INNOVATIONS

Bringing you research news from the University of Hawai'i Cancer Center

SUMMER 2022

THE FUTURE IS

AT THE UNIVERSITY OF HAWAI'I CANCER CENTER

STORY ON PAGE 4 —



UNIVERSITY OF HAWAI'I CANCER CENTER

With the height of the COVID-19 pandemic receding, new challenges and opportunities are coming into focus. We are working to return our clinical trials activities to full strength. I want to recognize the efforts of our clinical research staff who have been called upon to do more with less as we lost staff and paused some trials as a result of the pandemic. We are greatly appreciative of all their hard work and are looking forward to getting clinical trials back on track. We are also focused on revitalizing our cancer screening programs. During the pandemic, many skipped going for regular cancer screening, and we are redoubling our efforts to encourage screening so that cancer can be caught early when the best chance for curative treatment.

I also want to recognize the Center's faculty and staff who have worked doggedly during the pandemic to advance research. Indeed, this year, they have already been awarded over \$20 million in federal funds for new projects to be implemented through the next five years. Finally, this month, we also said goodbye to Dr. Joe Ramos who has served the Center for decades, more recently as Deputy Director and since August 2021, as Interim Director. He has excelled in these roles and has contributed immensely to our success. He will be sorely missed.

It is an exciting time for the Cancer Center as we prepare for a new permanent director to take the lead and begin the process to renew our NCI Cancer Center Designation. This year we have also recruited several cancer research leaders. Dr. Xin Chen, a renowned liver cancer expert, joined us to co-lead the Cancer Biology Program. We also welcomed Dr. Scott Okamoto who works on preventing substance abuse among rural youth in Hawai'i and Dr. Izumi Okado who works in cancer care delivery research. This is the great benefit of having an NCI-Designated Cancer Center here—that we can have the very best researchers and physicians addressing this dreadful disease as we specifically experience it in Hawai'i and the U.S. Affiliated Pacific Islands.

Each of you are part of our Cancer Center ohana and we are deeply appreciative of all you do with us to reduce the burden of cancer in the islands.

Mahalo,

Welcome Xin Chen!

Awarm welcome to Xin Chen, PhD, new co-leader in the Cancer Biology Program! Chen joined the UH Cancer Center in March. She received her PhD in cell and developmental biology from Harvard University, and completed her postdoctoral fellowship at



Xin Chen, PhD

the Howard Hughes Medical Institute at Stanford University. Chen previously served as a Professor in Residence, Step V in the Department of Bioengineering and Therapeutic Sciences at the University of California, San Francisco.

As co-leader, Chen hopes to strengthen the Cancer Biology Program and recruit investigators with a strong research focus on cancer disparities.

Recent data indicates that Hawai'i has a significantly higher mortality rate for liver cancer compared to other states, with deaths increasing among males. Chen's research specializes in liver cancer and molecular genetics. Her purpose is to understand how mutated genes function to promote tumor development and tumor metastasis. Chen's research will help understand and target the molecular mechanisms leading to obesity-related liver cancers.



Cancer Answers is a podcast series that provides insights into current research being conducted at the UH Cancer Center, while raising public awareness about cancer risk and prevention in Hawai'i, the Pacific, and beyond.

The 10-episode debut season premiered in late April, and featured in-depth conversations with the Cancer Center's world-class researchers who are at the forefront of new cancer discoveries. Some topics discussed include cancer trends in Hawai'i, physical health and its correlation with cancer, skin cancer prevention, and the role of genes in cancer.

All episodes are available to stream on the UH Cancer Center website, Facebook, YouTube, Apple Podcasts, and Spotify.

Loïc Le Marchand, MD, PhD

Interim Director

Aloha pumehana Dr. Ramos!

Joe W. Ramos, PhD, began his journey at the University of Hawai'i Cancer Center in the summer of 2004. After serving in numerous roles over 18 years to improve cancer disparities in Hawai'i and the Pacific, he will be joining the Louisiana Cancer Research Center as CEO and Director.

While at the UH Cancer Center, Ramos worked to grow education opportunities, enhance the responsiveness of administration, and collaborate with consortium partners and the legislature to further the goals of the Center. As Interim Director, his focus was to realign the leadership team, hire new faculty to help renew the Cancer Center Support Grant, and bolster clinical trials efforts.

Ramos' scientific and administrative contributions have made a substantial impact on the UH Cancer Center and the people of Hawai'i and the Pacific. The Center appreciates his time, dedication, and efforts, and wishes him all the best as he transitions into his new role.

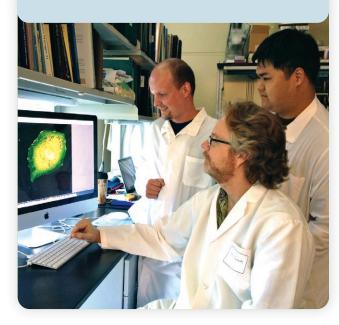
His Legacy

- Helping renew the NCI-designation (twice).
- Laying the groundwork for a 3-D organoid facility for cancer that will better represent the diverse populations of Hawai'i and the Pacific.
- Bringing consortium partners together to develop the operations of the Early Phase Clinical Research Center.
- Leading research on protein RSK, a driver of cancer invasion processes, which lays a solid groundwork for future local clinical trials on glioblastoma and melanoma.



Joe W. Ramos — The Final Say

"In my 18 years at the Cancer Center, I
have developed great collaborations and
friendships with wonderful colleagues.
Having an NCI-Designated Center in Hawai'i
means that we have the very best cancer
researchers focused on what causes cancer
here and how we can better prevent it. That is
what NCI-designation is about! I don't think
of it as a goal but rather as a proven recipe for
how to hit all the different elements to really
make an impact on cancer locally. I only see a
bright future for the UH Cancer Center!"



THE FUTURE IS BRICEHT

AT THE UNIVERSITY OF HAWAI'I CANCER CENTER

THE UNIVERSITY OF HAWAI'I CANCER CENTER IS HAVING AN EXCEPTIONAL YEAR WHEN IT COMES TO CONDUCTING IMPACTFUL RESEARCH TO ADDRESS THE NEEDS OF HAWAI'I'S UNIQUE MULTIETHNIC POPULATION. THREE NOTABLE UH CANCER CENTER RESEARCHERS RECENTLY RECEIVED RESEARCH SUPPORT OVER THE NEXT SEVERAL YEARS IN AREAS OF DIET AND NUTRITION, THE IMPACT OF COVID-19 ON MENTAL HEALTH AND SUBSTANCE USE, AND OBESITY IN KEIKI. TOGETHER, THEY HAVE RECEIVED FEDERAL FUNDING OF OVER \$12 MILLION.

IMPACTING ADULTS

Nutrition plays an integral role in human development and in the prevention and treatment of disease. However, there is no such thing as a perfect, one-size-fits-all diet. The National Institutes of Health's Nutrition for Precision Health (NPH) program will build on recent advancements in biomedical science including artificial intelligence, microbiome research, as well as the infrastructure and large, diverse participant group of the All of Us Research Program. Of the 14 sites across the U.S. selected to participate in NPH, only Hawai'i received a designated Dietary Assessment Center award of \$7 million over the next five years. Carol Boushey, PhD, MPH, RD, and her team will use advanced technological tools that combine precision dietary assessment and research translation to better understand eating behaviors, diet-disease relationships, and help develop dietary intervention programs to directly influence the health of people in Hawai'i and across the U.S.

IMPACTING YOUNG ADULTS

Pallav Pokhrel, PhD, MPH, and his team have been studying well-being and health behaviors of more than 2,000 young adults in Hawai'i since 2017. Building on this research, Pokhrel received a \$2.01 million grant from

the National Institute on Drug Abuse to examine how the COVID-19 pandemic affected mental health, tobacco, and other substance use among the young adults in this cohort. Pokhrel's team will compare data collected now with data collected from the same research participants they studied pre-COVID to identify changes in and potential facilitators of change in these areas. Tobacco prevention and cessation and other health promotion programs developed in the future based on this research could be particularly meaningful and effective in Hawai'i because the data that informed them come from research participants who mirror the state's racial and ethnic diversity.

IMPACTING KEIKI

Metabolic diseases such as obesity are the leading cause of deaths among adults. Being overweight or obese is linked with a higher risk of getting 13 types of cancer. Obese children are more likely to become obese adults, and adolescents have their most rapid weight gain before the age of five and are usually obese by then. Pediatric obesity research is limited due to the lack of appropriate body composition technologies. To address the gap, the National Institute of Child Health and Human Development awarded John Shepherd, PhD, \$3.1 million to develop new, age-appropriate technologies to examine links between body composition and metabolic risk factors for developing cancer among children from birth to five years in Hawai'i and the Pacific.

Ho'ōla

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If you'd like to learn more about the Friends and support us with a donation, please visit https://friendsofuhcc.org

Penelope Rogers

President's Message

Aloha, friends and supporters of the UH Cancer Center!

2022 is just flying by. At the start of the year, I chose one word to represent 2022, "BUILD." I hope that together we can build on the ways we support the Center.

Before I continue, I want to say a big thank you to Monica McLaren, outgoing Friends Board President, for her great leadership, especially during an unusual and uncertain time.

Also, mahalo to Dr. Joe Ramos for his enthusiastic leadership as Interim Director. We wish him well in his new position at the Louisiana Cancer Research Center.

As we await a new Center Director, the Friends continue to build on and support key programs with your help:

Students – Seed money for a successful summer student intern program resulted in a grant.

> We now fund a new program, the three-year graduate student fellowship.

- Tickets for the Cure Program that covers the cost of flights and alleviates the financial burden for clinical trial patients on the neighbor islands.
- Early Phase Clinical Research Center Support for the Center and sponsorship of a meditation room.
- Community awareness Ideas and plans to improve the awareness of the Center and involve the community.
- Legislation Support for legislation that promotes cancer research in Hawai'i. We raise our voices about legislation that negatively impacts the Center or the community.

Please join our efforts to build a strong UH Cancer Center for Hawai'i.

Mahalo,

Christopher M. Yasuma
President, Friends of the UH Cancer Center

CHRISTOPHER M. YASUMA PROFILE

Like many of us, cancer has impacted Christopher Yasuma's immediate family, so he is dedicated to fighting the disease. Yasuma is the new President of the Friends of the UH Cancer Center and has been a board member since 2017. He is also on the executive board of the Hawai'i Children's Cancer Foundation.

Yasuma is Vice President of the Corporate Banking Division at First Hawaiian Bank. In his free time, he enjoys surfing, playing music, traveling to Japan, and spending time with his family. He and his wife Marisa, have one daughter.

Join a Study

There are many ways to support the UH Cancer Center in addition to making a donation. One way is to participate in a research study. The Center has various research studies that healthy individuals can participate in, including studies on breast cancer, colon cancer, exercise, and meditation.

For over 25 years, Earl Stoner, Director of S&F Land Co. and a former Friends Board President, has participated in the Multiethnic Cohort (MEC) Study. The MEC study, which began in 1993, follows a group of 215,000 individuals over time to observe how members who develop cancer and other conditions differ in risk factors.

Early in the program, Stoner provided small blood and urine samples. Every five years, he answers a lengthy questionnaire about his health. Earl said he participates in the study because of its "collaborative nature, the sheer numbers of participants, and impact on cancer research."

THE MEC DATA HAS RESULTED IN MORE THAN 900 PUBLISHED SCIENTIFIC ARTICLES

ON A WIDE RANGE OF TOPICS INCLUDING SMOKING, DIET, AND PHYSICAL ACTIVITY.

Monica McLaren, Director of Instructional Design at the Sullivan Family of Companies and a former Friends Board President, also volunteered for a Center study—Tomosynthesis Mammographic Imaging Screening Trial Study (TMIST).

TMIST is a clinical trial that will help the Center develop strategies to tailor breast cancer screenings to the risks of individual women. To participate, women must be 45-74 years of age and scheduled for a screening mammogram.

McLaren said, "As a mother with a daughter and numerous nieces, I am excited to be able to do something that might make a difference in their and many other lives."

TO LEARN MORE ABOUT AND PARTICIPATE IN A STUDY, GO TO

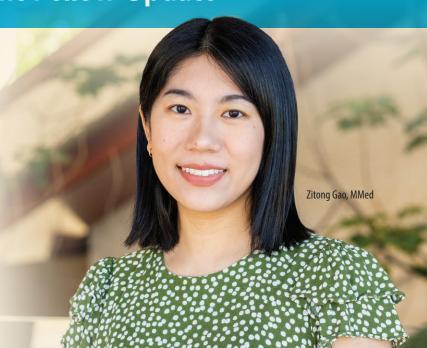


uhcancercenter.org/community-outreach/participate-in-a-research-study

Friends' Graduate Student Fellow Update

Zitong Gao, MMed, the Friends of the UH Cancer Center scholar, explained her impressive work on tRNA-derived fragments in non-small cell lung cancer (NSCLC) to the Friends board during the April board meeting.

Also in April, Gao received a UH Cancer Center Travel award to present her work on six potential biomarkers for NSCLC diagnosis and prognosis at the American Association for Cancer Research Annual Meeting in New Orleans, Louisiana, under the mentorship of Youping Deng, PhD. "It was a valuable experience for me to introduce my research idea to others, as well as obtaining opportunities for networking," said Gao.



Developments in the Population Sciences in the Pacific Program

Sung-shim (Lani) Park, PhD, MPH, and Pallav Pokhrel, PhD, MPH, have been serving as co-leaders of the Population Sciences in the Pacific Program for the past eight months. Park, a molecular epidemiologist, studies genetic, behavioral, and environmental risk factors of cancer, while Pokhrel, a behavioral scientist, has expertise in community-based psychosocial research focused on cancer prevention.

The Population Sciences in the Pacific (PSP) Program's mission is to understand and eliminate racial and ethnic disparities in cancer and to reduce overall cancer incidence and mortality in Hawai'i and the Pacific. To meet this goal, members of the PSP Program conduct research in cancer epidemiology and cancer prevention, with a strong focus on meeting the immediate needs of populations in Hawai'i and the Pacific.

As co-leaders, Park and Pokhrel are actively working to recruit new faculty and increase strategic collaborations to further the mission of the program. Recent additions to the PSP team include Izumi Okado, PhD, appointed as Assistant Researcher and Professor, and Scott Okamoto, PhD, joining as a new faculty Researcher and Professor. Okamoto's research focuses on preventing tobacco use



Sung-shim Park, PhD, MPH



Pallav Pokhrel, PhD, MPH

among youth in rural communities, and Okado works in cancer care delivery and rural health.

In addition, the co-leaders foster collaborations between members of PSP and other programs within the Cancer Center, the wider UH Mānoa academic community, and beyond. A current inter-programmatic collaboration with the Cancer Biology program examines lung tumors to explain differences in lung cancer survival rates. An upcoming research study, in collaboration with University of California, San Francisco, examines the impact of structural racism on change in smoking behaviors and lung cancer risk.

Other PSP research is focused on understanding the effects of e-cigarette marketing trends on Hawai'i young adults' tobacco use behavior. Program collaborations with the University of Guam may result in an evidence-based e-cigarette and tobacco-use prevention program for the Pacific Islander youth which can be translated across Hawai'i and the Pacific

Islands. These collaborations drive PSP to gain a richer, more in-depth understanding of cancer through multidisciplinary research approaches, impacting Hawai'i and beyond.

Hawai'i Tumor Registry releases updated cancer statistics

The UH Cancer Center's Hawai'i Tumor Registry, responsible for cancer surveillance in the state of Hawai'i, recently released updated cancer statistics in *Hawai'i Cancer at a Glance*, 2014-2018. This publication informs the community about the impact of cancer across the state, and includes statistics about new cancer cases, cancer survivorship, and mortality.

Data found in the publication show that an average of 7,393 Hawai'i residents are diagnosed every year with invasive cancer, and 2,393 individuals die of cancer. At last count, 66,779 Hawai'i residents are living with cancer, including those newly diagnosed and those diagnosed with invasive cancer in the past. This is an increase of almost 9,000 survivors since 2016. Lung cancer continues to be the leading cause of cancer deaths in the state. Breast cancer

remains the most frequently diagnosed cancer among women, while prostate cancer is the most common cancer among men.

"Statewide cancer incidence and mortality data are critical for understanding the impact of cancer on the people of Hawai'i

and for establishing strategies and priorities for cancer prevention, early detection, treatment, and survivorship," said Brenda Hernandez, PhD, MPH, Hawai'i Tumor Registry Principle Investigator.

Learn more about cancer data in *Hawai'i Cancer at a Glance,* 2014-2018 by visiting uhcancercenter.org.

LIVER AND BREAST CANCER INVESTIGATOR-INITIATED STUDIES

nvestigator-initiated trials are "homegrown" ideas from researchers who are active in labs and clinical settings. Jared Acoba, MD, and Jami Fukui, MD, community physicians, are currently conducting investigator-initiated studies to improve outcomes for their patients with liver and breast cancer.

To identify new treatment interventions for patients living with liver cancer, Acoba's study uses immunotherapy agents to treat advanced hepatocellular carcinoma—a type of liver cancer. For more information about this study, contact Erin Fukaya at EFukaya@cc.hawaii.edu or (808) 691-8577.

Fukui is conducting a lifestyle intervention for breast cancer survivors within two years of diagnosis, who are interested in improving their quality of life through exercise. To learn more about the breast cancer study, contact Matthew Toyama at MToyama@cc.hawaii.edu or (808) 564-3996.



DOES ABDOMINAL FAT INCREASE CANCER RISK?

The Healthy Diet and Lifestyle Study II, led by Loïc Le Marchand, MD, PhD, and Carol Boushey, PhD, MPH, RD, investigates whether changes in dietary habits, along with regular physical activity, affects the amount of fat stored in the body. This information may provide an approach to reducing risk of chronic diseases, like cancer, related to excessive weight gain during adulthood. For more information about this study, email hdls2@cc.hawaii.edu or call (808) 237-3901.

HAWAI'I'S GENE HUNTER

Michele Carbone, MD, PhD has been at the forefront of genetics research in Hawai'i, and his work strongly resonates with people around the world. Dubbed the Gene Hunter of Hawai'i in a May 2022 American Association for Cancer Research article, Carbone took a deep dive into mesothelioma research in 1997, exploring villages in Cappadocia, Turkey, where a malignant mesothelioma epidemic caused half of all deaths. Initially, erionite, a cancer-causing mineral, was thought to be the cause of mesothelioma in these villages.

To solve this mystery, Carbone secured a \$10 million grant from the National Cancer Institute (NCI), and put together a multidisciplinary team. Working with local doctors in Cappadocia, the team identified a mutated gene that was causing an increase in mesothelioma among certain families. Carbone named the disease the BAP1 cancer syndrome.

Michele Carbone, MD, PhD

Carbone's research led to identifying several U.S. families with the mesothelioma predisposition. Currently, Carbone, along with Haining Yang, MD, PhD, are studying 98 American families affected by the BAP1 cancer syndrome. In 2019, the NCI opened two clinical trials for patients and families carrying the BAP1 mutation.

In addition, Carbone and his team, along with Environmental Protection Agency scientists, investigated whether the presence of erionite in the U.S. posed a public health threat if disturbed during development or mining. In North Dakota, gravel containing erionite was used to pave rural roads and, when kicked up by traffic, posed a public health risk. These efforts resulted in a state-wide policy to ban the use of gravel sourced from areas that contain erionite.

The BAP1 cancer syndrome discovery of increased risk for developing mesothelioma has led to studies on how the syndrome also affects other cancers. Carbone and Yang lead an international team to help identify preventive, early detection, and therapeutic strategies for cancers affected by BAP1 cancer syndrome, nationally, and internationally.

To read the full story, visit: go.hawaii.edu/GTx





The UH Cancer Center welcomed a new cohort of summer interns as part of the training program Cancer Research Education, Advancement, Training and Empowerment (CREATE). The program, currently in its second year, is supported by a five-year competitive grant from the National Institutes of Health and builds on over 20 years of summer undergraduate training at the Cancer Center.

The goal of CREATE is to offer enhanced research training experiences to help science-minded students emerge as the next generation of cancer researchers in Hawai'i and the Pacific. The internship program runs from May 31 to July 29, and is designed for undergraduate sophomores and juniors. In addition to the summer program, CREATE offers first-year graduate students the opportunity to gain research experience for one semester.

To be eligible for the internship program, students must be residents of Hawai'i or Guam, and affiliated with an accredited college or university. This year, out of 59 applicants, 20 undergraduate students were selected. Each student is partnered with mentors from the Center's faculty to work on projects in two program areas: Cancer Biology and Population Sciences in the Pacific.

CREATE interns participate in multidisciplinary seminars, workshops, and career development sessions to gain in-depth knowledge and hands-on experience with the Center's ongoing research. The CREATE program demonstrates the UH Cancer Center's commitment to provide innovative training and mentorship experiences to individuals seeking careers in cancer research.

MY BROTHER'S LIFE OF EXTRAORDINARY KINDNESS AND GENEROSITY by Ken Lum

Bernard and Pamela Lum's blind date led to 33 years of traveling internationally, attending UH basketball games, sharing meals as aspiring foodies, seeing foreign films, and going for long walks. Before cancer took their lives five years apart, Bernard and Pamela Lum reserved portions of their estate for cancer research and for educating Hawai'i's health care professionals.

My brother Bernard was many things—modest, wise, courageous, and community-minded, for starters. When he knew his nine-year battle with

cancer was ending, he invited family to visit him, to share memories and say goodbye. I will never forget his final advice: live in the moment. Don't sweat the small stuff. Be kind and generous in all things big and small. You never know the difference you can make in someone's life.

That was Bernie. In his self-written obituary, he said, "Like most, I was just a hard-working, contributing member of our community." In his remarkable life, Bernie made a difference for others. He continues to do so through several



 $Bernard\ and\ Pamela\ in\ Japan,\ 2015.$

UH endowment funds, some in his name and some in the name of his wife Pam, who also passed due to cancer.

He often said although it was too late for him and Pam, he was joyful imagining countless ways he could make a difference for someone else, even after his time on earth. For this reason, Bernie and Pam designated funds for cancer research and for scholarships—at JABSOM and in nursing at UH Hilo. Because they were foodies, they also established a culinary arts scholarship at Kapi'olani Community College.

These decisions were not morbid for them. I remember my brother's joy, even in his weakened state, knowing he could make a difference for people he would never meet.

Although I miss him terribly, his spirit lives when we remember, among other things, to be kind and generous in all things big and small.

To support the Cancer Center, contact Lynne Wooddell at (808) 356-5757 or lynne.wooddell@uhfoundation.org



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Innovations is a community publication of the University of Hawai'i Cancer Center, produced with support from the Friends of the University of Hawai'i Cancer Center. If you have comments or suggestions, please call 808-586-3010 or visit www.uhcancercenter.org.

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An Equal Opportunity/Affirmative Action Institution



Clinical trials are research studies aimed at improving the prevention, diagnosis, and treatment of cancer. They are the driving force behind the major advances made in cancer care. Findings from clinical trials have resulted in more cancer patients being cured, living longer, and experiencing a better quality of life.

IN HAWAI'I

Hawai'i's diverse population continues to serve as a fertile ground to study all aspects of cancer. Establishing a robust clinical trials program is one of the most effective ways of expanding knowledge of cancer in our unique population.

The UH Cancer Center has been actively involved in the conduct of clinical trials for over four decades and remains committed to making clinical trials accessible to all the residents of Hawai'i. Currently, there are over 80 clinical trials being conducted at the Cancer Center. Over the past five years, more than 14,600 people, including cancer patients, have participated in UH Cancer Center clinical trials. Clinical research and clinical trials are an integral part of the

Cancer Center's mission to reduce the burden of cancer and to improve the lives of cancer patients and their caregivers.

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In future issues of *Innovations*, learn more about the myths and benefits of, and opportunities to participate in clinical trials.

