along with our physician assistant and Doctor of Philosophy alumni, help make a profound difference in health outcomes and quality of life for countless individuals.

History has shown us time and again that seemingly insurmountable obstacles can be overcome through collective action, determination and acts of kindness.

In our world today, we are confronted with an array of formidable challenges, from climate change to social inequality, from mental health crises to health care disparities. It's easy to feel overwhelmed by the enormity of these issues. However, history has shown us time and again that seemingly insurmountable obstacles can be overcome through collective action, determination and acts of kindness.

At the School of Nursing, we are uniquely positioned to effect positive change. We develop innovative educational approaches to meet the evolving needs of tomorrow's care.

To our esteemed alumni, your accomplishments stand as a testament to the exceptional education and training you received at our institution. Your continued contributions inspire us all, serving as guiding beacons.

To our dedicated students, you are the future of health care, imbued with the knowledge, skills and compassion to effect change. Your passion for learning and commitment to excellence fill me with optimism for the future of our profession.

To our valued faculty and staff, your unwavering support and dedication behind the scenes are the backbone of our school. Your tireless efforts ensure that our programs continue to thrive, preparing the next generation of leaders to meet the challenges of tomorrow.

To our trusted partners across UC Davis Health and our communities, your collaboration and shared vision are instrumental in shaping the future of health care education. Together, we strive to create innovative solutions and foster environments where all members of the care team can flourish and make a meaningful difference.

Each of us has the capacity to contribute, whether through advocating for better policies, addressing disparities in access to care, or simply showing compassion to those in need. Just as our predecessors paved the way for progress, so too can we make a difference in the lives of others.

Each year, we celebrate Nurses Week from May 6–12. This year, we took a moment to reflect on the profound impact of our collective efforts. Our compassion, expertise and unwavering commitment to excellence truly make the world — and UC Davis Health — a better place.

Gordon and Betty Irene Moore

‘She called us to drive real change’

Remembering UC Davis nursing school co-founder Betty Irene Moore

Betty Irene Moore, the namesake and co-founder of the Betty Irene Moore School of Nursing at UC Davis, died peacefully last December at the age of 95. She is remembered as an advocate for patients and families, a champion of nursing and a pioneer for improving health care, and credited for founding a school to transform health care.

Moore’s husband of 72 years, Gordon, passed away last March. Together, they co-founded the Gordon and Betty Moore Foundation, which committed $100 million in 2007 to launch the nursing school at UC Davis. Through her vision, the foundation led a movement to equip and empower nurses to improve patient care. This was based on Moore’s personal experiences when in the hospital and in caring for others who had been hospitalized. She saw how nurses play a critical role in the delivery of safe, quality care and set out to improve it by investing in the very people who deliver 95% of the care people receive.

In a foundation release, leaders recalled her passion for improving the human condition, support of her husband during his graduate school years and her legacy that “best be remembered for her contributions to improving patient care.”

The foundation chose UC Davis based on their shared vision to face the nation’s health care problems by integrating the best of care and scientific practices with multiple disciplines in higher education for nurses. At the time of launch, it was the largest philanthropic grant to UC Davis, one of the largest in the history of the UC, and the largest philanthropic gift in the nation in support of nursing education.

“We are grateful that Betty Irene Moore chose UC Davis Health as the place to realize her vision of nurses as leaders in delivering better and safer care to patients and their families,” said UC Davis Health CEO David Lubarsky,

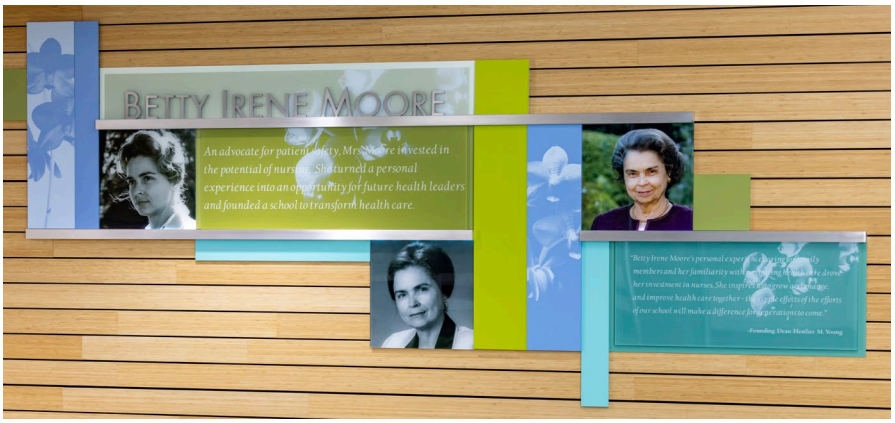
M.D., M.B.A., F.A.S.A. "By founding the School of Nursing, she planted the seeds of change here in Sacramento that are now spreading everywhere across the nation — elevating the practice of nursing across the entire profession. Every graduate of the school leaves with the knowledge and desire to be an agent of change for the better."

Moore's advocacy for patient safety, quality nursing care and education ignited a movement around these issues. It served as the impetus behind the San Francisco-based Foundation's Betty Irene Moore Nursing Initiative. It is further amplified by the school's approach to education, where nurses and other professionals are prepared to lead changes.

"I think about Betty Irene Moore every day. Her call to us to make health care better, make it safer, make it better quality, remember me the patient and my family. That call is something that resonates with each and every one of us," said Heather M. Young, Ph.D., R.N., F.A.A.N., the school's founding dean. "I'm proud to be one of the now over a thousand members of Betty's Army. She called us to drive real change. Her vision and the foundation's commitment to and belief in us inspired nurses from across settings and populations to pursue graduate education so they could advance health and improve systems of care to be more equitable and of higher quality and value."

Betty Irene Moore Hall

The school's momentum led to 2017's opening of the Betty Irene Moore Hall, a state-of-the-science facility that heralded a second phase of growth. Gordon Moore represented his wife at the building's groundbreaking in 2015. Her sons, Ken and Steve Moore, along with their wives, Kristen and Kathleen Justice-Moore, represented Moore at the grand opening.



A tribute wall in Moore Hall reads: An advocate for patient safety, Mrs. Moore invested in the potential of nursing. She turned a personal experience into an opportunity for future health leaders and founded a school to transform health care.

"I asked mom what she would want me to convey to this audience since she couldn't be there. And she said, let them know how delighted I am that the Betty Irene Moore Hall is open and that I'm still around to see it," joked Ken Moore, who along with Justice-Moore engaged with the school and architectural teams to design the special learning environment and supported the effort through the generosity of the Moore Family Foundation.

"The building is the result of the work of hundreds of people with countless ideas shared during many gatherings as my predecessors sought input into what a new health sciences education building needed to be," explained Stephen J. Cavanagh, Ph.D., R.N., F.A.A.N., School of Nursing dean. "I arrived in 2019 focused on both advancing our mission and leading the school into its next growth phase. True to Mrs. Moore's vision, we continue to innovate in the degree programs we offer. Each is designed to serve the public need and advance our goal of optimal health and health equity for all."

A caregiver who invested in caregiving

As someone who cared for members of her family during illnesses, Moore also recognized the important role of caregivers. In 2017, the Gordon and Betty Moore Foundation granted an additional $5 million to create the Family Caregiving Institute at the Betty Irene Moore School of Nursing at UC Davis.

It works to expand the abilities and knowledge of family caregivers, and also improve the capacity of health professionals to partner more effectively with them.

"Mrs. Moore knew firsthand the joys and burdens that caring for family members can bring," said institute Director Janice F. Bell, Ph.D., M.P.H., M.N., F.A.A.N. "We are grateful to the foundation's investment in the institute, where our research and education initiatives focus on supporting family caregivers engaged in complex care in the home."

Fellowship promotes leadership, innovation

Betty Irene Moore's passion to advance nursing spawned another initiative, which also combines Gordon Moore's legacy of innovation. A $37.5 million grant established the Betty Irene Moore Fellowship for Nurse Leaders and Innovators in 2019, to prepare early-to-mid-career nurses as collaborative leaders to enact change. To date, 48 fellows have embarked on the three-year journey, including the 16 members of the largest cohort to date thanks to an additional $7.4 million grant last year.

Family caregivers share a common job, but diverse experiences

More than 6 million caregivers in California know the challenges that come with caring for a family member or friend over the age of 18. Research from the Family Caregiving Institute at the Betty Irene Moore School of Nursing at UC Davis sheds new light on those providing care.

In the fourth year of the "Picking Up the Pace of Change: Scaling Services for a Changing Caregiver Profile" project, funded by the California Department of Health Care Services and the California Department of Aging, evaluators examined data for more than 5,000 clients of the California Caregiver Resource Centers (CCRCs). Eleven community-based nonprofits, like the Sacramento region's Del Oro Caregiver Resource Center, make up the statewide network.

"We explored beyond the typical sociodemographic factors such as age, gender, sexual orientation and financial resources. When examining a caregiver's cultural background, race, ethnicity, religious affiliation and rurality, we discovered they carry different expectations for caregiving in the family and how they work with each other," said co-principal investigator Heather M. Young, Ph.D., R.N., F.A.A.N., School of Nursing professor and dean emerita. "All of these aspects of diversity really mean that there's no one-size-fits-all strategy to support caregivers."

A UC Davis-led study shows there is no one-size-fits-all strategy to support the 53 million people who fill this valuable role.

Compared to caregivers in other surveys, CCRC caregivers tended to be older (about 40% were over 65) and more diverse. Slightly fewer than half reported their race and ethnicity as other than white and non-Hispanic.

Among the clients surveyed, most are females 45–84 years old with partners, provide care for someone with Alzheimer's disease or dementia, spend more than 40 hours per week providing care, and receive no paid help.

"We determined that as caregivers get older, the intensity of the care they provide increases. Furthermore, the highest intensity of care was among those who identified in racial and ethnic groups other than white and non-Hispanic and those with income below the federal poverty level," noted co-principal investigator Janice F. Bell, Ph.D., M.P.H., M.N., F.A.A.N., associate dean for research and Western Health Advantage Endowed Professor. "Surveys with random samples do not fully capture the experiences of caregivers like those served by the CCRCs who are engaged in intense and complex care."

To expand and improve services, CCRCs deployed a CareNav portal that allows clients to securely share messages with a care consultant, who provides tailored education and resources to meet specific needs. The system collects valuable data on individuals using CCRC services.

In 2023, the CCRCs served more than 900,000 caregivers and engaged 28,000 participants in educational offerings. More than 19,000 clients have participated in surveys and while their burden is immense, there are bright spots. When caregivers use CCRC services, their strain, loneliness and symptoms of depression improve. Public outreach has also increased, and educational programs offered by CCRC nearly doubled.

Based on the data gleaned from this report, The California Department of Aging has asked the UC Davis team to develop a statewide equity plan for caregivers and to identify gaps in services and support for caregivers along several dimensions of diversity.

Betty Irene Moore School of Nursing Alumni Updates

NURSING AND MED SCHOOLS RECEIVE NATIONAL DIVERSITY AWARD FOR SECOND TIME

The Betty Irene Moore School of Nursing at UC Davis and the UC Davis School of Medicine were again named among the nation's top institutions in higher education for their commitment to diversity and inclusion last fall. In October, the magazine *INSIGHT Into Diversity* announced the schools are among 62 institutions of higher education to receive the 2023 Health Professions Higher Education Excellence in Diversity (HEED) Award. Each school has earned the honor for two years. Multiple initiatives were highlighted in the award applications, such as holistic admissions processes and robust pathway and student support programs. The School of Medicine has repeatedly ranked as one of the nation's most diverse medical schools, and the School of Nursing's students exceed national diversity rates by nearly 50%. *INSIGHT Into Diversity* is one of the oldest publications dedicated to diversity, equity and inclusion in higher education.

NURSING DEAN RE-ELECTED TO NATIONAL NURSING BOARD

Stephen Cavanagh, Ph.D., R.N., F.A.A.N., dean for the Betty Irene Moore School of Nursing at UC Davis, has been selected to serve a second term on the board of directors for the American Association of Colleges of Nursing (AACN). Learn more in the In Brief section on p. 6–7.

TEAM TRAVELS TO KENYA TO IMPROVE CHRONIC DISEASE MANAGEMENT

A multidisciplinary group of clinicians and health care providers from UC Davis Health traveled to Kenya last year to support, train and elevate the efforts of local providers to manage chronic diseases. The pilot project was partially supported by a Sustainable Development Goal grant from UC Davis Global Affairs. Kenya has made great strides in controlling AIDS and other infectious diseases, but now Kenyans are living longer and chronic diseases such as diabetes, heart disease and cancer are on the rise. In Kenya, the UC Davis group collaborated with a local humanitarian organization to conduct medical camps providing medical assessments, and also provided training through a table-top simulation to faculty and students from the University of Nairobi School of Nursing and Medicine to model multidisciplinary teamwork. Trip participants included Margaret Junker, registered dietician and diabetes care and education specialist at the UC Davis Health Cardiology Clinic; Stephen J. Cavanagh, dean of the Betty Irene Moore School of Nursing at UC Davis; Laura L. Van Auker, associate clinical professor at the School of Nursing; and Sandra Kamba, a family nurse practitioner resident.

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Building the future of UC Davis Health

UC Davis Health and UC Davis are building new state-of-the-art facilities as part of Vision 2023, remodeling existing spaces and expanding into neighborhoods throughout the region to deliver advanced health care. Some highlights:

On the Sacramento campus of UC Davis:

California Tower
14-story hospital tower and five-story pavilion

48X Complex
Major ambulatory surgery center

Aggie Square
UC Davis mixed-use innovation district

Around the region:

Folsom Center for Health
Medical office building opening fall 2025

Elk Grove
Land purchase to expand clinics

Learn more: **health.ucdavis.edu/facilities**