

SYNTHESIS



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Dear Reader,



This issue of *Synthesis* reaches you at an incredibly exciting time. Once again, UC Davis Comprehensive Cancer Center was recognized by the National Cancer Institute (NCI) as one of the nation's most elite cancer centers. We were pleased to have been awarded a \$17.5 million Cancer Center Support Grant renewal. Simultaneously, our "comprehensive cancer center" designation was also renewed, reflecting our center's breadth and depth in research, clinical care, cancer control and population sciences.

UC Davis Comprehensive Cancer Center is one of only 51 NCI-designated comprehensive cancer centers in the country and the only one outside San Francisco, serving the Bay Area north to Portland and communities east to Salt Lake City. We serve an expansive and highly diverse catchment area. Therefore, we have developed impactful programs tailored to the unique needs of our population, giving special attention to the underserved who, for too long, have carried an inordinate share of the cancer burden.

In this issue, you will learn about a new research study to reduce cancer disparities through EXPLORER, the world's first total-body PET scanner. Study volunteers are "paying it forward" by contributing to a critical database that will help others fighting cancer from the same race and ancestral background.

We are particularly proud of our researchers, scientists, and clinicians who have worked in the spirit of collaboration and team science to jointly develop and translate scientific knowledge from the laboratory to the clinic and into the community in a bidirectional manner.

We describe our high-impact clinical trials that remain open despite the pandemic. We also report on stem cell transplants now available on an outpatient basis as well as new surgical and non-surgical treatments for esophageal cancer patients and learn about a high-definition linear accelerator that targets tumors quickly and our new tool that lights up tumors, so they can be removed with high-tech precision.

More than 100,000 patient encounters occur at the cancer center each year. We work on providing the most personalized and advanced care to each individual. In this issue, we highlight how our state-of-the-art services in supportive oncology are evolving to meet the mental and physical needs of cancer patients. You will read about how you can partner with us to grow these services to include on-site pain management therapies, including acupuncture and physical therapy, as well as psycho-social resources to support those battling cancer in their recovery and survivorship.

We also highlight the innovative technology revolutionizing the way we diagnose and treat cancer with precision approaches. There is no longer a "one size fits all" approach in cancer care. You will see how we have taken an individualized approach to addressing the cancer problem: one patient at a time.

I hope you will be inspired by stories of courage exhibited by our cancer patients, some of whom are doctors who decided to pursue their cancer care here at UC Davis Comprehensive Cancer Center. They are among the many patients we saw this year who didn't let COVID-19 prevent them from getting the cancer care they needed.

Thank you for celebrating our NCI re-designation with us. We look to your continued support of our efforts to bring the best of world class cancer research, clinical care, education, and community outreach to the communities we have pledged to serve.

Primo "Lucky" Lara Jr., M.D.

DIRECTOR, UC DAVIS COMPREHENSIVE CANCER CENTER

BREAKING BARRIERS TO BEAT CANCERSM

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50 years of the National Cancer Act

The 50th anniversary of the National Cancer Act is being marked during a historic pandemic — but the focus on COVID-19 in no way diminishes the significance or importance of this milestone as a reminder of how far we have come in the cancer fight and how far we have yet to go.

Signed into law in 1971 by President Richard Nixon, the National Cancer Act established a nationwide commitment to creating a network of cancer centers, such as the UC Davis Comprehensive Cancer Center, as well as clinical trials, data collection systems and advanced research.

The federal legislation gave birth to a chain of events that launched innovative cancer research and a staunch vow to someday end cancer through a collective work of

researchers, doctors, nurses, and, of course, brave patients.

Its successes include breakthroughs such as harnessing the immune system against cancer and developing evidence-based programs to dramatically reduce smoking.

As the National Cancer Institute (NCI) enters the 50th anniversary year of this landmark legislation, it is taking the opportunity to commemorate those who have paved the path of progress. Throughout 2021, NCI is sharing some of these stories of progress

(cancer.gov/news-events/nca50/stories).

The UC Davis Comprehensive Cancer Center celebrates this important anniversary and continues to work in collaboration with the NCI as we progress toward a world without cancer — perhaps in the next 50 years.



UC Davis Comprehensive Cancer Center to help improve national cancer guidelines

UC Davis Comprehensive Cancer Center has been selected to be a member institution of the National Comprehensive Cancer Network® (NCCN®). UC Davis joins 30 other leading academic cancer centers across the United States that work together to facilitate high-quality, effective, efficient and accessible cancer care to improve the lives of patients.

“We are very happy to welcome UC Davis into our network of highly respected institutions devoted to improving outcomes for people with cancer through transparent, evidence-based, expert recommendations and education,” said Robert W. Carlson, NCCN chief executive officer. “UC Davis leverages strengths in innovative cancer care models and technologies, precision therapeutics, transformative imaging, and mitigation of cancer risks and disparities to reduce the cancer burden in its region and beyond. The physicians, scientists and public health experts at the UC Davis Comprehensive Cancer Center share NCCN’s commitment for making cancer discoveries and delivering them quickly to patients.”

As part of NCCN, the cancer center will now appoint subject matter experts to join more than 1,600 multidisciplinary members across 60 panels responsible for guidelines related to more than 80 clinical practice areas covering most types of cancer, as well as prevention and supportive care. The clinical recommendations are also available in non-medical terms through the library of NCCN Guidelines for Patients® to empower people with cancer and their caregivers to better understand their management and participate in shared decision-making.

“We are extremely pleased to become a member of NCCN, collaborating with many of the nation’s leading cancer centers in enhancing and facilitating exceptional cancer care,” said medical oncologist Primo “Lucky” Lara Jr., director of the UC Davis Comprehensive Cancer Center. “It is truly an honor to be part of such an impactful alliance.”

NCCN was founded in 1995 with 13 member institutions. Learn more about the organization’s growth since then at nccn.org/annualreport.



New medical director named to lead clinical cancer research

In July 2021, the UC Davis Comprehensive Cancer Center named Edward Kim as the new medical director for the Office of Clinical Research (OCR).



Edward Kim
(photo taken prior to COVID-19 social distancing and masking guidelines)

Kim is a UC Davis Health medical oncologist and associate professor of internal medicine who specializes in treating gastrointestinal malignancies including pancreatic, liver, bile duct, esophageal, stomach, and colorectal cancer. He has conducted extensive clinical trials and was a recipient of the National Cancer Institute Cancer Clinical Team Leadership Award in 2015.

Kim reports to Karen Kelly, associate director for clinical research, who previously held the post of OCR medical director.

“As our new medical director of the Office of Clinical Research, Dr. Kim will lead the cancer center into the next era of oncology research, ensuring our innovative clinical investigations will meet

federal, state and local requirements while promoting a collaborative research culture,” UC Davis Comprehensive Cancer Center Director Primo “Lucky” Lara Jr., said.

Kim has a particular interest in novel treatments for pancreatic cancer and previously served as chair of the UC Davis Pancreatic Cancer Research Incubator as well as chair of the Data and Safety Monitoring Committee (DSMC) which provides impartial oversight of investigator-initiated cancer trials.

“As our new medical director of the Office of Clinical Research, Dr. Kim will lead the cancer center into the next era of oncology research, ensuring our innovative clinical investigations will meet federal, state and local requirements while promoting a collaborative research culture.”

—PRIMO “LUCKY” LARA JR., UC DAVIS COMPREHENSIVE CANCER CENTER DIRECTOR



Cancer center clinical trials carry on despite the pandemic

Phase I, II and III clinical trials

- The U.S. Food and Drug Administration classifies clinical trials according to a sequence of research phases.
- Phase I trials are intended to determine effective dosage amounts and to evaluate a drug's safety. Phase I trials often mark the first time a drug or drug combination is given to human subjects after completion of laboratory research. A Phase I trial may enlist as many as 20–100 participants, who are monitored very closely and frequently for side effects.
- Phase II trials evaluate a new drug or procedure under investigation to determine its effectiveness in fighting a specified type of cancer.
- Phase III trials test a new investigatory drug, a new combination of drugs or a new procedure in comparison with the best standard therapy. The intention of a Phase III trial may be to evaluate variations in the effectiveness of a drug among different populations, with varying dosages or in combination with other drugs. Phase III trials typically involve large numbers of patients, usually hundreds or thousands. A patient in a Phase III trial is randomly assigned to receive either the new treatment, or the best existing treatment, or a placebo that contains no active ingredients.

Although clinical trials are intended to validate the safety and efficacy of developmental drugs for population groups at large, they often constitute the best — or perhaps only — life-extending or lifesaving therapy option for many clinical trial participants.

The cancer center maintained momentum by building enrollment in clinical trials already underway as well as starting new trials.

As an academic center for cancer research as well as cancer treatment, the UC Davis Comprehensive Cancer Center has a long-established clinical trials program to investigate new cancer therapies. Although the COVID-19 pandemic proved to be one of the biggest medical challenges of our time, the cancer center's vital work, including clinical trials, has continued.

"Conducting clinical trials is the only way we will cure cancer," stated Karen Kelly, the associate director of clinical research. "There are many great ideas out there — about promising therapies, tools to prevent cancer, how to help survivors — but all of these require clinical trial testing."

As government agencies mandated closure of business activities deemed "non-essential," the essential research of the cancer center proceeded with protocols put in place to protect the safety of study participants and health workers. The cancer center maintained momentum by building enrollment in clinical trials already underway as well as starting new trials.

The clinical trials program includes more than 200 clinical trials as well as the novel Sacramento Citywide Oncology Phase I program (SCOPE), an academic-community partnership that encompasses the major hospital systems in the Sacramento region (see the accompanying article for more information).

The cancer center continues to conduct a broad spectrum of Phase I, Phase II and Phase III trials to test

The SCOPE project enables Phase I collaboration

Although many institutions conduct Phase II and III clinical trials, the UC Davis Comprehensive Cancer Center is the only institution in the Sacramento region with the infrastructure required to conduct Phase I clinical trials. The Sacramento Citywide Oncology Phase I program (SCOPE), established in 2015, is the community outreach component of the Phase I program that creates collaboration with physicians from Dignity Health, Kaiser Permanente, Sierra Hematology Oncology and Sutter Health to enroll patients in Phase I clinical trials.

Phase I clinical trials provide an additional treatment option for patients who have failed standard cancer therapies. At any given time, 50 or more Phase I clinical trials are underway at the UC Davis Comprehensive Cancer Center.

Patients are encouraged to ask their physician about their eligibility for UC Davis Comprehensive Cancer Center clinical trials appropriate for their type of cancer.

the safety and efficacy of newly developed drugs. Research teams changed several clinical trials procedures to ensure patient and staff safety during the pandemic.

"Researchers increased use of telemedicine as a means to maintain close monitoring of clinical trial participants while remaining compliant all the while with federal, state and local COVID-19 safety guidelines," explained Edward Kim, the new medical director of the cancer center's Office of Clinical Research.

LEARN MORE ABOUT PARTICIPATION IN CANCER CLINICAL TRIALS

- Visit health.ucdavis.edu/cancer/clinical-trials
- For adult cancer clinical trials call **916-734-0565**
- For pediatric cancer clinical trials call **916-734-2780**
- For Phase I clinical trials, call **916-703-5233**

New theranostics clinic is transforming advanced cancer treatment

Conventional treatments for cancer, such as chemotherapy, external beam radiation and surgery, don't always work, but hope is on the horizon for some patients with certain cancers.



Elizabeth Morris and Cameron Foster

UC Davis Health is leveraging the next generation in nuclear medicine treatments to attack cancers in ways that traditional options cannot by themselves. The new approach, called “theranostics,” is revolutionizing cancer care by combining both diagnostics and therapeutics in delivering targeted radiotherapy. UC Davis Health is planning a new clinic dedicated to the innovative treatment.

Typically injected into the patient's bloodstream, the therapy radiopharmaceuticals travel and deliver radiation directly to a tumor site, destroying cancerous cells while leaving healthy tissue alone.

“The radiation dose is selected to ensure minimum radiation exposure to healthy tissues and maximum accuracy in targeting diseased tissues,” said UC Davis Chief of Radiology Elizabeth Morris.

As part of its growing commitment to advancing radioactive targeted therapy, the UC Davis School of Medicine Department of Radiology appointed Cameron Foster, director of the new UC Davis theranostics division and professor of clinical nuclear medicine, to oversee the construction of a new theranostics clinic.

Transforming nuclear medicine

“We are moving away from nuclear medicine being used largely for imaging,” said Foster. “We're taking advantage of novel compounds that both pinpoint and target tumors, allowing for removal of diseased tissue with limited side effects while aiming to minimize the chances of the cancer returning.”

Radiopharmaceuticals deliver targeted amounts of the required therapeutic agents. This burgeoning field of theranostics enables nuclear medicine doctors to progress beyond merely interpreting diagnostic scans and expand into involvement in treating patients. Consequently, UC Davis has begun to rethink the environment for patients being treated with nuclear medicine.

“There is a lot more patient interaction with theranostics,” said Foster. “The same doctor who interpreted patients' scans identifying their active cancer may now also be the

one treating them. That's exciting for patients because they are getting acute care from a nuclear medicine physician who is intimately aware of the characteristics of their tumor and will monitor it carefully while using targeted radiotherapy to treat.”

The new theranostics clinic will reflect the evolving relationship between patient and doctor. Some features of the new clinic now under construction include consultation rooms to help physicians share images with patients and go over nuclear medicine treatment options. The facility also will include space dedicated to supporting radiopharmaceutical therapy research and patients participating in nuclear medicine therapeutic clinical trials.

“Often we see patients who have exhausted all other options,” said Foster. “They are at a very expensive stage in their disease and we want to give them the best possible chance of survival while managing their cancer in the most efficient way.”

The theranostics clinic will centralize care for patients who receive their treatment and have their tumor tracked at the same location by the same medical staff, who often become like family to them.

“It's a centralized brain trust where friendly and familiar faces detect, treat and track tumors all in one location,” said Morris. “This one-stop shop for our patients is a real game changer for medicine, and we're proud to be at the forefront.”

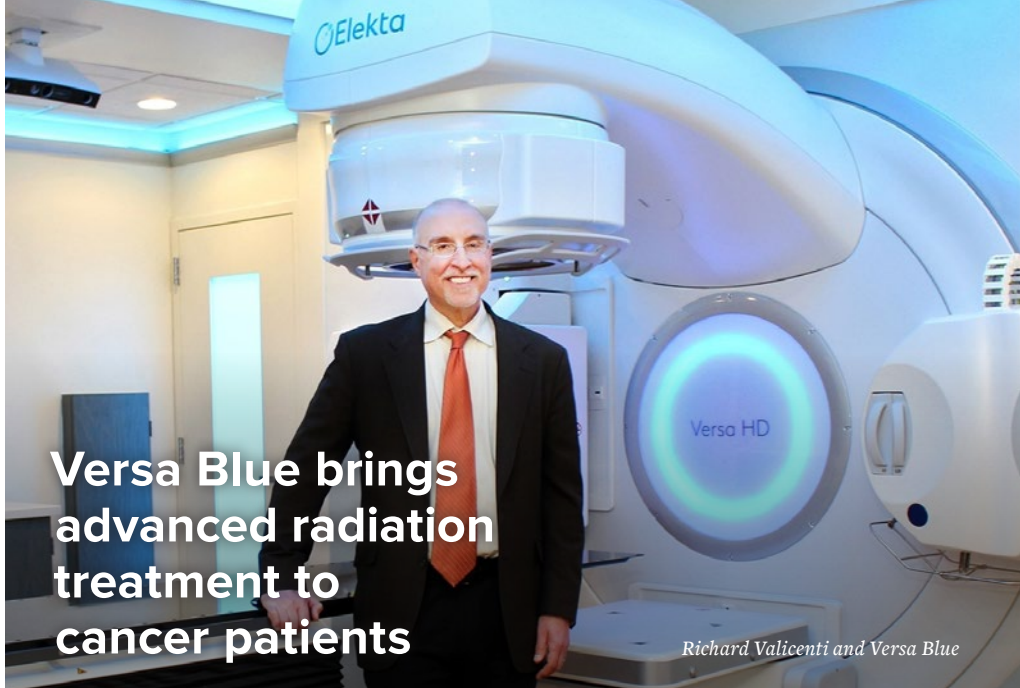
Pancreatic cancer patients already benefiting from theranostics at UC Davis

Theranostics is being pioneered at UC Davis to save the lives of pancreatic cancer patients. As part of a \$5 million grant provided by the Pancreatic Cancer Collective, radioactive isotope therapy was used to treat four pancreatic cancer patients this year as part of a new clinical trial. The Pancreatic Cancer Collective is an initiative of Lustgarten Foundation and Stand Up To Cancer.

Professor of Biomedical Engineering and Hematology/Oncology Julie Sutcliffe is leading the trial with Richard Bold, physician-in-chief of the UC Davis Comprehensive Cancer Center, as co-leader. The early-stage clinical trial will test the safety and efficacy of what is called peptide receptor radionuclide therapy or PRRT, which delivers radioactive isotopes directly into tumors to attack and kill the malignancy.



Julie Sutcliffe



Versa Blue brings advanced radiation treatment to cancer patients

Richard Valicenti and Versa Blue

High-definition linear accelerator targets tumors quickly and precisely

The UC Davis Comprehensive Cancer Center is ushering in a new era in therapeutic care for cancer patients with the unveiling of the first of two matching Elekta Versa high-definition (HD) linear accelerators, which are also known as “linacs.”

Versa Blue, as it is called by the Department of Radiation Oncology, is ideal for treating tumors that are hard to reach, prone to move, or next to vital organs. The high-tech machine targets tumors with fewer radiation sessions than existing technology while minimizing side effects for cancer patients.

The high-energy X-ray system was put into operation in June. Its 3D and 4D imaging technology locates tumors so precisely that the high doses of therapeutic radiation that it guides leave nearby healthy tissue completely untouched.


“What makes this linear accelerator different is that clinicians can use what we call a ‘six degrees of freedom couch’ that aligns the patient so that we can dial in a tumor target and treat it precisely with the radiation beam,” said Richard Valicenti, chair of the Department of Radiation Oncology.

“This is a very exciting expansion to our stereotactic radiation therapy program, and we are thrilled to offer it to Northern California.”

The innovative technology uses software that matches intense radiation beams to the size and shape of tumors, tailoring treatment with the highest levels of mapping, accuracy and precision. Versa Blue is the most advanced treatment platform available and is expected to improve outcomes for patients treated at the cancer center.

As a reflection of UC Davis’ blue and gold colors, a second “twin” Elekta Versa HD linac, named Versa Gold, is expected to begin operating by the end of the year. Together, the matched advanced-technology linear accelerators will enable patients to be treated in either room, thereby increasing our capacity to deliver highly precise, accurate and targeted radiation therapy.

“We expect these new machines to improve patient treatments and, especially patient comfort and healing, since the therapeutic radiation doses can be pinpointed in such a way that it greatly avoids affecting surrounding tissue areas,” Valicenti added.



New imaging diagnostic tool lights up tumors during cancer surgeries

An optical imaging technology developed by UC Davis researchers could help neurosurgeons more accurately differentiate between healthy and cancerous tissues during surgeries. The technology, called Fluorescence Lifetime Imaging (FLIm), may have wide potential applications in cancer surgeries.

Recently, the NCI awarded over \$6.3 million in grants to Laura Marcu, UC Davis professor of biomedical engineering and a pioneer in developing the FLIm technology. The funding supports her exploration of the clinical utility of FLIm in identifying tumors in patients with cancer. Advances in FLIm technology and the innovative approaches developed in the Marcu lab enabled initiation of large clinical studies with patients undergoing surgical procedures for cancer removal.

“We see great prospects from using FLIm in detecting and operating on cancerous tumors,” Marcu said. “FLIm

may allow for more cures with fewer long-term side effects and may help surgeons find early cancer growth not detected using regular pathology.”

What is FLIm and how does it work?

FLIm allows surgeons to visually spot and more precisely remove malignant tumors. It captures and analyzes the intrinsic light emitted by tissues. The light indicates the presence or absence of abnormalities that would signal the presence of cancerous cells. FLIm provides visual and quantitative data with precise measurements of this autofluorescence light.

FLIm seamlessly integrates with existing imaging techniques used in neurosurgery and robotic surgery. It is a significantly less expensive alternative to intraoperative MRI, and a more convenient and safer diagnostic tool than dye-based imaging.

During brain cancer surgeries, neurosurgeons need to identify and remove malignant tumors intertwined with normal, functional brain tissues. To distinguish the good from the bad, surgeons use assistive imaging technologies, ranging from large, expensive intraoperative MRIs to microscopic dye-based imaging tools.

These commercially available imaging tools generally are inefficient at detecting less-aggressive tumors. They require significant pre-surgical

While FLIm is still being tested for use in brain cancer surgeries, the technology has already proven effective in head and neck cancer surgeries.

UC Davis is a pioneer in FLIm application to head and neck surgeries

In transoral robotic surgery (TORS), surgeons use robot arms to work from within a patient's mouth to extract hard-to-reach tumors during head and neck surgeries. The procedure saves patients from external incisions in the neck and jaw that can leave them with permanent scarring and difficulties in eating, speaking and swallowing.

In collaboration with Intuitive Surgical Inc., Marcu and her team added FLIm technology to the da Vinci



“This UC Davis homegrown technology might become the next standard of care, adopted widely in cancer surgeries.”

—LAURA MARCU, PROFESSOR OF BIOMEDICAL ENGINEERING

planning, special operating room setup and the administration of potentially toxic dyes to patients.

Marcu partnered with UC Davis neurosurgeon Orin Bloch to explore FLIm as a better, safer and more precise imaging technology in identifying cancerous cells in the brain. They were awarded a \$3.1 million grant from NCI to test and validate FLIm as a tool for instant tumor tissue identification during brain surgeries.

“We believe the use of FLIm in brain cancer surgeries will advance the field and improve the survival chances for patients with brain cancer,” Bloch added.

robotic surgical system to better identify tumors during TORS. Marcu, who pioneered the research in the head and neck surgeries, collaborated with D. Gregory Farwell, professor and chair of the UC Davis Department of Otolaryngology — Head and Neck Surgery, and head and neck surgeons Arnaud Fassett Bewley, Andrew Birkeland and Marianne Abouyared.

In April 2021, the team was awarded a \$3.2 million grant from NCI to continue its research on FLIm technology use in head and neck surgeries. In 2014, they were granted a research

award to develop a FLIm technology prototype for these surgeries. They made such significant advances in their initial study, with more than 100 patients enrolled, that they were awarded the new grant to scale up their research to include clinical studies with 200 additional patients.

“We already saw promising results in identifying cancerous tissues during head and neck surgeries, and we are now exploring use of FLIm in brain cancer surgeries,” said Marcu. “This UC Davis homegrown technology might become the next standard of care, adopted widely in cancer surgeries.”



New screening guidelines may help reduce lung cancer disparities

Black people, women and younger smokers to get access to life-saving lung scans

New lung cancer screening guidelines recommended by the U.S. Preventive Services Task Force will help address health disparities and catch more cases of lung cancer, earlier. The goal is to reduce the number of deaths from the biggest cancer killer in America.

“More Black smokers and women will be eligible,” said David Cooke, chief of the new UC Davis Health Division of General Thoracic Surgery. “The new guidelines are not a panacea because actual screening rates, especially among communities of color, are abysmally low, but the new guidelines will no doubt save more lives.”

Blacks, women and younger people tend to smoke less, which means they often don’t meet existing screening thresholds, despite being at risk for lung cancer. The task force recommendation means private insurers must offer the screening without a copay to those who are eligible.

Under the new guidelines, anyone between the ages of 50 and 80 who has smoked at least 20 “pack-years” and either still smokes or quit within the last 15 years will be eligible. A “pack-year” means smoking a pack of cigarettes a day for a year or an equivalent amount.

Someone could qualify by smoking a pack a day for 20 years or two packs a day for 10 years. Since 2013, low-dose CT scans have been recommended only for heavier smokers (30 pack-years), starting at age 55.

Lung cancer is the nation’s leading cancer killer of both men and women, according to the American Lung Association (ALA). Smoking causes nearly 90% of lung cancer cases and, unfortunately, over 70% of lung cancer cases are diagnosed at an advanced stage when survival rates are low.

Nearly 160,000 Americans die from lung cancer annually, which is more deaths than from breast, colon, prostate and pancreatic cancers combined, but studies show only about 5% of those eligible for lung cancer screening get screened.

ALA reports that Black Americans with lung cancer were 16% less likely to be diagnosed early, 19% less likely to receive surgical treatment, and 7% more likely to not receive any treatment compared to white Americans.

“There are still plenty of barriers to getting screened, including lack of access to health care,” said Cooke.

UC Davis Health is committed to improving access to lung cancer screenings and started a multidisciplinary Comprehensive Lung Cancer Screening Program in 2013. For more information on how to get a lung cancer screening, call **916-734-0655** or contact your primary care physician.

LUNG CANCER SYMPTOMS

- A cough that does not go away or gets worse
- Coughing up blood or rust-colored sputum (spit or phlegm)
- Chest pain that is often worse with deep breathing, coughing, or laughing
- Hoarseness
- Loss of appetite
- Unexplained weight loss
- Shortness of breath
- Feeling tired or weak
- Infections such as bronchitis and pneumonia that don’t go away or keep coming back
- New onset of wheezing

Thoracic surgery chief David Tom Cooke named to Cancer Health's 25: Black Lives Matter list

David Tom Cooke, the new chief of general thoracic surgery at UC Davis Health, was named by *Cancer Health* magazine as one of the top 25 individuals breaking down racial barriers to better cancer care.

This year, the magazine dedicated its second annual edition of *Change Makers* to Black lives. The Cancer Health 25: Black Lives Matter list recognizes 25 individuals who, along with many others, are fighting to break down barriers to the best cancer care for all Americans.

In a feature article on the award recipients, *Cancer Health* noted that Cooke "...is well aware of the inequities that plague medicine. Case in point: He was recently mistaken for an orderly by one of his patients. But such experiences have helped inform his career path." In 2013, Cooke, a national expert on lung and esophageal

disease, co-founded the popular bimonthly #LCSM (lung cancer social media) chat on Twitter and in 2019 was named chair of the Society of Thoracic Surgeons' Workforce on Diversity and Inclusion. His scholarly work includes research into disparities in lung cancer care between racial groups.

The *Cancer Health* article points out that according to the American Society of Clinical Oncology (ASCO), "Racial and ethnic minorities face poorer outcomes, are less frequently enrolled in clinical trials, and are less likely to be offered palliative care, genetic testing and other critical care. Specifically, African Americans have the highest death rate and shortest length of survival of any racial/ethnic group for most cancers."

Cooke said, "I'm honored and humbled to receive the Cancer Health 25: Black Lives

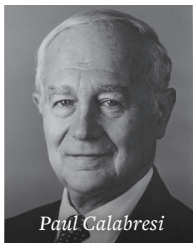


Matter award, named alongside such leaders as Jamie Foxx, Dr. Ibram X. Kendi and ASCO president Dr. Lori J. Pierce. With the ongoing and critical support of UC Davis Health, I intend to continue my commitment to address the needs of the underserved as we challenge the key drivers of health inequities."

Cancer Health recognizes that many groups experience cancer health disparities, including Latinos, Native Americans, Asian Americans and people who are LGBTQ, older, disabled, poor, rural and more.

\$3.98 million federal grant to advance cancer researcher bench strength

Paul Calabresi Career Development Award for Clinical Oncology renewed



The UC Davis Comprehensive Cancer Center successfully renewed its Paul Calabresi Career Development Award for Clinical Oncology (PCACO) K12. The award provides \$3.98 million in National Cancer Institute (NCI) funding through 2026 to increase the number of clinician-

scientists trained in clinical and translational cancer research, and to promote their career development as cancer researchers.

NCI initiated the program in 1991. In 1994 it was renamed the Paul Calabresi Award in Clinical Oncology in honor of the late Paul Calabresi, a pioneering oncologist who led the development of cancer drugs.

Scholars are selected through a rigorous process and are expected to develop their own investigator-initiated clinical trial during the training period.

The cancer center leverages the program to train junior faculty (basic/translational scientists and clinician scientists) as investigators in team-based, patient-oriented cancer

research. Upon successful completion of a three-year, salary-supported core curriculum, scholars receive a UC Davis Comprehensive Cancer Center Certificate in Clinical Cancer Research.

"This is a high-impact program to nurture patient-oriented cancer researchers early in their career to become independent investigators," said UC Davis Comprehensive Cancer Center Director Primo "Lucky" Lara Jr., who is also the PCACO principal investigator and program director.

Selected scholars will receive 75% protected time for research, formal mentored training in clinical cancer research, \$100,000 per year (for up to 3 years) to support salary and benefits, and \$13,000 per year (for up to three years) for research and travel expenses.

The mentored research training plan will be supervised by two senior, independently funded faculty members (one basic/translational mentor and one clinical mentor) who will guide the scholar in the development and conduct of his/her research project.

Stem cell transplants now available for some on outpatient basis

Lengthy hospital stays are no longer the only option for some stem cell transplant patients. The first patient to receive a transplant on an outpatient basis at UC Davis Health is back home and in remission.

“I love the fact that I could be part of such a success,” said Benicia resident Dara Karl, the first multiple myeloma patient at UC Davis to receive a stem cell transplant without being hospitalized during the procedure.

Many blood cancers are resistant to standard doses of chemotherapy. Studies have shown that high doses of chemotherapy can eradicate many, if not all, cancer cells that are resistant to standard doses of chemotherapy. However, high doses will also damage the bone marrow and stem cells that reside within it. Stem cell transplantation, sometimes referred to as a bone marrow transplant, is a procedure in which a patient receives their own archived stem cells to allow them to recover from the effects of high doses of chemotherapy.

After the stem cells are infused into a patient’s bloodstream, they travel to the bone marrow and begin the process of forming new, healthy blood cells, including white blood cells, red blood cells and platelets.

A month following her stem cell transplant, Karl was told by her oncologist that her cancer was in deep remission. In fact, there was no sign of the cancer at all.

Karl said she doesn’t feel like a pioneer and she says she simply did, “what my doctors told me to do.” Karl, a widow who has two grown daughters — one a professor in Oklahoma and the other severely disabled with cerebral palsy at home — didn’t want to endure a typical

A STEM CELL TRANSPLANT MAY BE:

- Autologous (using a patient’s own stem cells that were collected and saved before treatment)
- Syngeneic (using stem cells donated by an identical twin)
- Allogeneic (using stem cells from a related or unrelated donor)
- A cord blood recipient (using umbilical cord blood donated after a baby is born)

three-week stay in a hospital for the transplant procedure. Her sister, Deb Deans, was by her side through it all as the two relaxed, following the procedure, in the comforts of the Marriott Hotel on the UC Davis Health campus.

“Delicious meals were brought to us by hospital staff and we were able to have some of our own diet-compliant snacks thanks to the room having a kitchenette,” said Karl. “It certainly was a lot better than being in a hospital room, with the sounds of medical equipment and nurses coming in, day and night.”



First outpatient stem cell transplant patient Dara Karl

“Outpatient stem cell transplants offer the full benefits of the standard inpatient version of this lifesaving procedure.”

–JOSEPH TUSCANO, UC DAVIS ONCOLOGIST

Karl did have minor complications and spent a few days in the hospital toward the end of her two-week recovery, but said she was pleased she was able to spend her initial recovery time in the hotel.

UC Davis oncologist Joseph Tuscano oversaw the transplant in late April. He said most outpatient stem cell transplant patients will be able to recover at home as long as they live within an hour of the

cancer center. If not, hotel accommodations on campus are available.

“Outpatient stem cell transplants offer the full benefits of the standard inpatient version of this lifesaving procedure,” said Tuscano. “But we think there will be a decrease in recovery time and an increase in the mental wellness of patients who can become stressed by long hospitalizations and separation from family.”

Offering outpatient stem cell transplants is even more important during times such as the COVID-19 pandemic, when visitors to the hospital are limited.

“We think being with loved ones is an important part of the recovery process,” said Tuscano. “It also lowers health care costs and allows the patient to get back to enjoying life, which is what it is all about.”

Which patients are good candidates for an outpatient stem cell transplant?

They need to be receiving an autologous stem cell transplant and fit the following criteria:

- Be in relatively good health.
- Live within an hour drive of the UC Davis Medical Center or willing to stay at a nearby hotel.
- Have a responsible relative or friend who can serve as a support system for the patient 24/7 for at least two weeks.
- Agree to follow infection prevention guidelines (i.e., wear a mask, and stick to a strict medication and diet regimen).
- Refrain from allowing pets or young children in the home during the treatment process.

Connie Way came from the Midwest to San Francisco in the late 1960s, landing a job as a telephone operator for Pacific Bell. There, she met her husband, Bill, and together they raised two sons. Her life was full and exciting, and when retirement came it read almost like a storybook. The couple moved to Stonyford in Colusa County, at the edge of the Mendocino National Forest, embracing a slower pace of life.

Then came health challenges. First, Bill died from lung disease in 2015. Now, Connie is fighting with everything she has to battle stage III esophageal cancer.

“I never thought that I would get cancer,” said Way, 74, who was diagnosed in the middle of the COVID-19 pandemic. “Giving up wasn’t an option, though, and I am grateful that recent advancements in fighting esophageal cancer have worked in my favor.”

Robotic surgery saves lives and restores hope for esophageal cancer patients

Way’s oncologist at Adventist Health + Rideout Cancer Center in Marysville started her on chemotherapy and radiation, and her tumor shrank to nearly 3 centimeters. Her oncologist felt that because Way’s case was complicated, the next best step was surgical treatment at the UC Davis Comprehensive Cancer Center, where advances in video-assisted robotic technology could provide the best outcome.

That’s where Way met Lisa Brown, assistant professor of general thoracic surgery at UC Davis and a national expert on minimally invasive surgery for complex esophageal disease. The other member of her surgical team was David Tom Cooke, chief of general thoracic surgery, director of the UC Davis robotic thoracic surgery program and a national expert on the surgical treatment of esophageal cancer.

Together, the surgeons used the robotic da Vinci Surgical System to perform the intricate yet minimally invasive surgery and successfully remove the tumor. Robotic esophagectomy, the procedure she underwent, results in less pain than conventional surgery, with correspondingly faster return to activities of daily living.

“I’m still walking, talking and breathing, and I feel so fortunate to have been seen at the UC Davis Comprehensive Cancer Center,” Way said.

UC Davis performs the highest volume of robotic thoracic surgery in the region.

“We are proud to offer complex and innovative resources such as robotic surgery to support our patients as



Connie Way with her son Eric Way

Symptoms and prevention of esophageal cancer



Reflux Clinic patient Vincent Munoz meets in 2019 with Dr. Hazem Shamseddeen.

Esophageal cancer is three to four times more common among men than women, and the risk of the disease increases with age. Most esophageal cancers are squamous cell (the risk factors for which include tobacco and alcohol use) or adenocarcinomas (often caused by acid reflux and being overweight). Although the incidence of squamous cell carcinoma is decreasing in the United States, the incidence of reflux-induced adenocarcinoma is dramatically rising.

Early esophageal cancer may not cause symptoms.

As the cancer grows, the most common symptoms are:

- pain when swallowing or food getting stuck
- pain in the chest or back
- weight loss
- heartburn
- a hoarse voice or cough that doesn't go away within two weeks

People who suffer from persistent reflux symptoms should talk to their doctor about the risk of esophageal cancer. Over time, the acid that backs up into the esophagus can damage the lining and lead to a condition called Barrett's esophagus, which significantly increases the risk of developing esophageal cancer.

UC Davis Health in 2019 opened a unique clinic that conducts an all-in-one treatment program to control gastroesophageal reflux disease (GERD).

"We wanted an interdisciplinary team approach to taking care of patients who have reflux, with the ultimate goals of improving quality of life and preventing esophageal cancer," said Peter Belafsky, co-director of the UC Davis Reflux Clinic. "In the two years we've been open, the patient load has increased dramatically — especially since the onset of COVID-19 when the stress caused by the pandemic created an alarming demand for GERD treatment."

we push the envelope to restore the health of our California communities," Cooke said.

Novel alternatives to surgery

Shiro Urayama and other UC Davis gastroenterologists use radiofrequency ablation, photodynamic therapy and cryotherapy — new non-surgical solutions — to treat pre-cancerous to early cancer conditions in the esophagus.

Urayama is renowned for performing advanced endoscopy interventions including endoscopic mucosal resection (EMR) and endoscopic submucosal dissection (ESD), which use an electrocautery snare or knife to resect out large, flat lesions from the esophagus lining. Patients often go home on the same day. Thanks to Urayama's quest to be trained in the latest endoscopic

weapons to fight esophageal cancer, UC Davis outperforms in esophageal endoscopic interventions in California.

"The reason we need to be leading edge at UC Davis is because of the

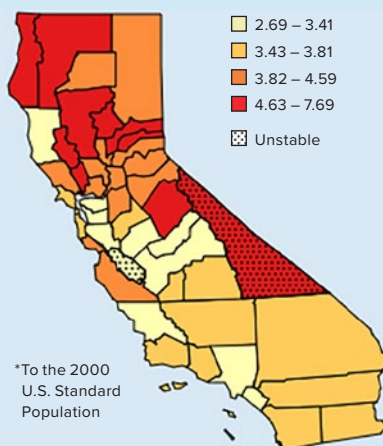
volume of esophageal cancer patients we see who need these lifesaving procedures," Urayama said. "The rate of esophageal cancer is higher than average in our region, especially in the northern portion of the Central Valley."

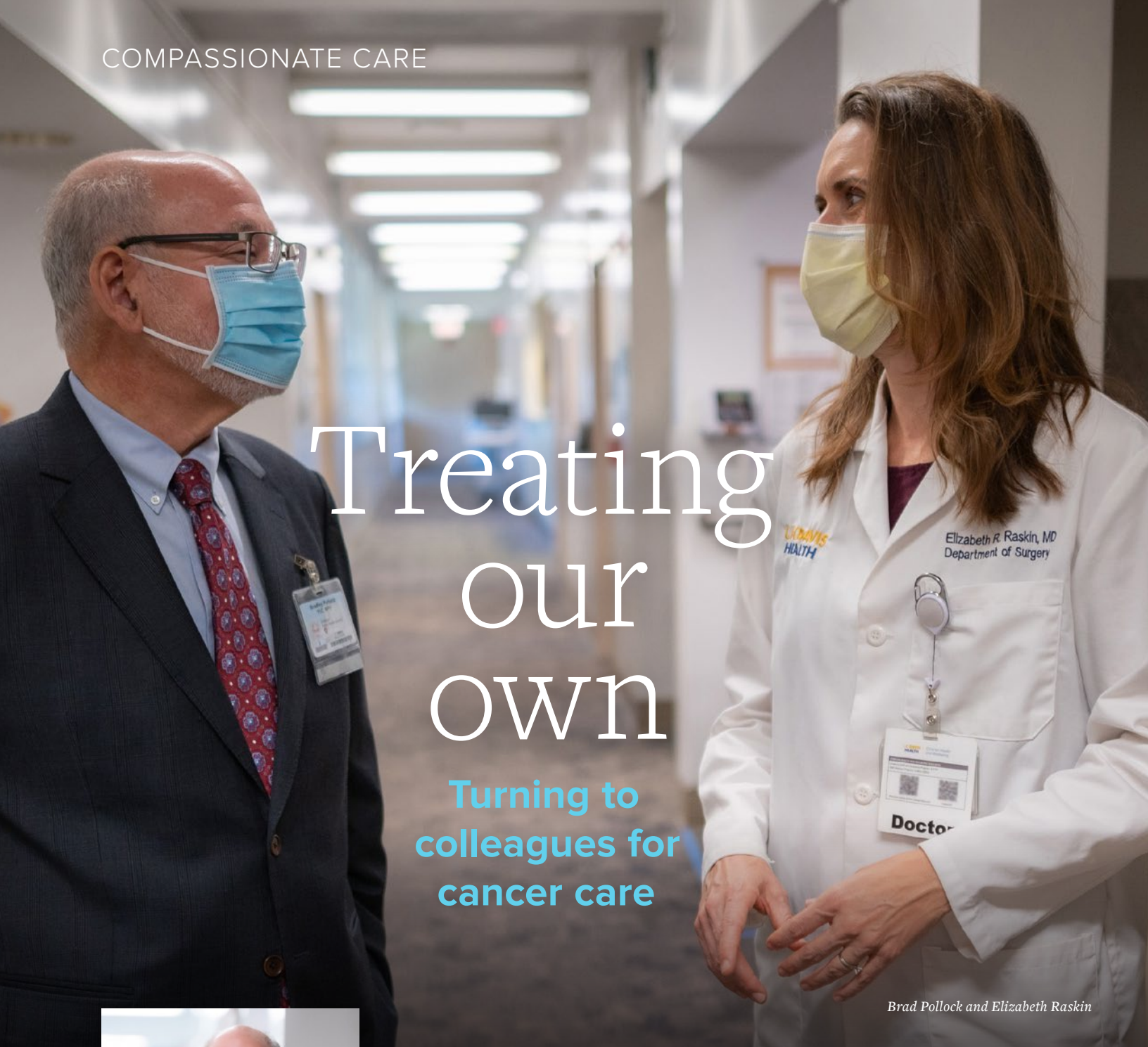
The higher esophageal cancer rate likely is due to multiple factors, and more research needs to be done in this field. However, symptoms and family history are identified as risk factors for developing precancerous or cancerous lesions in the esophagus. Anyone who has chronic heartburn, difficulty in swallowing food or related symptoms (see the accompanying article), or a family history of esophageal cancer, should ask their primary care physician for a referral to a gastroenterologist for further assessment and management.

Age-Adjusted* Invasive Cancer Incidence Rates in CA 2013–2017

By county

California Rate: 3.42/per 100,000





Treating our OWN

Turning to
colleagues for
cancer care

Brad Pollock and Elizabeth Raskin



BRAD POLLOCK knows a lot about cancer. In addition to his appointments as chair of the UC Davis Public Health Sciences Department and associate dean for public health sciences, Pollock is an expert in cancer epidemiology, including the study of what causes cancer, how it spreads and cancer prevention.

Over his career, Pollock has built an international reputation for his research into childhood cancers. As an epidemiologist, he jumped into the world of COVID-19 when the pandemic started.

But, until November 2020, he was never a patient in a hospital.

What was more remarkable is that he found himself a patient in the hospital where he works, being given lifesaving treatment by colleagues.

“I took comfort in knowing that I was in the right place. As a cancer researcher, I knew getting my cancer treated at an NCI-designated comprehensive cancer center would give me the best possible outcome and, at that point, I turned my care over to my peers.”

—BRAD POLLOCK, UC DAVIS CANCER EPIDEMIOLOGIST AND COLON CANCER PATIENT

Colon cancer diagnosis during COVID-19

Pollock was diagnosed with stage II colorectal cancer when COVID-19 was surging, just as the holidays were descending in late November.

“Even though we were at the height of the pandemic, I knew that I shouldn’t delay getting my surveillance colonoscopy,” Pollock said. “Cancer doesn’t take a break for COVID-19, and I didn’t hesitate to get my procedure despite feeling fine and not experiencing any symptoms.”

His cancer diagnosis didn’t completely take Pollock by surprise because, as a cancer researcher, he was aware that his history of inflammatory bowel disease put him at higher risk for colon cancer. But like anyone who hears the words “you have cancer,” the 64-year-old was distraught. His biggest fear was leaving Nancy, his wife of 36 years, all alone.

“I took comfort in knowing that I was in the right place,” said Pollock. “As a cancer researcher, I knew getting my cancer treated at an NCI-designated comprehensive cancer center would give me the best possible outcome and, at that point, I turned my care over to my peers.”

Pollock didn’t know his surgeon, Elizabeth Raskin, because she had only recently joined the UC Davis Comprehensive Cancer Center, but he knew of her reputation as a leader and pioneer in robotic-assisted colorectal cancer surgery.

“I felt incredibly fortunate to look no further than my workplace to get the best possible treatment,” Pollock said.

“Brad had a four-centimeter tumor that had penetrated the lining of his colon,” Raskin said. “Robotic technology enabled him to undergo minimally invasive surgery for his colon cancer and, ultimately, recover very quickly.”

New chief of Division of Colorectal Surgery is a pioneer in robotic colorectal surgery



As the new chief of the UC Davis Division of Colorectal Surgery, Elizabeth Raskin leads a busy surgical service that focuses on leading-edge techniques, including robotic and laparoscopic surgery.

“We have only scratched the surface with digital and robotic surgical technology,” said Raskin, who is double board-certified in general and colorectal surgery.

“Through sound technique and smart, innovative technology, we can achieve improved patient outcomes with shorter recovery times. We have to use our experience, instinct and imagination to reach beyond traditional boundaries to pave the way for better surgical care.”

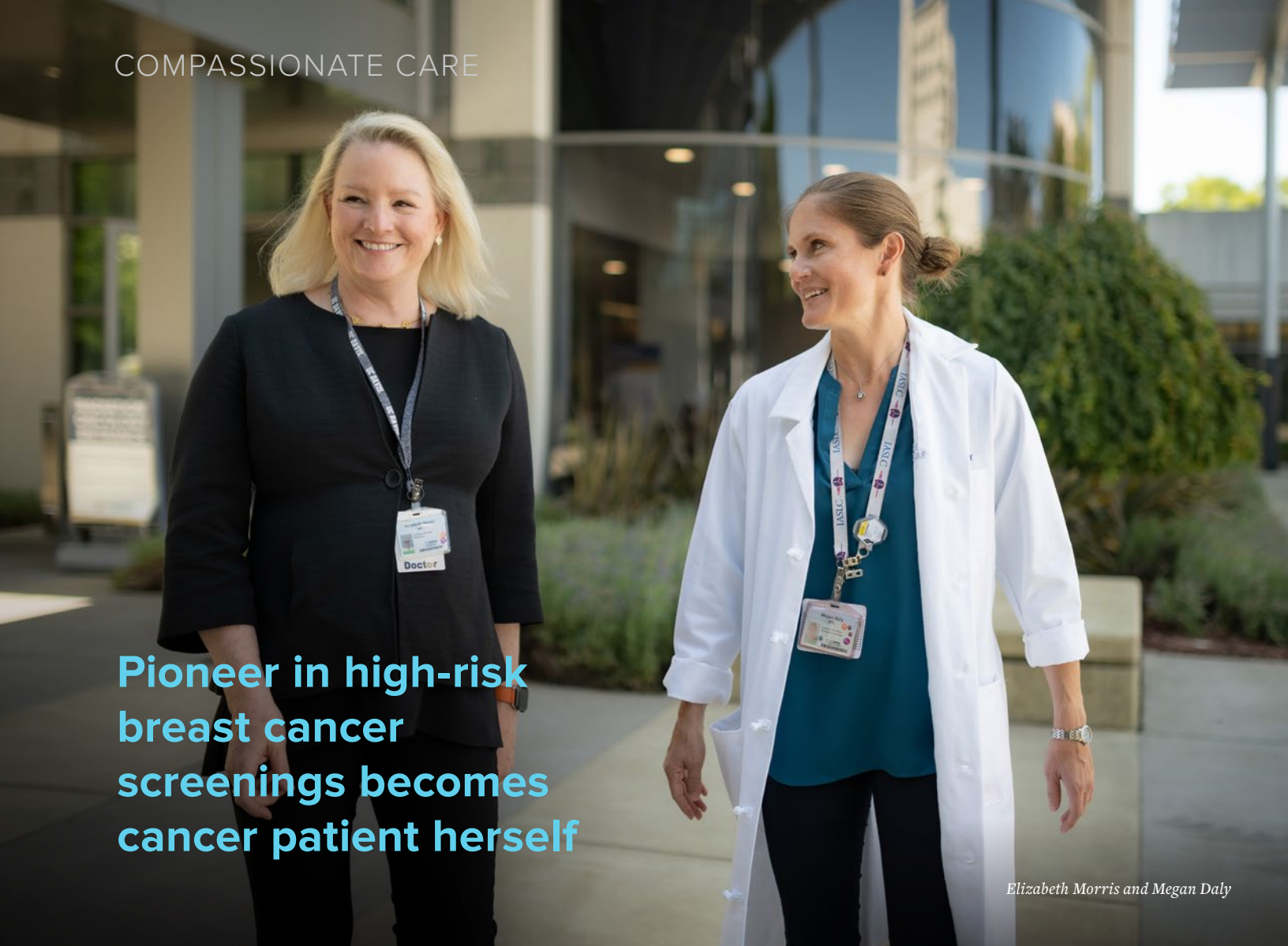
Raskin said she was drawn to UC Davis because of the investment it was making in robotic- and video-assisted surgery. She also knew that the rural nature of the region served by the UC Davis Comprehensive Cancer Center would allow her to put that new technology to use.

“Many of the patients we care for live in remote areas and do not have regular access to high-quality medical and surgical care. In fact, delays in diagnosis can result in a more advanced stage of cancer that is more challenging to treat,” Raskin said. “Our fellow Californians in rural counties deserve the same high-quality care that is available in the urban setting. I felt I could make an impact in this setting given these disparities.”

Prior to joining UC Davis, Raskin was an assistant professor of surgery in the Division of Surgical Oncology at Loma Linda University in San Bernardino County and a staff surgeon at the VA Loma Linda Healthcare System. As one of the first women in the nation to perform robotic colorectal cancer surgery, Raskin now teaches other surgeons nationally and internationally.

Along with her passion for technology and working with underserved communities, Raskin enjoys spending quality time with her family. In her yard, she tends to a cactus mini farm that includes over 100 species. She and her husband believe in keeping fit and passing along their active lifestyle to their four children.

“Exercise and a high-fiber diet are key to good health and reducing your chances of colorectal and other types of cancer,” Raskin said.



Pioneer in high-risk breast cancer screenings becomes cancer patient herself

Elizabeth Morris and Megan Daly

ELIZABETH MORRIS, new chair of the UC Davis School of Medicine Department of Radiology, has an impressive résumé as a pioneer in high-risk breast cancer screening. She also gained international prominence as coauthor of the book *Breast MRI: Diagnosis and Intervention*.

Morris has conducted research on imaging biomarkers to assess risk and treatment response. She also advocates for getting women at risk for breast cancer the screenings they need to detect cancer when it is most responsive to treatment.

And, now, she is a breast cancer survivor herself.

“For me, the whole experience of being a cancer patient felt like a confluence of my personal and professional lives,” said Morris. “I’ve been on a mission to detect breast cancer early in women so it can be found in time, and then suddenly I was facing my own breast cancer diagnosis.”

Morris comes to UC Davis from New York’s Memorial Sloan Kettering Cancer Center, where she was chief of Breast Imaging Services. Her cancer was caught as she was getting elective breast reduction surgery before leaving for California to accept her new post at UC Davis Health.

Never did Morris think she would start radiation therapy at the UC Davis Comprehensive Cancer Center the same month she started her new position across campus.

Risk factors low

“I didn’t have any family history of breast cancer, and my only risk factors were being a female over 50 with extremely dense breasts,” said Morris as she openly shared her story to benefit other women who wonder if they might contract breast cancer.

“My 3D mammogram and screening ultrasound were negative, so I didn’t wait apprehensively for my

“I’ve been on a mission to detect breast cancer early in women so it can be found in time, and then suddenly I was facing my own breast cancer diagnosis.”

—ELIZABETH MORRIS, CHAIR OF THE DEPARTMENT OF RADIOLOGY

pathology results,” said Morris. “I was surprised when my doctor told me they discovered a four-millimeter tumor called invasive lobular carcinoma, named for the way it grows in a single-file linear pattern. The shape of the tumor makes it difficult to spot in a traditional mammogram and ultrasound.”

Advanced screening technology key to early detection

Lobular cancers are the second most common type of invasive breast cancer, meaning cancer that has spread to surrounding tissue.

“It just goes to show that mammograms don’t detect all cancers, and that’s why we need to make contrast-based imaging such as MRI or contrast-enhanced mammography available to women — perhaps not annually but at least every few years,” said Morris.

Tests using an injection of contrast dye, such as MRI and contrast-enhanced mammography, are better at detecting all types of cancer compared with traditional mammograms.

Coming home for care

Morris completed her undergraduate degree at UC Davis before receiving her medical degree from UC San Francisco, so she was returning to her alma mater to finish her cancer treatment.

“If I had to take on cancer, I’m glad I was at UC Davis,” said the Cal Aggie alumna. “My own personal journey has only strengthened my resolve to give women the best possible chance of surviving breast cancer by getting them access to the best possible screening technology,” said Morris.

Formidable cancer fighters forming a strong bond



Megan Daly and Elizabeth Morris have more than a couple of things in common: They are female physicians at UC Davis Health, both in the radiology field, and both determined to cure Morris’ breast cancer.

“As a breast imaging expert, with an extensive background in diagnostic radiology, Liz had a very thorough understanding of our

radiation treatment plan before we even spoke. So, if anything, she asked fewer questions than many patients who don’t understand the concept of radiation or why we use it,” said Daly, a radiation oncologist. She treated Morris with 16 fractions, or small doses, of radiation starting the first month of her tenure as chair of radiology at UC Davis.

Radiology is used in diagnosing cancer through imaging radiation, and radiation oncology deploys radiation to target and destroy tumors after they are discovered.

Daly and Morris share a doctor-patient relationship, and have also become peers and personal friends as they took an aggressive approach to treating Morris’ breast cancer.

“Megan has such a personable style with her patients and is so effective at explaining the advances in radiation oncology now available to breast cancer patients treated at the UC Davis Comprehensive Cancer Center,” Morris said.

Daly specializes in a variety of radiotherapy techniques, including the image-guided radiation therapy used to treat Morris.

“Liz was a great patient and, now as a breast cancer survivor, is in a unique position to understand the journey our patients take as they bravely face and conquer cancer,” Daly said.



New research study aims to reduce cancer disparities

Multicultural campaign encourages participation from diverse communities

To understand how cancer affects people, researchers at the UC Davis Comprehensive Cancer Center are evaluating healthy people with their latest imaging technology, EXPLORER, which is the world's first total-body PET scanner.

The EXPLORER scanner offers a whole new way of looking at the human body and has already shown itself to be far more powerful than the previous

generation of PET scanners. The purpose of the study is to better understand the differences between the biology of healthy people and those with cancer.

However, most of the volunteers for this study have been homogenous in their backgrounds and have not reflected the diversity of the population of cancer patients in our local community.

A new study is hoping to correct this imbalance because it can lead to errors in the conclusions and that can get in the way of addressing the very real and significant disparities in the burdens of

cancer that exist between groups with different racial and ethnic backgrounds.

The cancer center seeks to recruit 20 people from the Sacramento region from African American, Latino and Asian American populations to participate in the EXPLORER research study.

Members of the UC Davis Health Community Advisory Committee (CAB) toured the EXPLORER Molecular Imaging Center recently and shared their experiences through video interviews in which they explained why they feel the study is critically important.

"You'll have answers and better information, which hopefully means better cancer outcomes for African Americans in the future," said Shauntay Davis-Patterson, a UC Davis CAB



A multicultural campaign is underway to educate communities about the importance of the study and to encourage participation.

member who also directs the state's Comprehensive Cancer Control Plan.

EXPLORER can capture incredibly high-quality images, as well as 3D movies showing how radiotracers behave across the entire human body,

something that no other scanner can do. These images and movies provide the clearest images to date revealing in real time how internal body systems interact.

“While participating in the study doesn’t benefit the health of the individual directly, study volunteers are ‘paying it forward’ by contributing to a critical database that will help others fighting cancer from the same race and ancestral background,” said Moon Chen, associate director for the cancer center’s Office of Community Outreach

organization committed to promoting health and preventing chronic disease in underserved communities.

PET scanners use short-lived radioactive tracers to illuminate how organs and tissues function and can scan only 20-centimeter segments at a time. EXPLORER produces much higher quality images than other PET scanners and can image the entire body at once, which leads to more accurate diagnosis.

Jose Miguel Suarez, a CAB member and clinical director for the Health

“We live in a very diverse community and region, and the more diverse our participants can be in clinical research, the more treatment protocols are going to be developed and be more relevant to a whole variety of communities.”

—DEBRA OTO-KENT, UC DAVIS COMMUNITY ADVISORY BOARD MEMBER

and Engagement, and project lead for the new study. “The study is expected to create a baseline for distinguishing what might be ‘normal or healthy’ in a scan, versus something that is ‘abnormal’ and should be examined further.”

More than 1,000 research and clinical cases have been completed since the EXPLORER opened to patients in 2019. Now, a National Cancer Institute supplemental grant is helping to bring benefits of EXPLORER to racial and ethnic minorities in the region served by the cancer center.

“We live in a very diverse community and region, and the more diverse our participants can be in clinical research, the more treatment protocols are going to be developed and be more relevant to a whole variety of communities,” said Debra Oto-Kent, a UC Davis CAB member and executive director of the Health Education Council, a nonprofit

and Life Organization (HALO), Inc., Sacramento Community Clinics, said, “It’s an opportunity for all communities, from different races, languages and cultures, to participate and gain access to the EXPLORER.”



To be eligible, participants must be at least 18 years of age and belong to one or a combination of the following racial/ethnic backgrounds:

- Black/African American
- Hispanic/Latino
- Asian American/Pacific Islander
- Alaska Native/American Indian

For more information regarding participation requirements, go to the EXPLORER PET/CT: Evaluation of Healthy Individuals from Racial/Ethnic Minority Populations study page or contact study coordinator Lynda Painting at Lpainting@ucdavis.edu or call her at **916-731-9004**.

Access to 3D mammography often depends on race, income and education

A UC Davis Health researcher collaborated on a comprehensive sociodemographic study exposing stark health disparities in access to 3D mammography.

The study results published in *JAMA Network Open* show that Black women and Latinas, as well as less-educated and lower-income women, have not been able to obtain 3D mammography as easily as white, well-educated and higher-income women.

The research team reviewed 2.3 million breast screening exams collected by the national Breast Cancer Surveillance Consortium from 92 imaging facilities across five states. That makes it the largest-ever study of U.S. access to digital breast tomosynthesis (DBT), commonly referred to as 3D mammography. The exams were performed on women ranging from 40 to 89 years of age between January 2011 and December 2017.

The 3D technology is more accurate than traditional digital mammography. It can detect more cancers and yields fewer false positives. The study showed that access to the breast screening technology has not been equitable, even though it was approved by the U.S. Food and Drug Administration a decade ago.

“Given the large research sample and our longitudinal data collection, we were able to evaluate use by minority



Diana Miglioretti

and traditionally underserved populations,” said UC Davis Professor Diana Miglioretti, the senior author of

the paper. “Unfortunately, we were not surprised to find that these traditionally underserved populations were less likely to attend facilities that offered 3D mammography, and even when they did, they were less likely to receive a 3D mammogram.”

3D mammography access isn't the same for everyone

In 2011, only 3% of women in the study could access 3D mammography at the

time of their breast cancer screening. By 2017, that figure had grown to 82%. Unfortunately, this improved availability was not experienced equally. When both 2D and 3D mammograms were available onsite at the time of breast cancer screening, DBT was obtained by: 37% of Black women vs. 43% of Asian American women, 44% of Hispanic women and 53% of white women.

- 41% of women with less than a high school education vs. 50% of women with a college degree.
- 44% of women living in ZIP codes with the lowest quartile of median household income vs. 51% of women living in ZIP codes with the highest quartile of median household income.



Equalizing breast cancer detection is key to improving outcomes for Black women

Addressing health disparities is key to improving the odds of Black women surviving breast cancer who have a slightly lower risk of getting breast cancer but are 40% more likely to die of the disease than white women in the United States.

Black women are often diagnosed with more aggressive breast tumors at younger ages, and screening guidelines based on conventional understanding of breast cancer in white women may fail to achieve the best outcomes in diverse populations.

“It’s important to not only acknowledge health disparities but to do something about it,” said Samrrah Raouf, who’s coordinating the WISDOM Study (Women Informed to Screen Depending on Measures of Risk), one of several research studies the cancer center is conducting aimed at early detection of cancer.

UC Davis Comprehensive Cancer Center researchers are broadening the WISDOM Study this year to recruit women across diverse backgrounds and ethnicities to better identify those at highest risk in diverse communities.



Velvia Gullatt, a WISDOM Study participant who understands the importance of diversity in research. “The more information researchers have about our lives, the more they can help us. If we don’t participate, opportunities for change are diminished and we will continue to be left out of life-saving treatments at early stages.”

The goal, said UC Davis study investigator Alexander Borowsky, is to recruit at least 1,500 women from diverse ethnicities to participate in the WISDOM Study.

The study is spearheaded by UC physicians and scientists as part of the Athena Breast Health Network. UC Davis is one of five UC medical centers to collaborate in the national study intent on answering the question: What is the best mammography screening schedule for women?

“When I think about people who die from breast cancer as opposed to those who survive it, I think of Black women,” said

“The WISDOM Study tests the concept that the best strategy for breast cancer screening and prevention may not be one-size-fits-all, especially when it comes to women of color,” said Borowsky. “The study will help us personalize effective screening to improve cancer detection and treatment, which is particularly important for women who have been historically underrepresented or subject to health disparities.”

Benefits of participating in the WISDOM Study

All participants in the study will have their breast cancer risk assessed, and those with high risk will be promptly told. Participants who provide a sample for genetic analysis will receive a copy of their gene report. Women in this group will also receive a personalized screening plan based on their unique risk factors for breast cancer. Women shown to have a comparatively high risk will receive free access to a breast health specialist who will provide guidance and answer questions. Genetic results may also offer useful information to blood relatives.

Wisdom

Virtual participation in study

Study participation is completely online and requires only about an hour of time, once a year for about five years. There are no lab or clinic visits. However, a study coordinator is always available to answer questions or to help participants navigate the enrollment process.

Enrolling is easy

To find out more about WISDOM or to register, go to thewisdomstudy.org. You can also contact study coordinator Samrrah Raouf at saraouf@ucdavis.edu or 916-734-5772.

Screen 2 Screen: Virtual breast cancer outreach to benefit Asian women

Effort is part of study to increase screenings and decrease breast cancer rates



UC Davis Screen 2 Screen planning team

The Vietnamese Cancer Awareness Research and Education Society, or VN CARES, a UC Davis student-run clinic, is partnering with the UC Davis Comprehensive Cancer Center to



create virtual breast cancer outreach for Asian American women in the Sacramento area. The educational

series, called Screen 2 Screen, is funded by the Safeway Foundation.

Screen 2 Screen is part of the cancer center's research investigating effective ways to use culturally sensitive, evidence-based outreach to

increase breast cancer screening rates in Asian communities. Asian American women age 40 and over in the Sacramento region are eligible to participate in Screen 2 Screen.

Despite an overall decline in breast cancer mortality rates, breast cancer rates among Asian American women have remained constant. Persistently higher incidence of breast cancer may be the result of lower rates of breast cancer screenings among Asian American women. Due to screening delays, many Asian American women are not diagnosed until cancer has advanced to later stages, compared to earlier cancer detection among other racial and ethnic groups.

"We hope that by offering in-language, culturally tailored breast cancer health education and free mammography, we can meet women where they are and, ultimately, lower breast cancer rates in Asian American communities," said Julie Dang, executive director of the cancer center's Office of Community Outreach and Engagement.

The American Cancer Society (ACS) encourages women 40–44 years of age to consider getting a mammogram, and recommends annual mammograms by age 45. ACS says that by age 55, women can make the transition to mammography in alternating years or can continue annual mammograms if that seems advisable.

Participants will not only learn about breast health, but also will receive a Screen 2 Screen information kit in the mail, as well as a \$20 gift card for their time and participation. Future virtual Screen 2 Screen educational sessions and information kits will be in Chinese, Hmong, Korean and Vietnamese.

As a follow-up, a research team member will call the session participants to ask if they would like to schedule a mammogram appointment. For questions and more information on Screen 2 Screen, please email obgyncommitteecod@gmail.com or call **916-734-5371**.

Learn & Lounge series empowers adolescents and young adults during cancer treatment and beyond

Young cancer patients face unique challenges. That's why the UC Davis Comprehensive Cancer Center started an Adolescent and Young Adult (AYA) Oncology Program in 2020.

The COVID-19 pandemic, which was unfolding just as the AYA program launched, only strengthened the resolve of cancer center staff members to provide support quickly to cancer patients in their teens and early 20s.

"Only 6 to 7% of all newly diagnosed cancer patients in the U.S. are adolescents and young adults so they often fall through the cracks," said Marcio Malogolowkin, chief of pediatric hematology and medical oncology at UC Davis. "We needed to create a supportive oncology program that would address their social, spiritual and emotional needs — especially as the pandemic added new stress to their lives."

The AYA Oncology Program currently offers support for AYA patients aged 15–39. Program services include counseling, supportive care navigation, nutritional consultations, a monthly support group, and regularly scheduled program events.

In February 2021, the UC Davis Comprehensive Cancer Center AYA program teamed up with the UCLA Health AYA program to begin

Learn & Lounge, a virtual meetup that convenes monthly.

The Learn & Lounge usually starts with introductions or an icebreaker, followed by a short educational session on a topic of relevance to AYA patients and survivors. These could include things like relationships with family members and friends, school struggles, career goals or fertility problems.

"After the educational talk, there is a social hour for patients and survivors only — with no health care professionals allowed," UC Davis AYA cancer project manager Anna Rosenbaum said. "This provides an opportunity for participants to create their own safe space, including time to connect with peers and get support, or just to have fun and forget about cancer for a while."

For the social hour, participants need to be over age 18 and agree to privacy and confidentiality standards.

Attendance at Learn & Lounge has ranged from 6 to 16 participants and, post-COVID, in-person support group meetings are planned in different parts of California.

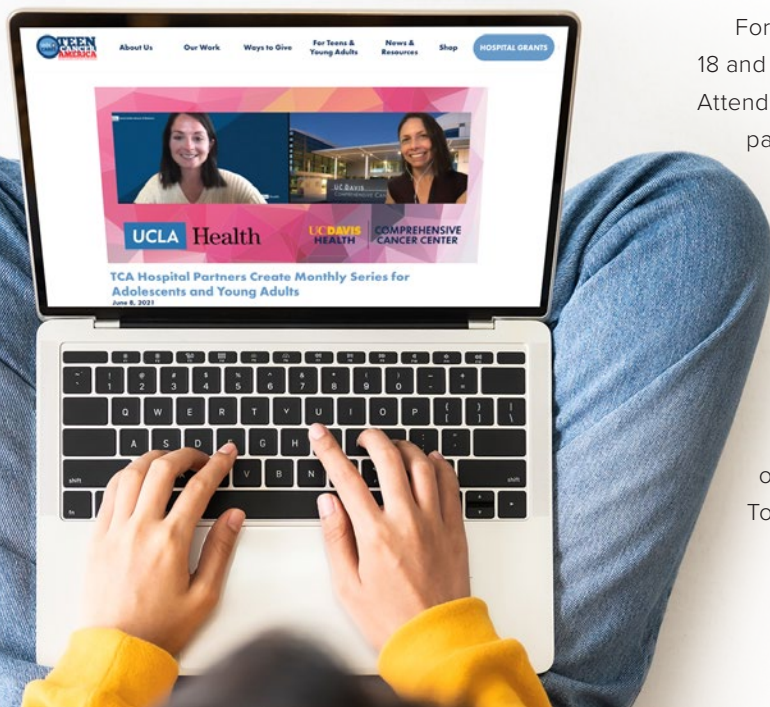
"For now, the value of meeting virtually is that participants can join us from wherever they are — whether in another city or town, in the hospital or out in the backyard," UCLA AYA cancer program manager Julia Leavitt said.

The AYA Oncology Program is funded in part by a grant from Teen Cancer America, a nonprofit organization established by Roger Daltrey and Pete Townshend of the band The Who.

There are unique challenges to having cancer as a young person

If you are between the ages of 15 and 39, we can help with:

- Fertility education and support
- Body image, sexual health and intimacy
- Strategies to cope with emotions and impact of cancer
- Disability options from work and/or school
- Connection with other young adults with cancer
- Referrals to local and national resources
- Family communication and resiliency



The Raymond Kwan
Memorial Patient
Assistance Fund



*The Kwan Family:
Raymond, Judy,
Tiffany and Kristi*

A Sacramento family helps cancer patients in need

Sacramento resident Judy Kwan said she and her husband Raymond often donated to cancer causes, particularly research. But Judy says conversations with Ray's oncologist and their younger daughter Kristi, a medical resident in Northern California, prompted them to consider helping patients in need.

Judy Kwan said the two doctors told them of patients struggling with ordinary living expenses, some even stopping treatment due to finances. "We were saddened to hear that there are patients who have financial difficulties," Judy said. It was a recurring conversation topic for the couple during his therapy for advanced colon cancer at UC Davis

Health Comprehensive Cancer Center.

After Raymond died in March 2020, Judy looked for something to ease her family's pain. Those conversations with her husband came to mind. "That

English in Hong Kong, then moved to the United States to pursue his dream of an advanced education. He worked his way through college while earning a degree in engineering at UC Berkeley

and then met Judy at San Jose State, where she studied computer science and he pursued a master's degree.

The couple moved to Sacramento in 1987, where they worked for the state and raised Kristi and Tiffany, who each have medical

careers. Kristi practices medicine at Mercy Medical Center in Redding. Tiffany is a dentist in the Natomas area of Sacramento.

Judy said that Raymond made a habit of donating money to worthy causes throughout his life. "Ray has been a very generous person," Judy said. "I am sure that this is what he would want."

The Kwan family has established the Raymond Kwan Memorial Patient Assistance Fund and Judy said she is looking forward to hearing about how the fund helps others. But right now, creating the fund is helping her. "I miss him so much," she said. "This is making me peaceful."

"We were saddened to hear that there are patients who have financial difficulties."

—JUDY KWAN

inspired me," Judy said. "I thought, why don't we do it now?"

Judy and her daughters, Kristi and Tiffany, created The Raymond Kwan Memorial Patient Assistance Fund at UC Davis Health to help pay the ordinary living expenses of patients during treatment. Social workers at the cancer center can offer gas cards, Uber gift cards, grocery store gift cards and housing assistance to qualifying patients.

Judy said the fund honors Raymond's belief that everyone deserves a chance to succeed. Raymond left China as a teenager in the aftermath of the Communist revolution of the late 1940s. He studied

"The fund honors Raymond's belief that everyone deserves a chance to succeed."

—JUDY KWAN



Helping patients cope and heal during the cancer journey

Supportive Oncology and Survivorship Program

Supportive oncology consists of numerous types of therapies to ease physical symptoms and emotional stress that can emerge during cancer treatment.

Angela Usher, manager of the Supportive Oncology and Survivorship Program at the UC Davis Comprehensive Cancer Center, says that help, ranging from counseling to managing physical discomfort, is available throughout the various stages of diagnosis and care.

“Somebody who is newly diagnosed really wants to know that they can get through this, that other people have done it,” Usher said. “People actively in treatment might be dealing with trou-

bling symptoms, they might be experiencing lymphedema, they might be dealing with physically limiting pain — for that we have palliative care, through the supportive medicine clinic, and that’s where the comfort services can be really helpful.”

Then there’s “survivorship” when treatment is ending — care to help patients face the future. “It comes back to looking at health behavior, ways for people to reclaim their lives, rebuild their strength and not be overwhelmed by the fear of cancer recurring,” Usher said.

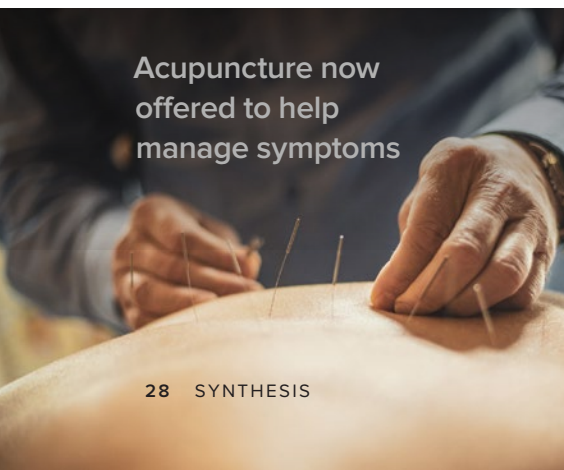
Counseling, classes and help with side effects

Counseling services are popular among patients undergoing treatment at the UC Davis Comprehensive Cancer Center. Classes and support groups

that are offered include a weekly “Writing as Healing” class to create a therapeutic outlet for self-expression. A chaplain is available for spiritual support. The Supportive Oncology and Survivorship Program team also includes dietitians to help with nutrition assessments, and medical doctors and a palliative medicine nurse to help with symptoms of cancer treatment. Also part of the program are nurse navigators who can help with a variety of patient needs, including coordinating insurance, organizing necessary medical appointments and scheduling language translators, if needed.

New physical therapy option

Patients preparing for bone marrow transplants now have an innovative physical therapy (PT) program available to them. It’s designed to prepare patients before their transplant, by building their strength. Kristen Krueger is the oncologic physical therapist spearheading the program. “It’s very important that cancer patients are as strong as they can be going into cancer treatment, because of the toll that treatment takes on them physically,” Krueger said. “Doing a thorough assessment and starting PT before treatment allows them to tolerate radiation and chemotherapy better, and also decreases the length of stay in the hospital.” Krueger said the upcoming program focuses on bone marrow transplant patients, but the goal is to expand this pre-treatment option to other cancer patients.



Acupuncture now offered to help manage symptoms

The cancer center has added acupuncture to help cancer patients manage their health and treatments. The ancient medical practice is now often used to ease side effects associated with cancer treatments. Christine Gocke is a licensed acupuncturist leading this new program in UC Davis Supportive Care Oncology Practice. “Recent studies in acupuncture clinical research have shown it’s potentially effective in treating a number of issues,” she said. Those include postoperative pain, nausea, vomiting, depression and anxiety.



Meeting the many needs of cancer patients

Oncology nurse navigators help patients and their caregivers through what can be a complicated and grueling journey. Cancer care is complex and involves multiple transitions that require fine-tuned, interdisciplinary collaboration. Some patients face financial challenges, are without a caregiver, or don't speak English, which makes a cancer diagnosis even more difficult.

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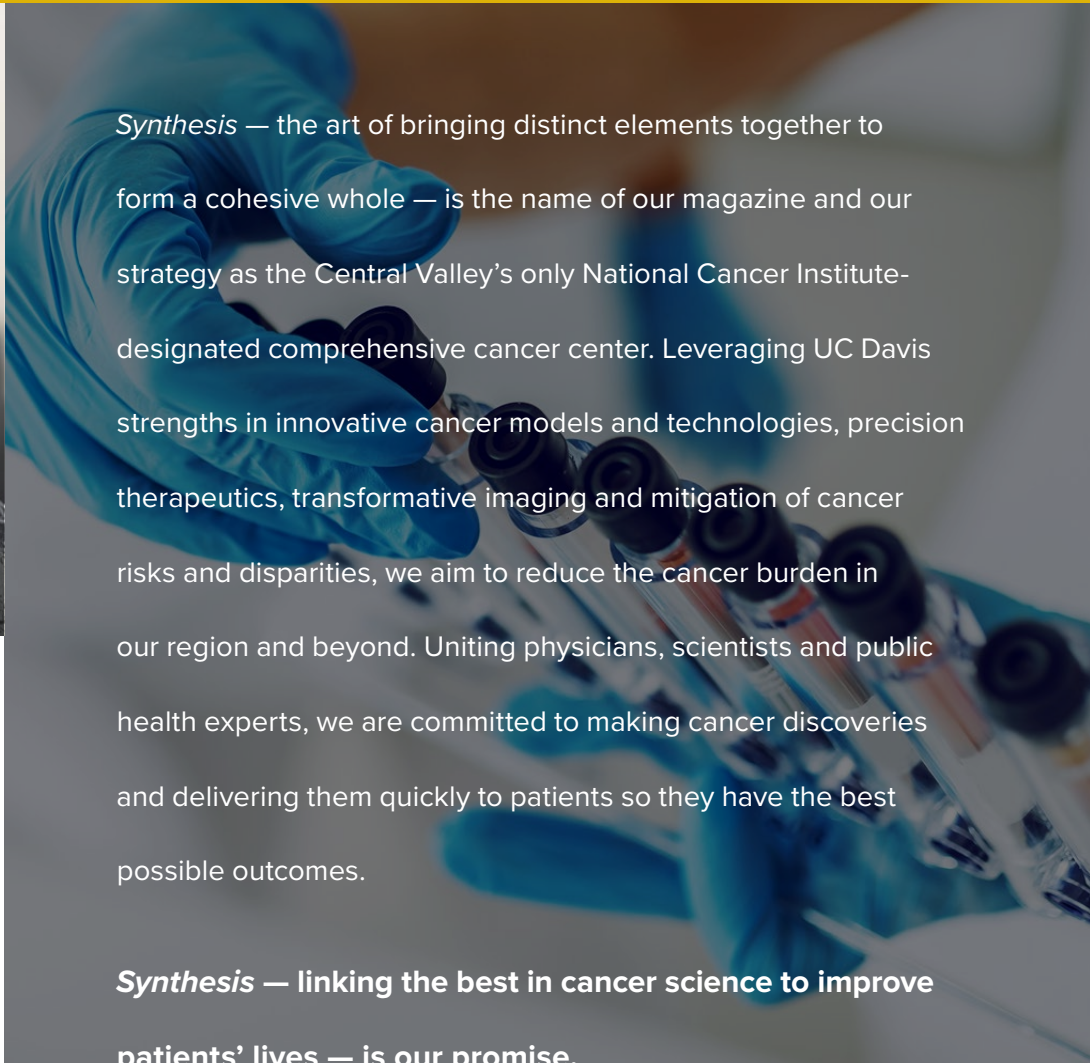
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Breaking Barriers to Beat Cancer



Synthesis — the art of bringing distinct elements together to form a cohesive whole — is the name of our magazine and our strategy as the Central Valley's only National Cancer Institute-designated comprehensive cancer center. Leveraging UC Davis strengths in innovative cancer models and technologies, precision therapeutics, transformative imaging and mitigation of cancer risks and disparities, we aim to reduce the cancer burden in our region and beyond. Uniting physicians, scientists and public health experts, we are committed to making cancer discoveries and delivering them quickly to patients so they have the best possible outcomes.

Synthesis — linking the best in cancer science to improve patients' lives — is our promise.