



UNIVERSITY OF HAWAII
CANCER CENTER

2022 Annual Report

H O ' Ō L A M A N A M A N A

DIVERSITY

HEALTH

KNOWLEDGE

NCI

Cancer Center

A Cancer Center Designated by the
National Cancer Institute

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Ho'ōla Manamana

The UH Cancer Center fosters diversity, health, and knowledge through our mission to reduce the burden of cancer through research, education, patient care, and community outreach with an emphasis on the unique ethnic, cultural, and environmental characteristics of Hawai'i and the Pacific.

2022 ANNUAL REPORT

UNIVERSITY OF HAWAII CANCER CENTER

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Director

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DIRECTOR'S MESSAGE

During 2022, the University of Hawai'i Cancer Center made several adjustments in the wake of the COVID-19 pandemic while searching for a permanent director. Thanks to the incredible dedication of everyone, the Center remained focus on its mission and, indeed, achieved significant progress.

As part of COVID-19's "Great Resignation" movement by which a large number of clinical professionals at U.S. cancer centers left research to work in healthcare, the UH Cancer Center Clinical Trials Office (CTO) experienced a tremendous staff turnover, with a low in Spring 2022 when only half of the staff remained. The CTO, under the exceptional leadership of Dr. Jonathan Cho, has made tremendous strides in rebuilding its programs. This was only possible through the hard work of many people, including the remaining CTO staff, the HR and administrative staff, and retired CTO personnel who generously agreed to come back to train the new staff. All these individuals have been an inspiration for the entire Center.

In the fall, we successfully completed the search for a new director, Dr. Naoto Ueno, who joined us in mid-December. Dr. Ueno is a breast cancer oncologist who relocated from the University of Texas MD Anderson Cancer Center. He is internationally renowned in pre-clinical and clinical research. It is hard to imagine a better-suited individual to take clinical research in Hawai'i to a new level. Our vision, shared with our partners, remains to improve cancer care by bringing new treatments to Hawai'i, considering our unique setting and community needs, and addressing the shortage of oncology professionals in the state.

Earlier in the year, we also recruited Dr. Xin Chen, an internationally renowned liver cancer researcher who brings her expertise to bear on the high incidence of this lethal malignancy in the Pacific.

The UH Cancer Center is the only one of the 71 NCI-Designated Cancer Centers in the nation that is completely focused on reducing the cancer burden in Hawai'i and the U.S. Associated Pacific Islands.



Loïc Le Marchand, MD, PhD

In 2022, UH Cancer Center faculty were again very successful in competing for new funding. They brought to the University of Hawai'i over \$45 million in federal grants for new research to be conducted over the next five years. We also strengthened programs directly serving our underserved communities by creating the Office of Community Outreach and Engagement which is led by Dr. Kevin Cassel, who has over 25 years of experience practicing cancer education research in Hawai'i. Finally, the faculty continued its educational mission, supervising students and research trainees.

I was privileged to lead the UH Cancer Center as Interim Director for almost six months. I am honored to have served this wonderful community of faculty, staff, and students, along with our partners in Hawai'i and the Pacific, all working toward the common goal of eliminating the suffering and mortality from cancer in our islands.

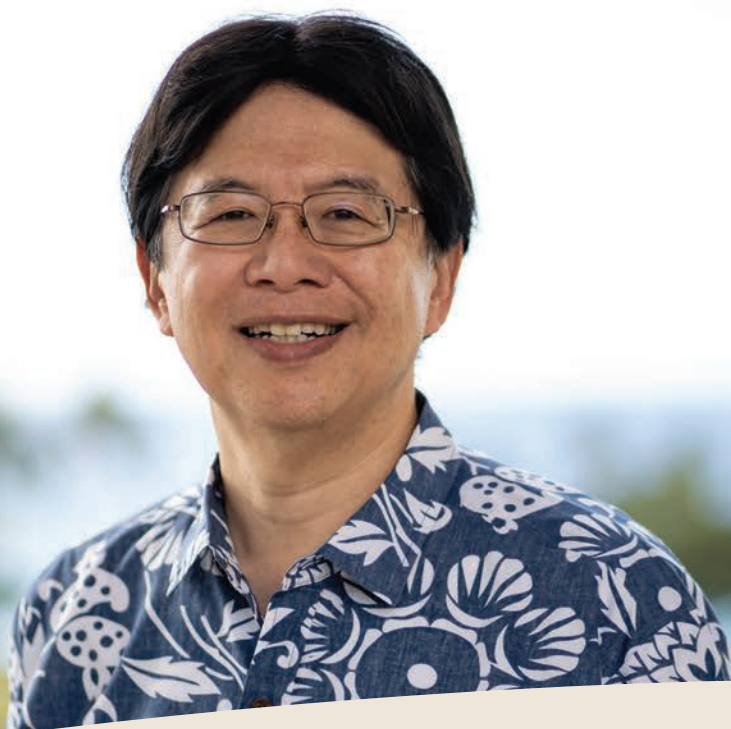
Mahalo!

A handwritten signature in black ink, appearing to read "Loïc", followed by a horizontal line.

Loïc Le Marchand, MD, PhD
Interim Director

WELCOME

INTRODUCING THE NEW UNIVERSITY OF HAWAI'I CANCER CENTER DIRECTOR



**NAOTO T. UENO,
MD, PhD**

UH CANCER CENTER
DIRECTOR

“

The UH Cancer Center already works closely with the community and our healthcare systems to reduce cancer patients' suffering through our novel strategies and advanced research.

I would like to see us build on these efforts.”

- NAOTO T. UENO

In mid-December, after an extensive and anticipated search, the University of Hawai'i Cancer Center selected and welcomed **Naoto T. Ueno, MD, PhD**, an internationally renowned leader, physician, and researcher, as director.

His vision is to make the UH Cancer Center a national and international leader in treatment and care development that will provide access to the latest cancer treatment to the people of Hawai'i and beyond. “We will impact not only patients in our region—Hawai'i and the Pacific—but also internationally,” said Dr. Ueno. “UH Cancer Center will be known for our high quality standard of care that, along with our research, will create a stronger connection between the United States and Asia.”

Dr. Ueno most recently served as the executive director of the Inflammatory Breast Cancer Research Program at the University of Texas MD Anderson Cancer Center. His research focus is inflammatory breast cancer—the most lethal and aggressive form of breast cancer—and is widely regarded for his preclinical development and research efforts that translate into clinical trials.

Dr. Ueno is one of the very few cancer physician scientists with a unique, comprehensive view of healthcare as a clinician, a researcher, and a two-time cancer survivor. This experience is why he is passionate about patient-centered research-driven clinical care. “Being a cancer survivor provided me with a unique understanding because it is an important perspective you can only have if you have actually experienced life with cancer and survived,” he said.

WELCOME TO THE CANCER BIOLOGY PROGRAM

The University of Hawai'i Cancer Center welcomed **Xin Chen, PhD**, as the interim co-leader of the Cancer Biology program in March. Dr. Chen specializes in liver cancer and studies the structure and function of genes and cell communication during liver cancer growth to develop new therapies to treat this disease.

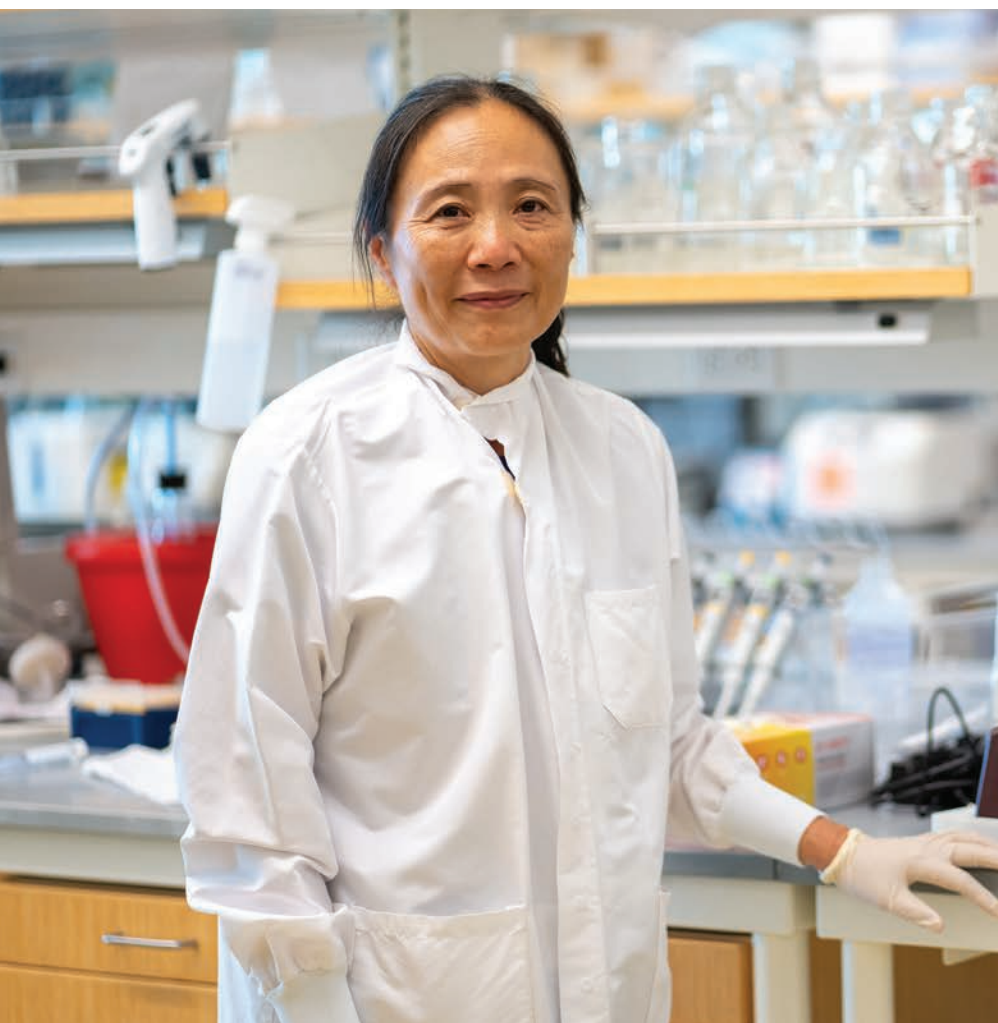
Hawai'i has significantly higher mortality rates for liver cancer, with deaths increasing among males. Dr. Chen brings her expertise to the table, helping the UH Cancer Center develop novel therapies to reduce deaths by liver cancer.

Dr. Chen received her doctorate in cell and developmental biology from Harvard University and completed her postdoctoral fellowship at the Howard Hughes Medical Institute at Stanford University. She previously served as a Professor in Residence, Step V in the Department of Bioengineering and Therapeutic Sciences at the University of California San Francisco.

XIN CHEN, PhD

UH CANCER CENTER
INTERIM CO-LEADER

Cancer Biology Program



“

Our lab studies molecular genetics and signaling pathways during liver cancer growth to develop new therapies to help treat those affected in Hawai'i by this deadly disease.”

- XIN CHEN

UPDATED CANCER STATISTICS BY THE HAWAI'I TUMOR REGISTRY

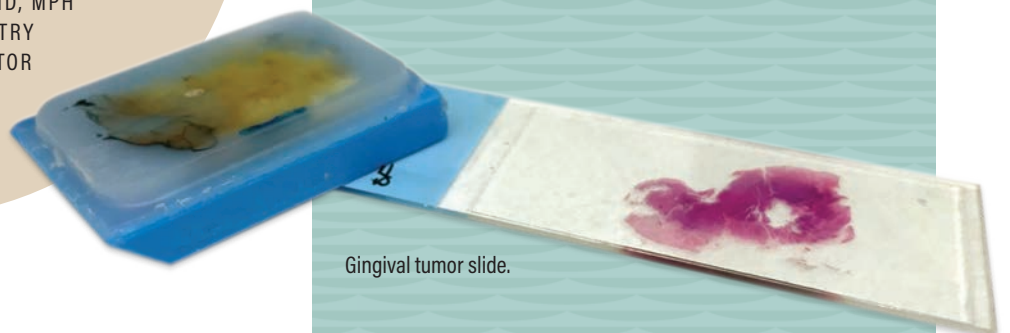
Last spring, the UH Cancer Center's Hawai'i Tumor Registry (HTR) released updated cancer statistics in *Hawai'i Cancer at a Glance, 2014-2018*. This publication, released every few years, informs the community about the impact of cancer across the state of Hawai'i, and includes statistics about new cancer cases, cancer survivorship, and mortality. Data from this report drives research at the UH Cancer Center, determining which cancers and populations are affected the most.

The HTR is responsible for cancer surveillance in the state, and collects confidential data on each cancer diagnosis, treatment, and outcomes of patients in Hawai'i. The HTR has provided incidence and survival data on all cases of cancer in Hawai'i since 1973. It is a funded registry of the National Cancer Institute Surveillance Epidemiology and End Results (SEER) Program—one of only 22 registries nationwide.

“

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.”

— BRENDA HERNANDEZ, PHD, MPH
HAWAI'I TUMOR REGISTRY
PRINCIPAL INVESTIGATOR



Gingival tumor slide.

2014-2018 HAWAI'I CANCER DATA

Annually, an average of **7,393** Hawai'i residents are diagnosed with invasive cancer.

2,393 individuals die from cancer each year.

In 2018, there were **66,779** Hawai'i residents living with cancer.


Breast cancer remains the most frequently diagnosed cancer among women.

Prostate cancer is the most common cancer among men.

Lung cancer continues to be the leading cause of cancer death in the state.

COMMUNITY OUTREACH

ADDRESSING INNOVATIVE CANCER RESEARCH WITH *CANCER ANSWERS*



Cancer Answers host, Haider Hussain, interviews Dr. Erin Bantum.

In the spring, the University of Hawai'i Cancer Center expanded our outreach efforts by launching a podcast series titled *Cancer Answers*. This series shared the latest research being conducted at the UH Cancer Center that benefits Hawai'i's residents through a one-on-one talk story with world-class UH Cancer Center researchers.

The podcast engaged listeners by providing insights into cutting-edge cancer research and raising awareness about cancer prevention tips and cancer disparities in Hawai'i and the Pacific. The series was an innovative way of reaching the community, especially those on the neighbor islands and beyond.

The series consisted of ten weekly episodes, and showcased a UH Cancer Center researcher specializing in different types of cancer. Topics ranged from mental wellness, betel nut use, dietary guidelines, and the participation of children in cancer clinical trials.

During this inaugural year, *Cancer Answers* drew over 5,200 listeners on major social and digital distribution platforms. The most popular episode, The Role of Genes in Cancer, featured Dr. Michele Carbone, Director of Thoracic Oncology at the UH Cancer Center who is at the forefront of genetic research and mesothelioma.



Shra M. Kedi



Shra with community members at St. Stephen's Episcopal Church in Wahiawā.

ENGAGING PACIFIC ISLANDER POPULATIONS TO COMBAT COVID-19

In Hawai'i, Pacific Islanders represent only 4% of the population but account for nearly 20% of all COVID-19 cases. Pacific Islanders suffer from higher rates of coexisting medical conditions such as obesity, hypertension, diabetes, cardiovascular disease, and cancer which are known to increase the risk of poor COVID-19 outcomes, and account for 22% of all COVID-19 deaths. The most affected groups are Chuukese, Samoans, and Marshallese.

In collaboration with Puipuia le Ola (a Samoan phrase for "protecting life"), UH John A. Burns School of Medicine, and other community partners, the UH Cancer Center Office of Community Outreach and Engagement (COE) were mobilized to help recruit Pacific Islander participants to assess knowledge and understanding of COVID-19 and testing.

UH Cancer Center COE Community Research Associate Shra M. Kedi was a former public health worker in the Marshall Islands for 20, years and has a strong network in the Marshallese and Micronesian communities in Hawai'i. "Trust is everything," said Shra. "People would rather talk to their own people, a leader, or a pastor, than talk to you. Once you lose their trust, it's hard to get it back, and they will tell their friends and family."

In 2022, Shra participated in community events where she staffed a booth to provide COVID-19 education, and recruit people to participate in the study. The ongoing study includes a survey, capturing demographic information and assessing the participant's knowledge of the virus, and distribution of educational flyers and brochures. Additionally, the participant is given an onsite COVID-19 test.

“

Many people are scared at first and don't want to participate in the study. They think that they are going to be a guinea pig or that they will need to give blood. But once they see that it is okay, they will get family members and bring them to the booth the same day”

- SHRA M. KEDI

REDUCING CULTURAL GAPS IN HEALTHCARE

Since 2003, the National Cancer Institute has awarded over \$14 million to support the collaborative efforts of the University of Hawai'i Cancer Center and the University of Guam through the Pacific Island Partnership for Cancer Health Equity (PIPCHÉ). PIPCHÉ aims to reduce the impact of cancer on Pacific Islanders in Hawai'i, Guam, and the U.S. Affiliated Pacific Islands. Funds from the grant have been used to develop and maintain the research infrastructure, provide research training for students and early-career scientists, and engage communities in outreach activities to advance knowledge, awareness, behavior change, and public health.

The UH Cancer Center's Community Outreach Core (COC), a subset of PIPCHÉ, was formed to liaise between researchers, community partners, and the communities they serve. The long-term goal of the COC is to reduce barriers leading to cancer disparities to achieve health equity, partly by assisting in community-based participatory and community engagement strategies.

One of the COC's initiatives addresses the cultural gap between physicians and their Pacific Islander patients. Cultural competency is the ability to understand, interact, and work well with people of different cultures and ensure quality in health care among different cultural groups.

In 2022, the COC designed a cultural competency training, "Improving Quality of Health Care Through Cultural Competency and Understanding Cultural Differences" for healthcare providers and staff. Training was conducted at Federally Qualified Health Centers including those located in Waikiki and Wahiawā.

"Our outreach work highlights Pacific Islander population healthcare seeking behaviors, which often considers the community or family as a paramount part of their overall health," said Mark Willingham, Jr., Community Health Educator with the UH Cancer Center's Community Outreach Core. "Providing clinicians with knowledge of Pacific Islander population-focused cultural perspectives and identifying ways to help meet the challenges they face in seeking care is just part of our efforts to improve health equity for this group."

The training exemplifies the use of cultural competency concepts in medical offices, professions, and organizations. It covers linguistically appropriate services and Pacific Islander culture, values, beliefs, and perspectives on healthcare.



Mark Willingham, Jr., MS

EDUCATION

PROMOTING INTERDISCIPLINARY RESEARCH & EDUCATION

The UH Cancer Center collaborates and fosters interdisciplinary research projects that allow students of different fields to excel in their education and careers. Under the mentorship of **John Shepherd, PhD**, researcher and Interim Deputy Director/Chief Scientific Officer, doctoral students Lambert Leong and Devon Cataldi conduct research to find the most innovative solutions to reduce the burden of cancer for the people of Hawai'i and the Pacific.

DEVON CATALDI, MS, ATC

DOCTORAL CANDIDATE

Kinesiology and Rehabilitation Science

In June 2022, **Devon Cataldi**, a kinesiology and rehabilitation science doctoral candidate, received a UH Cancer Center Travel Award to present his dissertation research at the annual Quantitative Musculoskeletal Imaging meeting, an international conference held in Noordwijk, Netherlands. The UH Cancer Center Travel Award provides funding for students to present their cancer-related research at peer-reviewed conferences to gain valuable experiences, further their education, broaden their network, and prepare them for a career in cancer research.

Body composition is a term used to represent the body's basic compartments: fat, bone, muscle, and water—all essential components used to evaluate the nutritional status of various metabolic diseases and cancers. Devon conducts lifestyle intervention research to study how different body composition techniques are used and how these metrics can be used to help cancer patients.

Devon focuses on assessing body composition, muscular strength and function, nutrition, and hydration status within different populations in Hawai'i to determine risk of various metabolic diseases and cancers. His dissertation research encompasses an athletic population called the Da Kine study and in part, a general population study called *Shape Up!* Adults, Kids, and Keiki. Both studies utilize clinical and research-grade body measurement technology at the UH Cancer Center to provide the most accurate body composition results.

Because there is a lack of body composition research on the unique multiethnic population of Hawai'i and the Pacific, Devon hopes that his efforts at the UH Cancer Center will provide accurate techniques for researchers and healthcare providers to properly assess a patient's body composition, especially in the area of infant body composition, where research and data collection are limited.





LAMBERT LEONG, MS

DOCTORAL CANDIDATE

Molecular Biosciences and Bioengineering

Lambert Leong, a molecular biosciences and bioengineering doctoral candidate, is investigating medical imaging biomarkers—distinguishing visual signals and patterns—of cancer using Artificial Intelligence (AI) methods.

One of the projects Lambert and his team are working on involves the Hawai'i and Pacific Islands Mammography Registry (HIPIMR), which contains breast imaging and relevant risk information specific to Hawai'i women. His work involves developing breast cancer AI models which are aimed at reducing the burden of cancer through an improved understanding of risk factors in women of diverse age and ethnic groups. Existing risk models have been developed using predominantly Caucasian populations and do not account for the unique ethnic populations of Hawai'i and the Pacific, resulting in successful disparities.

These types of projects require hundreds of thousands to millions of images to be stored and processed.

Building AI also requires large amounts of computation to deal with both the complexity and the volume of image data. The UH Cancer Center houses state-of-the-art servers which enable Lambert and his team to efficiently build AI. “An AI model built on these servers, which takes about a couple days, would take weeks or even months to build on a normal consumer-grade computer/laptop,” said Lambert.

There were significant advancements for the HIPIMR in 2022. A massive team effort resulted in the aggregation of data from community partners which included Hawaii Diagnostic Radiology Services and The Queen's Medical Center, and an agreement to initiate transfers with Hawai'i Pacific Health in 2023. In addition, the HIPIMR successfully linked with the Hawai'i Tumor Registry and implemented active data transfers, where new patient cases are received weekly. This effort has resulted in over one million images making the UH Cancer Center the ideal place to develop robust AI solutions to address disparities in Hawai'i and the Pacific.



GUAM STUDENTS PARTICIPATE IN CREATE PROGRAM

The Cancer Research Education, Advancement, Training, and Empowerment (CREATE) program utilizes the knowledge and talents of the University of Hawai'i Cancer Center's faculty to mentor undergraduate and graduate students living in Hawai'i and the Pacific. The ten-week program provides students with the opportunity to conduct research within a single academic discipline. Students also participate in seminars that incorporate multiple academic disciplines, workshops, and career development sessions. The goal is to reinforce the student's intent to graduate with a science degree, and consider a career that addresses the burden of cancer in Hawai'i and the Pacific.

This past summer, the UH Cancer Center hosted its third CREATE cohort consisting of 20 undergraduate students. Joining the program from the University of Guam were Alessandra Cuevas, Jerson Monton, and Paul Dumaraos, premedical students majoring in



Above photos: 2022 CREATE Summer Interns

biomedical sciences. Each student was paired with a faculty member from the UH Cancer Center's Population Sciences in the Pacific Program and conducted a research project under the guidance of their mentor. At the end of the program, students presented their research findings to their peers, faculty, and staff during a poster session.



JERSON MONTON

MENTOR: Pallav Pokhrel, PhD, MPH

PROJECT TITLE: *Betel-Nut Use Patterns Among Adolescents in Guam: Understanding Ethnic Differences in Perceived Social Norms, Social Influence, Accessibility, and Permissiveness*

“

My experience with the CREATE program has definitely sparked my interest in doing research in my future academic endeavors, whether it be working in a wet lab setting or doing data analysis, so much so that I intend to apply to medical school. Dr. Pokhrel and his team were very helpful in every step of my internship from assisting me in formulating my hypothesis, organizing my ideas, and working with the database.”



ALESSANDRA CUEVAS

MENTOR: Monica Esquivel, PhD, RDN

PROJECT TITLE: *Larger household size increases fruit and vegetable intake and food security status of children participating in the baseline study of the Keiki Produce Prescription (KPRx) program.*

“

Everything I’ve learned in the CREATE program has pushed me to continue pursuing medicine. I also learned a lot from my mentor—from the importance of doing research to being confident in myself. She has taught me the little things about conducting research and the major things about reaching the community through research.”



PAUL DUMARAOS

MENTOR: Samantha Streicher, PhD, MPH

PROJECT TITLE: *Comparing Lifestyle Factors and Cancer Risk Among Multiethnic Cohort Japanese Americans of Okinawan and Mainland Japanese Origin.*

“

Before I joined the CREATE program, I was interested in doing medical research despite the limited amount of research opportunities on the island of Guam. After being part of this, there were major changes to my academic path. I grew to appreciate the concept of cancer epidemiology and its significance to public health not just in Hawai’i, but also in Guam and various places around the world. I learned that there is a lot that needs to be done in Guam when it comes to public health, access to health care, and medical research.”



CURRENT RESEARCH

Garima Tyagi, MS,
Graduate Research Assistant

DEVELOPING E-CIGARETTE INTERVENTIONS FOR RURAL HAWAIIAN YOUTH

Recent Centers for Disease Control and Prevention data indicates that 18% of all middle school youth in the State currently use an electronic vapor product, ranking Hawai'i first nationally among 14 states collecting data on middle school youth. In 2022, UH Cancer Center faculty, Scott Okamoto, PhD, MSW, received \$2.8 million from the National Institute on Drug Abuse to develop and evaluate a school-based, culturally-grounded substance use prevention intervention for Hawai'i's rural youth.

The project builds on *Ho'ouana Pono*, to send a message to do what is right or righteous, a drug prevention curriculum designed for rural Hawaiian adolescents. It will update the existing *Ho'ouana Pono* curriculum and introduce new e-cigarette and vaping prevention content, including a social and print media campaign across middle/intermediate and multi-level public and public charter schools on Hawai'i Island. More than 500 students are expected to enroll in the study over the next five years.

STUDYING THE ROLE OF STRUCTURAL RACISM IN LUNG CANCER RISK

UH Cancer Center researchers, Lani Park, PhD, MPH, in collaboration with Iona Cheng, PhD, MPH, of the University of Southern California and University of California, San Francisco, received over \$700,000 from the National Cancer Institute to study the role of structural racism on smoking behaviors and lung cancer risks.

This study will examine various measures of structural racism, such as residential segregation, to understand how persistent racial and ethnic inequities among African American, Japanese American, Latino, and Native Hawaiian adults contribute to different smoking behaviors and increased risk of lung cancer. In Hawai'i, lung cancer is the second most common cancer and the leading cause of cancer-related death in both men and women.

UH CANCER CENTER RESEARCHER BRINGS CAR T-CELL THERAPY TO HAWAII

In May 2022, Stephanie Si Lim, MD, introduced Hawai'i to Chimeric Antigen Receptor T-cell therapy (CAR T-cell therapy), which helps to modify a patient's T-cells (a type of immune cell) making it more capable of fighting cancer. This can result in the development of life-saving treatments for cancers that are difficult to treat. Dr. Si Lim is leading the initiative to build a broader Cellular Immunotherapy Program at Kapi'olani Medical Center for Women & Children, Hawai'i Pacific Health.

Moving forward, all patients living in Hawai'i, who qualify for this clinical trial, will be able to receive treatment without having to travel out of state.

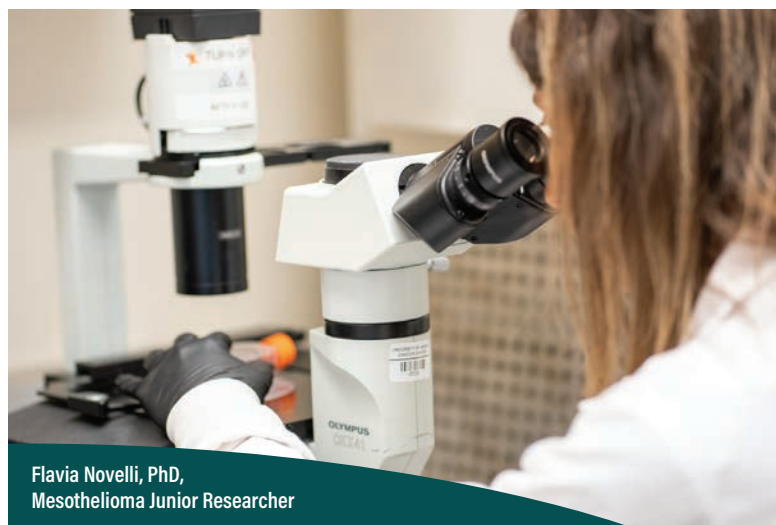
RESEARCH DISCOVERIES

A PERSONALIZED APPROACH TO MESOTHELIOMA

Michele Carbone, MD, PhD, along with co-authors, Raffit Hassan, MD, Chief of Thoracic Oncology, National Cancer Institute David Schrupp, MD, MBA, FACS, Head of Thoracic Surgery, National Cancer Institute and Harvey Pass, MD, Chief of Thoracic Surgery, New York University, among others, found that patients with mesothelioma—a cancer of the membranes covering the chest and the abdomen—caused by BAP1 or other inherited genetic mutations, require a personalized therapeutic approach, compared to mesotheliomas not linked to genetic mutations. These personalized approaches can significantly improve cancer prognosis for many years and save lives.

\$3.5M TO IMPROVE PROSTATE CANCER RISK PREDICTION

Lang Wu, PhD, and nationwide collaborators secured a \$3.5 million research grant to support a study on prostate cancer. Funded by the National Cancer Institute, the purpose of the study is to increase the understanding of the causes of prostate cancer to improve the prediction of future disease. The research will identify proteins that play a role in prostate cancer development and progression through novel methods across African and European populations in the U.S. and other countries.



Flavia Novelli, PhD,
Mesothelioma Junior Researcher

RESEARCHER IDENTIFIES A PEPTIDE ACTIVE AGAINST CERTAIN CANCERS

UH Cancer Center researcher and professor at UH Hilo Daniel K. Inouye College of Pharmacy, Shugeng Cao, PhD, identified a rare bacterium that is active against certain cancers. The bacterium, *Lentzea flaviverrucosa*, that produces petrichorin A, was co-discovered by Chunshun Li, PhD and Xiaohua Wu, PhD, in collaboration with Joshua Blodgett, PhD of Washington University in St. Louis, MO. The research team proved that petrichorin A is active against cancers such as ovarian cancer, fibrosarcoma, prostate cancer, and T-cell leukemia. This highlights the importance of including petrichorin A in future research of pharmaceutical design and discovery programs.

CLINICAL TRIALS

ADVANCING CUTTING-EDGE CANCER CARE



Courtney Chun with clinical trials patient.

In 2020, the COVID-19 pandemic caused a tremendous decline of cancer patient participation in clinical trials and a shortage of cancer center staffing locally and nationwide. This crisis slowed the progression of life-saving clinical research which became especially disheartening for patients who rely on clinical trial treatments in their hope for a cure.

The UH Cancer Center Clinical Trials Office (CTO) provides the infrastructure and operational support for cancer clinical trials at the UH Cancer Center and hospitals which are part of the Hawai'i Cancer Consortium. In 2022, the CTO ramped up efforts to bring patient participation back to prepandemic levels through reorganization, implementing new strategies, and increasing staff resources, especially Clinical Research Professionals (CRP) who are critical to expanding clinical trials availability in Hawai'i.

CRPs are responsible for coordinating and monitoring clinical trials and aids in the improvement of cancer patient outcomes. Courtney Chun, CRP and lead Cancer Care Delivery Coordinator helps navigate patients throughout their cancer journey from diagnosis and beyond.

A clinical trials patient of Courtney's described the importance of this relationship. "When I was diagnosed with cancer and learned I would need chemotherapy, I was very nervous. I knew there were loads of terrible side effects that I might experience," she said. "I chose to participate in a clinical trial that tracks side effects during and after chemotherapy. Courtney was there at my chemotherapy visits and continued to see me even after my treatment was over. She was a source of comfort throughout my treatment."

The UH Cancer Center offers different types of clinical trials, such as cancer care delivery trials which focus on improving the development and delivery of treatments, and emotional support trials which help cancer survivors cope with long-term effects. Some trials are also available for healthy people considered at high-risk for cancer. The UH Cancer Center offers opportunities to cancer patients of all stages and addresses specific gaps in oncologic clinical care that need improvement. "Being able to offer unique opportunities and novel treatments to oncology patients is something I am grateful to be a part of every day," said Courtney. "Seeing patients benefit in any way from our trials is one of the best feelings as a CRP."

The UH Cancer Center remains dedicated to investigating new ways of delivering cancer care to Hawai'i's multiethnic population, often underrepresented in clinical trials nationwide. As a result, Hawai'i is contributing significantly to expanding the knowledge of how various cancers affect different races, including minority populations. Looking ahead, the UH Cancer Center hopes to expand clinical trial access to neighbor island patients.

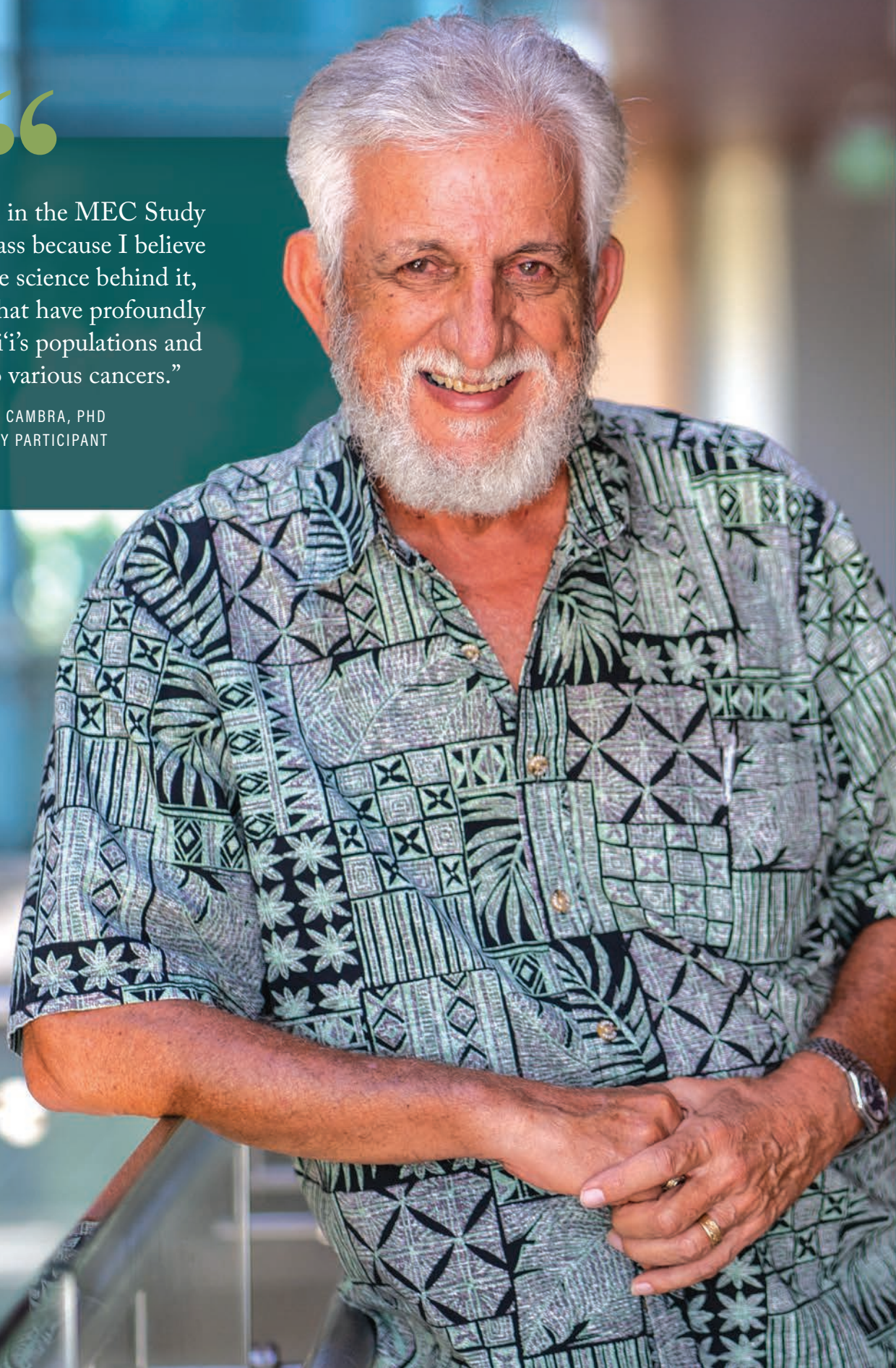
A portrait of Courtney Chun, a woman with long dark hair, smiling. She is wearing a black sleeveless top and a gold necklace. The background is a blurred outdoor setting with greenery.

Courtney Chun

“

I will participate in the MEC Study until the day I pass because I believe in this study, the science behind it, and the results that have profoundly impacted Hawai‘i’s populations and our relation to various cancers.”

- RONALD CAMBRA, PHD
MEC STUDY PARTICIPANT



CONTINUOUS IMPACT OF THE MULTIETHNIC COHORT STUDY

The University of Hawai'i Cancer Center's Multiethnic Cohort (MEC) Study, the most extensive epidemiological study in the world, received a five-year renewal grant in 2022 from the National Cancer Institute (NCI) to continue addressing health disparities among various ethnic groups.

The MEC Study, continuously funded by the NCI for the past 29 years, follows a large sample of Hawai'i and Los Angeles residents of five main ethnic groups: Japanese Americans, Native Hawaiians, African Americans, Latinos, and Whites. Researchers have been following the cohort members and examining whether those who develop cancer or other diseases differed in risk factors prior to being diagnosed.

This funding renewal allows the study of additional health conditions that are more common in Hawai'i, such as visceral obesity and liver cancer. The renewal also includes further research in social determinants of health, health effects of climate change, and genetic risk prediction.

Over **900** published
scientific articles

82 other universities
use MEC data

67% of surviving
participants continue to
fill out their questionnaires

Ronald Cambra, PhD, has been a part of the Hawai'i cohort of the MEC Study since its inception. In 1993, Dr. Cambra received a recruitment questionnaire in the mail and almost threw it away because, at the time, he had no friends or family who had been impacted by cancer. He did not think his involvement would make a difference. It wasn't until his wife argued, "If you do that, then everyone else has an excuse for not doing these things," then Dr. Cambra decided that his participation may have value. Today, Dr. Cambra cares for his wife who is battling skin cancer on the top of her head. He is proud to have made the decision to be a MEC Study participant and help be part of reducing the burden of cancer. "Participation in this study is a very small investment of time for the amount of reward that comes out of it," said Dr. Cambra.

MEC Study findings and healthy lifestyle tips are regularly sent to participants. Due to abundant research on obesity, body composition, and nutrition, Dr. Cambra learned a lot about the dangers of carrying excess fat. Since learning this information, he implemented healthier lifestyle habits with help from the healthy recipes and exercise tips, and attributes his 30-pound weight loss to the MEC Study.

Because of Dr. Cambra's positive experience with the MEC Study, he has volunteered to participate in several other UH Cancer Center research, which examined cognitive abilities, body composition, and liver cancer. Results from his participation in these studies were sent directly to his physician, which allowed Dr. Cambra to receive more comprehensive care.

PHILANTHROPY

Shirley and Drew Santos presents
check to Loïc LeMarchand, MD, PhD,
Interim Director



“

The UH Cancer Center is doing world-class research right here in Hawai‘i. We’re proud to raise money from local residents and businesses and keep it in Hawai‘i to support the fight against this terrible disease.”

- DREW SANTOS

Last year, CoolingCancer.org, a non-profit organization, expanded its support of the University of Hawai'i Cancer Center with a gift of \$100,000 to aid in cancer research. Andrew "Drew" Santos, president of Cooling Cancer and president of Admor HVAC Products, Inc. and his wife, Shirley Santos, presented the gift in October 2022 to Dr. Loïc Le Marchand, Interim Director of the UH Cancer Center.

Drew founded CoolingCancer.org in 2013 with the goal of raising money for cancer research and patients in Hawai'i. Thus far, their nonprofit organization has given a total of \$445,000. Fighting cancer is personal for Drew because he lost his father to the disease. He shares his father's memory which continues to fuel his support of this cause.



Drew and Shirley Santos with their daughter, Keli, and dog, Sunny.

EVERY PHONE CALL ENDED WITH, "I LOVE YOU"

BY DREW SANTOS

I did not have any contact with my Dad for almost 30 years. We were strangers due to divorce when I was around 10 years old, and it wasn't until I was in my forties and married that we started a relationship.

Email brought him back into my life in a very slow way. A visit to his home to meet his new wife turned into weekends together and then trips to Napa, San Francisco, Australia, and Europe, to name a few.

We discussed the past, but we never dwelled on it. We only wanted to look to the future and spend time together, enjoying life and our families. He became my best friend, someone I could talk to, email, call and hang out with, and feel happy and comfortable.

We emailed sometimes daily, talking about sports, food, travel, or politics. Our relationship grew to where every email or phone call ended with "I love you." What a blessing this was after not hearing it for thirty years. Then, boom. After fighting cancer for a year, he was given a prognosis of six weeks to six months to live. He lasted about six weeks.

I visited him on Thanksgiving and he looked great—a little weak but smiling from ear to ear. A week later, hospice nurses were at his house, setting up a bed. Dad was gone by Christmas. I remember him saying, "I didn't think it would happen this fast."

Seeing my Dad's life pass before my eyes when he had so many years left, changed my life.

Now it included cancer.



AWARDS & HONORS



CHRISTA BRAUN-INGLIS, DNP, APRN-RX

Advanced Practitioner Society for Hematology & Oncology, Research & Quality Improvement Committee, Chair

SWOG Cancer Research Network, Advanced Practice Provider Engagement Project and Task Force Chair, Nursing Research Sub-committee, and Palliative and End of Life Care Committee, Member



STEPHANIE SI LIM, MD

Children's Oncology Group, non-Hodgkin's lymphoma Committee and Diversity and Health Disparity Committee Liaison

Pediatric Real World CAR (chimeric antigen receptor) Consortium, Steering Committee Member



LOÏC LE MARCHAND, MD, PHD

Recipient of the 2022 American Association for Cancer Research (AACR) Distinguished Lectureship Award on the Science of Cancer Health Disparities



JOHN SHEPHERD, PHD

American Association for Physicists in Medicine, Quality control of Dual-energy X-ray Absorptiometry (DXA) Systems Committee, Working group on Review of Journal Editorial Team and Operation, Member



JAMI FUKUI, MD

NCI Breast Cancer Steering Committee, Member



SCOTT OKAMOTO, PHD

Board of Directors, Society for Prevention Research (2021-2024), Member-at-Large



PALLAV POKHREL, PHD, MPH

NIH Addiction Risks and Mechanisms Study Section,
Member

Cancer Center Support Grant Ad Hoc Review Committee,
Member



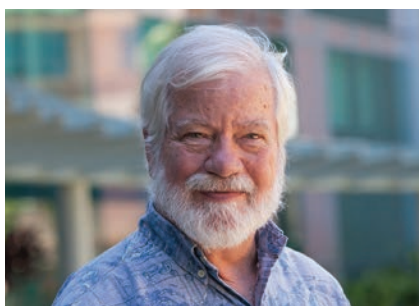
LENORA LOO, PHD

University of Hawai'i Cancer Center Pilot Study Award



CAROL BOUSHEY, PHD, MPH

American Society For Nutrition Foundation General Mills
Bell Institute of Health and Nutrition Innovation Award



THOMAS WILLS, PHD

Scientific Impact: Ranked among top Psychology
investigators on scientific impact, May 2022.

"Accelerating the Pace of Drug Abuse Research Using
Existing Data," Review Committee Member



MASAYOSHI YAMAGUCHI, PHD

Sigma Xi, The Scientific Research Honor Society, Member
Distinguished Scientist Award, International
Scientist Awards on Engineering, Science, and
Medicine Organized

Discover Oncology, Editorial Board Member (Editor)



SANDI KWEE, MD, PHD

2022 Recipient Richard L. Wahl Mid-Career Leadership
Award, The Education and Research Foundation, Society
for Nuclear Medicine and Molecular Imaging

2022 Society for Interventional Radiology, Award
for Distinguished Clinical Study

Network for Expanding National Capacity in
Patient-Centered Outcomes Research through Training,
Steering Committee, Member



PEIWEN FEI, MD, PHD

2022 Opinion Leader Group Research & Consulting,
Leading Expert, Fanconi Anemia Signaling Research



KEVIN CASSEL, DRPH, MPH

National Academies of Sciences, Engineering,
and Medicine Review, Fate, Exposure, and Effects
of Sunscreens in Aquatic Environments and
Implications for Sunscreen Usage and Human
Health Report Committee, Member

American Association for Cancer Research Cancer
Disparities Progress Report 2022, Steering Committee



JARED ACOBA, MD

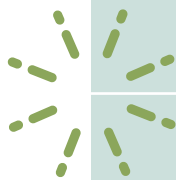
SWOG Cancer Research Network, Diversity, Equity, and
Inclusion Monitoring Committee, Member

2022 BY THE NUMBERS



80

**GLOBAL
COLLABORATIONS**



142 Research Projects

26 Years of Continued
NCI Designation

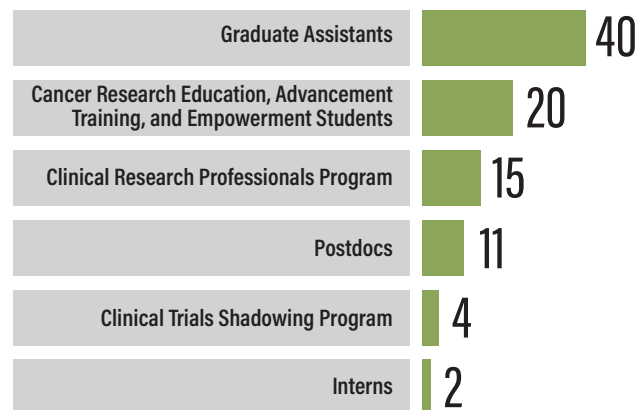
54 Funded Principal
Investigators

\$57.3M Awarded
Research Funds

305 Publications

About **50** Affiliated Community
Physicians

EDUCATION



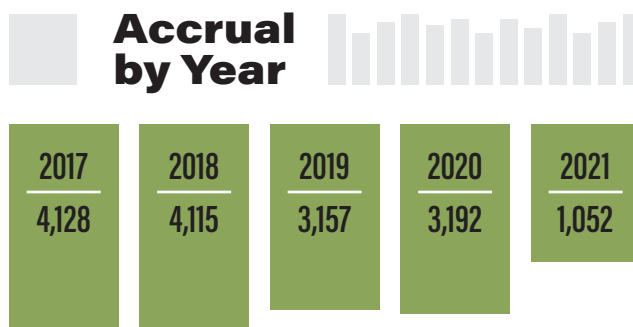
Clinical Trials

PATIENTS ENROLLED IN 2022

**Active Trials
in 2022***

169

**Accrual
by Year**



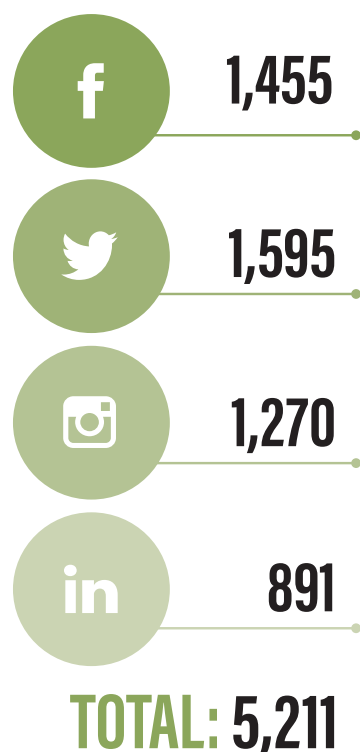
**Accrual for 2022 by
Research Category**

THERAPEUTIC: 48

NON-THERAPEUTIC: 672

TOTAL
720

SOCIAL MEDIA AUDIENCE



Community Outreach



1

**Educational Events for
Special Populations**

Populations Reached

CHUUKESSE, FILIPINOS, KOREAN,
MARSHALLESE, TONGAN, SAMOAN,
AND NATIVE HAWAIIAN

TMIST Study

REACH/AUDIENCE: 194
JOINED STUDY: 15

**Screen to Save Colorectal
Cancer Educational Sessions**

REACH/AUDIENCE: 230

**Human Papillomavirus
Educational Sessions**

REACH/AUDIENCE: 639

2

Education & Training

Cultural Competency Trainings, Young
at Heart Expo, Hawai'i Comprehensive
Cancer Coalition Meetings, and
Cancer Survivorship Conference

REACH/AUDIENCE: 14,000



**Cancer Answers
Podcast Listeners:**

4,300 on Facebook

691 on YouTube

518 on Apple and Spotify

Press Releases Produced: 17

**Press Releases
Picked Up by Media: 38**

*Active Trials are studies that were open to enrollment during 2022, with the study intent to accrue subjects. Studies using retrospective data or specimen has been excluded.

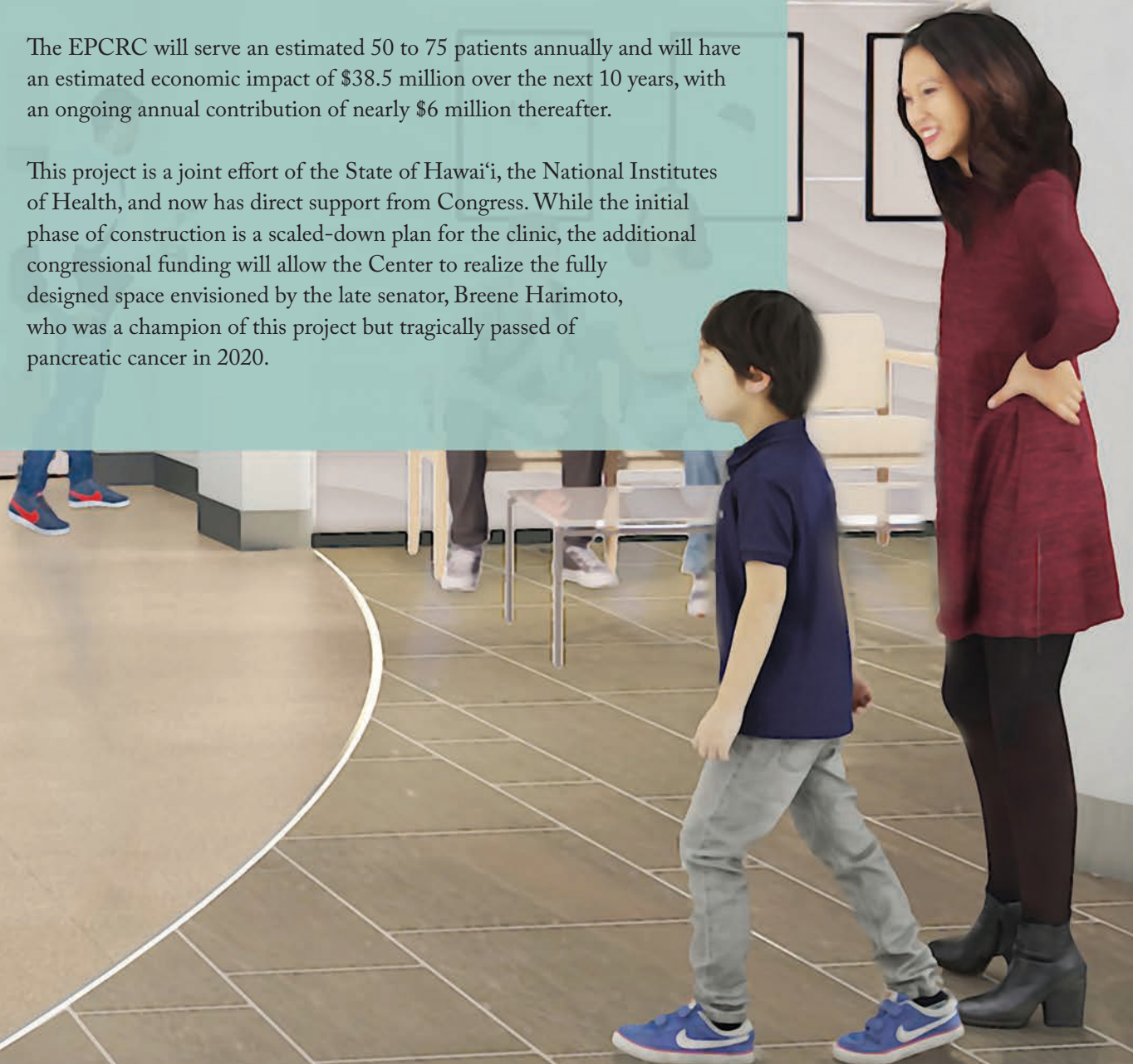


EARLY PHASE CLINICAL RESEARCH CENTER CONSTRUCTION BEGINS

In October, the first stage of construction of the Early Phase Clinical Research Center (EPCRC) began. The facility will be the first of its kind in the State, providing access to phase 1 trials to cancer patients in Hawai'i, eliminating the burden of travel to the continental U.S. for specialized treatments. Phase 1 trials represent cutting-edge cancer treatments and are often considered when patients have a particularly challenging form of cancer or when standard treatments have been unsuccessful.

The EPCRC will serve an estimated 50 to 75 patients annually and will have an estimated economic impact of \$38.5 million over the next 10 years, with an ongoing annual contribution of nearly \$6 million thereafter.

This project is a joint effort of the State of Hawai'i, the National Institutes of Health, and now has direct support from Congress. While the initial phase of construction is a scaled-down plan for the clinic, the additional congressional funding will allow the Center to realize the fully designed space envisioned by the late senator, Breene Harimoto, who was a champion of this project but tragically passed of pancreatic cancer in 2020.






The University of Hawai'i Cancer Center is the only National Cancer Institute-Designated Cancer Center in Hawai'i and the Pacific. The UH Cancer Center's mission is to reduce the burden of cancer through research, education, patient care, and community outreach with an emphasis on the unique ethnic, cultural, and environmental characteristics of Hawai'i and the Pacific. The UH Cancer Center is a research organization within the University of Hawai'i at Mānoa and located in Kaka'ako. The UH Cancer Center directly employs 300 faculty and staff, with another 200 affiliate members through the Hawai'i Cancer Consortium.



UNIVERSITY OF HAWAII
CANCER CENTER

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uhcancercenter.org

   @UHCANCERCENTER