Aloha Honorable Members of the Hawai‘i State Legislature,

On behalf of the University of Hawai‘i at Mānoa Kaka‘ako Branch campus ‘ohana, I would like to extend a big MAHALO for all your support. The assignment of tobacco settlement special fund moneys and cigarette tax revenue helped build our Kaka‘ako campus. Our achievements would not have been possible without these contributions from the Hawai‘i State Legislature and many community benefactors. We are excited to present you with a brief summary of select education, research, community services and outreach activities that have been part of the missions made possible through support of our programs.

This year I am sharing information from both the University of Hawai‘i Cancer Center and the John A. Burns School of Medicine (JABSOM). I am in the unusual role of representing both long-standing UH academic health science units based at the UH Mānoa Kaka‘ako campus, in my dual roles as Interim Director of the Cancer Center and Dean of JABSOM. Both these organizations provide a strong foundation for Hawai‘i’s healthy future. The JABSOM programs train health scientists and physician providers for all of Hawai‘i. The Cancer Center provides cutting edge research addressing cancer-related health disparities in Hawai‘i and the greater Pacific region. Both JABSOM and the Cancer Center partner with the major medical centers in Hawai‘i to provide unique resources, training, scientific innovation and service to Hawai‘i that supports our economy and extends healthy lives in our state. Both are working together to improve health and reduce cancer suffering.

As I take on the new role at the Cancer Center, I would like to emphasize that cancer research and treatments are of particular importance to Hawai‘i. Every year more than 6,000 Hawai‘i residents are diagnosed with cancer and more than 2,000 patients die from the disease, accounting for more than 20% of deaths in the state. Cancer is not only a major health concern, but also a huge financial and emotional burden to our families and communities. A concerted effort by physicians and oncologists who offer their experience and knowledge, and researchers who provide new insights and technologies, will help us in the fight against cancer, where early detection and effective treatments are essential. The Hawai‘i Cancer Consortium combines the strengths of the UH Cancer Center, JABSOM, and three major medical centers to give the people of Hawai‘i the best in cancer detection, treatment and prevention.

Overall, the Kaka‘ako campus programs are designed for the health of Hawai‘i’s people, whether we are educating the physicians of tomorrow, or conducting research on diseases that afflict our residents. These activities help us pursue the ALOHA vision of JABSOM – “Attaining Lasting Optimal Health for All.”

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John A. Burns School of Medicine
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The University of Hawai‘i at Mānoa — Kaka‘ako consists of the John A. Burns School of Medicine (JABSOM) and the University of Hawai‘i (UH) Cancer Center, both being world-class organizations that provide an environment fostering research, education and service with an unique emphasis on the ethnic, cultural and environmental characteristics of Hawai‘i and the Pacific. The construction of both JABSOM and the UH Cancer Center were financed with revenue bonds backed by tobacco related funds. These tobacco related funds include Master Settlement Agreement Funds and taxes placed on cigarette purchases, both provided with the approval of the Legislature, the Governor, and the people of Hawai‘i.

LEED (Leadership in Energy & Environmental Design) is a green building certification program that recognizes best-in-class building strategies and practices. To receive LEED certification, building projects satisfy prerequisites and earn points to achieve different levels of certification. LEED certified buildings save money and resources and have a positive impact on the health of occupants, while promoting renewable, clean energy. LEED certification is recognized across the globe as the premier mark of achievement in green building.

John A. Burns School of Medicine

The University of Hawai‘i John A. Burns School of Medicine was established in 1965 at Le‘ahi Hospital on the slopes of Diamond Head as a two-year program of basic medical sciences for students hoping to enroll in various medical schools on the mainland United States. In 1973, the Hawai‘i State Legislature made it possible for the school to expand its scope and become a four-year degree granting program. Currently, about 50% of the practicing physicians in Hawai‘i are graduates of the school or its residency program. JABSOM’s Kaka‘ako campus, completed in 2005, is a world-class education and research complex. The $150 million JABSOM complex is located on a 9.9 acre site consisting of an Education/Administration Building and a Bio-Medical Research Facility. The JABSOM complex is the first to incorporate energy efficiency and innovations in both its laboratories and offices by adopting the U.S. Green Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED) Rating System.

UH Cancer Center

The UH Cancer Center was established by the University of Hawai‘i Board of Regents in 1981. Prior to 2011 the Center was known as the Cancer Research Center of Hawai‘i. The Center received its National Cancer Institute designation in 1996. This designation recognizes the Center as one of the best cancer research institutions in the world and requires it to meet stringent requirements and undergo constant evaluation. The six-story, 150,000-square-foot building located in Kaka‘ako (completed in 2013) consolidates all of the Center’s programs under one roof and provides world-class facilities for research on cancer biology, cancer prevention and control, and epidemiology, as well as clinical and translational research. The new facility has earned a LEED Gold Certification, which means it is an internationally recognized green building whose benefits range from improving air and water quality to reducing solid waste and conserving energy.
**Tobacco—Where the money goes**

**Mahalo Hawai‘i Legislature!**

JABSOM and UH Cancer Center are able to provide comprehensive programs related to tobacco cessation, including outreach, research, education, treatment, and training of health care professionals. With the support of Master Settlement Agreement Funds and Cigarette Tax dollars the Hawai‘i Legislature has allowed JABSOM and the UH Cancer Center to survive and thrive.

<table>
<thead>
<tr>
<th>Master Settlement Agreement Funds</th>
<th>Cigarette and Tobacco Tax</th>
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<tr>
<td>The accord reached between the Attorneys General of 46 states and major tobacco companies imposes restrictions on advertising and provides states compensation for taxpayer money that was spent on tobacco-related diseases.</td>
<td>A portion of the tax revenue on the sale of cigarettes has been designated by the Hawai‘i State Legislature to go towards the Hawai‘i Cancer Research Special Fund (2 cents per cigarette).</td>
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**Debt Service and Operation Costs**

- **Debt Service Payment**: Basically the mortgage to use the buildings for both JABSOM and the UH Cancer Center
- **Facilities and Infrastructure**: Utilities, telecommunications, rentals, materials, supplies, printing, publications, repair, maintenance, building expenses, janitorial, and grounds keeping
- **Personnel**: Support for administration, fiscal, communications, facilities, information technology, faculty, and staff

*Debt Service and Operations Costs enable the mission of JABSOM and UH Cancer Center in areas of education, training, research, community outreach/partnerships, and the delivery of healthcare in Hawai‘i*

**Education & Training**
- **Tobacco Settlement Funds**

**Research**
- **Cigarette Tax**

**Community Outreach**
- **John A. Burns School of Medicine**

**Tobacco Cessation Treatment Programs**
- **UH Cancer Center**

Hawai‘i Impact Summary 2015—Kaka‘ako 5
The Biosafety Level 3 (BSL-3) research laboratory is designed to identify and contain introduced pathogens before they spread widely in the community, protecting public health, and safeguarding Hawai‘i’s residents and visitors. The laboratory is managed by the John A. Burns School of Medicine and the Pacific Center for Emerging Infectious Diseases Research. They work closely with the Hawai‘i Department of Health, National Institutes of Health, Centers for Disease Control and Prevention, Department of Defense, East-West Center and private biotechnology sector to develop a global center of translational research excellence for infectious diseases focused on the Asia-Pacific region. Goals include developing rapid diagnostics, improved treatments and affordable vaccines for dengue hemorrhagic fever, West Nile virus encephalitis, avian influenza, Nipah encephalitis, SARS, and most recently Ebola.

JABSOM Vivarium care facilities have room for up to 30,000 mice. These facilities include housing rooms with micro-isolator cages located on ventilated racks. Other resources in the vivarium include an irradiator, in vivo luminometry system, and behavioral testing room. A veterinarian oversees a fully qualified staff in this facility.

The Translational Research Clinic is a clinical and research facility that seeks to speed the translation of research results into therapies, tools and patient care practices that improve community health. This clinic is scheduled to open in Spring 2015.

The Health Sciences Library serves as an information resource not only for the John A. Burns School of Medicine, but also for the University of Hawai‘i at Mānoa campus, the UH system, and the State. Emphasis is on Web-accessible materials, and the collections include a wide variety of print and electronic resources, primarily in the clinical sciences. Services available to both students and the public include computer workstations, individual study carrels in stack area, and library reference assistance.

Café Waiola is where Sweet Revenge and Simply Ono serve breakfast and lunch. Sweet Revenge serves homemade sweet and savory pies made from local ingredients. Simply Ono serves local-style plate lunches and comfort food.

Māla Lā‘au Lapa‘au (traditional healing garden) serves as a natural outdoor classroom to educate community-based teachers and learners of all ages about the properties and uses of Native Hawaiian medicinal plants and cultural practices with a focus on medicinal healing.
The Sullivan Conference Center was named after the Sullivan family, which has supported cancer research in Hawai‘i for decades. Joanna Sullivan pledged $3 million to the University of Hawai‘i Cancer Center to help build, furnish and maintain its new state-of-the-art research building. In 1971, Sully Sullivan established the Mama Lau Cancer Research Center at the University in memory of his mother-in-law. This laboratory led to the development of what is today the University of Hawai‘i Cancer Center. The Sullivans have also been major donors to the Cancer Center, establishing a chair to provide leadership for cancer research in Hawai‘i. Sully Sullivan was a successful entrepreneur and legendary philanthropist who founded the Foodland grocery store chain with Joanna and her family in 1948.

Makawalu Vortex, is an art work created by Hawai‘i artist Jerry Vasconcellos. The sculpture was created as part of the state’s Art in Public Places program, and meant to complement the new University of Hawai‘i Cancer Center building near it. The name means “eight eyes” and represents different perspectives. The vortex is meant to generate positive healing energy.

Shared Resources at the UH Cancer Center provide state-of-the-art core facilities to support cutting-edge research in an efficient, cost-effective manner. Our Shared Resources comprise 10 platforms, ranging from genomics and metabolomics to high tech imaging and data analysis, staffed by researchers with expertise in each area, that provide high-quality scientific technology to the medical community.

Clinical Trials—Since its inception, the UH Cancer Center has participated in Center-generated and multicenter national/international clinical trials. Clinical trials in Hawai‘i are accessible through community hospitals, physician offices, and local outpatient clinics. The Center also conducts industry-initiated and investigator-initiated clinical trials. They are supported by the UH Cancer Center and are led by Principal Investigators who are faculty members of the Center. The trials are conducted at various clinical sites in our community. Innovative investigational new drugs under development by pharmaceutical companies are investigated in cancer types common to the local population.

The green roof—a top the Cancer Center provides insulation that reduces the building’s energy cooling load, and water absorption to reduce rain water run off.
Tobacco Prevention

School Health Education Program (SHEP)
The SHEP program is a joint venture between JABSOM and the State of Hawai‘i Department of Education that places premedical and medical students into public high school health classes. The students serve as health educators and focus on six priority areas, one of which is tobacco awareness. The SHEP program has proven to be an effective means of educating high school students about health issues. Discussions include the influence of tobacco advertising on myths about tobacco and health effects of long-term tobacco use, and ways to effectively say “no” when offered a tobacco product.

Homeless Smoking Cessation Support
Smoking is a big problem among the homeless. The Hawai‘i H.O.M.E. Project provides free student-run medical clinics at three homeless shelters on the island of O‘ahu each week. One of the services provided is a smoking cessation program, targeted at those patients that have had difficulty accessing other smoking cessation resources. The students provide weekly counseling and support for patients trying to quit smoking and are able to offer free pharmaceutical treatments such as bupropion and various forms of nicotine replacement.

Education on Tobacco Complications
In the first two years of medical school students learn about cases relating to tobacco dependence and/or the management of tobacco-related medical complications such as coronary artery disease, chronic obstructive pulmonary disease, and various cancers. The students also learn a great deal about the behavioral aspects of tobacco dependence and how to work effectively with patients to help them with smoking cessation. Lectures that accompany the tobacco-related cases include topics such as “Smoking Cessation.”

Clinical Experience in Tobacco Dependence
As a part of their Family Medicine clerkship in the third year, all students complete an online module focusing on tobacco dependence and smoking cessation. After completing the module, they are required to provide smoking cessation counseling for at least two of their clinic patients. The students then undergo Observed Structured Clinical Exams (OSCEs) at the end of the clerkship as a means to evaluate their competence in smoking cessation counseling.
Cancer Center Smoking-Related Studies
Researchers in the Cancer Prevention and Control Program are conducting a number of smoking-related studies. They are also working with the state of Hawai‘i Department of Health on smoking cessation programs. The studies include the following titles:
- E-cigarette use and cigarette smoking among young adults in Hawai‘i
- Smoking prevention programs in Hawai‘i middle schools and investigating the recent rise in e-cigarette use among adolescents
- The impact of advertising on youth in Hawai‘i

The Center for Cardiovascular Research
Cardiovascular disease is the leading cause of death and disability throughout the world. Smoking is the most important risk factor for cardiovascular disease. Many more people die of smoking–related cardiovascular disease than all other smoking-related pathologies combined. The goal of JABSOM’s Center for Cardiovascular Research is to enhance our understanding of cardiovascular biology and develop new treatments for disease. Some of the research includes developmental biology of cells that promote cardiac healing, immunology of atherosclerosis and how plaques from in arteries, and how to improve the response of the heart to low oxygen levels.

E-Cigarettes Usage Among Hawai‘i’s Youth
Researchers at the UH Cancer Center (led by Drs. Thomas Wills and Rebecca Knight) have found that more of Hawai‘i’s teens are using e-cigarettes. In 2013 a poll of 1,900 public and private school teens, aged 14 and 15, found that nearly 30% admit to trying e-cigarettes. This is higher than their counterparts on the mainland. Data also showed that e-cigarette use had tripled among high school students in the last two years. It is believed that e-cigarettes are being marketed to local youth.

Smoking Cessation in Native Hawaiians
It has been well documented that Native Hawaiians and Pacific Islander have a higher prevalence of risk factors associated with chronic conditions. This includes higher rates of smoking dependence with fewer access to cancer prevention and control programs. Researchers from JABSOM’s Department of Native Hawaiian Health focus research on these disparities, including smoking behavior, smoking cessation, and strategies for culturally appropriate programs for Native Hawaiians.
Community Activities

UH Cancer Center Public Sessions
The UH Cancer Center conducts public information sessions for cancer survivors, as well as the public, interested in research. Separate sessions specifically on prostate cancer and breast cancer, which are two of the five most common cancers in Hawai‘i, were conducted in 2014. Public sessions also include educational sessions on the biology of cancer, such as how cancer cells do what they do and how they spread in the body. Sessions include expert speakers, question and answer opportunities, and may include round table discussions, and poster sessions.

Promoting Colon Cancer Screening
Colon cancer is the second leading cause of cancer. In Hawai‘i, Native Hawaiian men have one of the highest death rates from colon cancer, compared to other ethnic groups. The high mortality rate amongst Native Hawaiian men is due to later stage diagnoses compared to other ethnic groups. Early and regular screening for precancerous colon lesions can prevent nearly 90% of colon cancers. UH Cancer Center is promoting community-based and culturally-relevant discussion groups to help increase colon cancer screening among Native Hawaiian men.

Rehabilitation Research and Training Center
In 2014 JABSOM’s Pacific Rehabilitation Research and Training Center (PBRRTC) conducted two projects that had statewide outreach: developing strategic and business plans for a Comprehensive Service Center for the Deaf, Hard-of-Hearing, and Deaf-Blind, PBRRTC conducted 11 public meetings on Kaua‘i, Maui, Hawai‘i, Moloka‘i, and O‘ahu to tell people about the project and gather feedback; second is the Hawaii Neurotrauma Registry Project (HNTR), which collects information on Hawai‘i residents of all ages who have had a traumatic brain injury, stroke, and/or spinal cord injury.

JABSOM Community Service
JABSOM students engage in numerous community service projects through out the year: the Native Hawaiian Center of Excellence Kuaola Mentoring Program, pairs JABSOM students with high school students to perform service learning projects, career exploration, healthy living, and cultural awareness; Health Career Exploration Days are conducted at several intermediate and high schools on O‘ahu; and the Medical Problem Solving Program, a three week program which lets high school students experience what it is like to be a medical student.
What’s Happening at Kaka‘ako

UH Cancer Center Senior Fair
The UH Cancer Center participates in the annual Hawai‘i Seniors’ Fair–Good Life Expo that reaches over 20,000 over 3 days in September. Nursing students from Hawai‘i Pacific University collaborate and volunteer their time to staff the exhibits.

JABSOM/Cancer Community Health Fair
JABSOM’s medical students host a health fair for the community. In 2014 the first joint JABSOM/UH Cancer Center was held. The fair provides exposure to health organizations, provides health information and education.

Quest for a Cure
The Quest for a Cure: Progress in Cancer Research event, held in October, was a free and public event where leading experts in cancer research talked about how research has improved survival and quality of life of cancer patients.

The Mini-Medical School on Healthy Aging
Participants in the second half of their lives received relevant scientific information on aging, similar to what our medical students learn, but tailored for public audiences.
http://jabsom.hawaii.edu/minimedschool

In Memory of Jeff Nakamura (1965-2013)
Architect Jeff Nakamura was diagnosed with cancer after his firm was selected to design the UH Cancer Center. Family, friends and co-workers donated a memorial in Jeff’s name in 2014, when Kenton (Jeff’s son) was a Cancer Center intern.

American Samoa

Global Health at JABSOM
JABSOM is committed to improving the health of the people of Hawai‘i and the Pacific Basin. Our mission is to train a globally competent health workforce with skills to address critical global health problems.

US Affiliated Pacific Islands
Points of Pride

- **Hawai‘i emphasis:** Roughly 77% of entering JABSOM students are Hawai‘i residents (90% of MD students are Hawai‘i residents).

  ![](image)

- **Statewide Outreach:** Problem-based learning experiences (for first-year MD students) include the communities of Hilo, Kona, North Kohala and Hilo (Hawai‘i), Kauhulu, Waikoloa, Kīhei, Lahaina, Kula (Maui), Kaunakakai (Moloka‘i), Lāna‘i City (Lāna‘i), and Kapa‘a, Lihue, ‘Ele‘ele, Kilauea and Waimea (Kaua‘i).

- **Host Culture:** For more than three decades, the medical school’s ‘Imi Ho‘ola Post-Baccalaureate Program has recruited promising students from historically under-represented and/or disadvantaged communities. Nearly all 240 physicians that have participated in this program (approximately 40% of them Native Hawaiians) having graduated from JABSOM’s MD program, practice in underserved communities to provide needed medical care.

- **Global Impact:** JABSOM promotes global health and international education with faculty and students involved in projects with approximately 18 countries and memorandum of understandings with 27 international universities, primarily in the Asia-Pacific region.

- **Economic Impact:** JABSOM attracts more than $40 million annually in external/extramural funding which flows into the Hawai‘i economy through grant-funded jobs, local supply/equipment purchases and construction.

**JABSOM’s Mission Based Budget**

- **Infrastructure:** 20%
- **Medical Doctorate Education:** 23%
- **Research & Discovery:** 36%
- **Graduate Medical Education:** 15%
- **Clinical & Basic Science Students:** 5%

*Infrastructure includes Health Sciences Library, Translational Research Clinic, Willed Body Anatomy Lab, Level 3 Biosafety Lab, Central Plant Services, Animal Vivarium, Conference Rooms, Courtyard, and Waiaula Café.

Student Enrollment - Fall 2014

**John A. Burns School of Medicine**

- Doctor of Medicine (MD): 268
- ‘Imi Ho‘ola Post-Baccalaureate Program: 12
- Graduate Medical Education Residents: 229
- Master of Science (MS) or Doctor of Philosophy (PhD) in
  - Biomedical Sciences: 19 MS, 17 PhD
  - Cell & Molecular Biology: 2 MS, 24 PhD
  - Developmental & Reproductive Biology: 9 MS, 8 PhD
- Public Health
  - Epidemiology: 15 PhD
  - Other: 35 BA, 15 DrPh, 67 MPH, 2 MS
- Master’s Degree (MS) in Communication Sciences Disorders: 24
- Bachelor of Science (BS) degree in Medical Technology: 14
- Medical Technology Post-Baccalaureate Program: 9
- Doctor of Medicine Early Acceptance Program: 18

Ethnic Diversity - Fall 2014

- **Vietnamese:** 3%
- **Native Hawaiian or Part-Hawaiian:** 10%
- **Mixed Race (2 or more):** 12%
- **Mixed Asian:** 12%
- **Korean:** 3%
- **Japanese:** 15%
- **Filipino:** 6%
- **Chinese:** 10%
- **Caucasian or White:** 21%
- **Asian Indian:** 2%
- **Other:** 4%
National Cancer Institute Designation

The UH Cancer Center is one of 68 institutions in the United States that hold the prestigious National Cancer Institute (NCI) designation, and is the only NCI-designated center in Hawai‘i and the Pacific. Designation is achieved through a rigorous national review process and is a recognition of scientific excellence and outstanding leadership. The NCI designation not only recognizes excellence but opens doors to greater federal funding, information sharing, clinical trials, and resources for the people of Hawai‘i and the Pacific.

Focus on Hawai‘i and the Pacific

The UH Cancer Center currently conducts more than 100 cancer research projects in five interdisciplinary research programs:

- **The Cancer Biology Program** investigates mechanisms that drive cancer development and progression, and works to translate the discoveries into more effective prevention, detection, and therapies.

- **The Cancer Epidemiology Program** examines the underlying ethnic and racial differences in cancer incidence and mortality, and studies the role that lifestyle, genetics, and infectious agents play.

- **The Cancer Prevention and Control Program** seeks to advance understanding of behavioral, psychosocial, biological, social, and environmental factors associated with cancer; test interventions to reduce cancer risk, increase early detection, and improve survivorship; and disseminate research that benefits multi-ethnic, multicultural, and underserved populations.

- **The Natural Products and Experimental Therapeutics Program** focuses on translational drug discovery and development, with emphasis on identifying safe and effective natural product-based anticancer drugs. The program takes advantage of the vast natural product resources of Hawai‘i and the Pacific region.

- **The Clinical and Translational Research Program** aims to translate research discoveries into clinical applications. The Center’s clinical trials system gives Hawaii-based patients and care providers access to the most promising research opportunities, and contributes Hawai‘i’s unique multi-ethnic population to national trials. To search for NCI-sponsored clinical trials in Hawai‘i go to: [www.cancer.gov/clinicaltrials/search](http://www.cancer.gov/clinicaltrials/search)

Areas of Excellence

- **Clinical Sciences**—The University of Hawai‘i Cancer Center is currently involved in various clinical trials, each with the potential to save lives. The Center plans to further develop the program and work collaboratively with local providers to offer clinical trials that could lead to cancer treatment breakthroughs.

- **Breast Cancer**—Innovative research in breast cancer prevention and treatment is taking place to change the statistics. Results from the research can have tremendous implications on the care and treatment of breast cancer patients based on ethnicity.

- **Liver Cancer**—is the third most common cause of cancer death worldwide and the leading cause of cancer death among Chinese, Filipino, and Hawaiian males in Hawai‘i. The diverse populations in the state provide researchers unique opportunities to study cancer in relation to different ethnic groups to develop prevention strategies to reduce liver cancer among people at greater risk.

- **Childhood Cancer**—Tremendous progress has been made in treating children’s cancers, but much work remains to be done. The childhood cancer team conducts research in the areas of neuroblastoma, leukemia and other pediatric cancers. This team is dedicated to research that will lead to better treatments for children worldwide.

- **Hawai‘i Cancer Consortium**—consists of the UH Cancer Center together with its clinical partners, The Queen’s Medical Center, Hawai‘i Pacific Health, Kuakini Medical Center and UH Mānoa’s John A. Burns School of Medicine. The Cancer Consortium is an alliance of the state’s leading healthcare organizations united in a common goal of eliminating cancer through science.

- **The Hawai‘i Tumor Registry**—The Cancer Center is home to the Hawai‘i Tumor Registry, which collects information on cancer incidence and outcomes, and provides a local database for research and treatment. The Registry staff and Cancer Center researchers collaborate with the state Department of Health to create Hawai‘i Cancer Facts & Figures, the statistical picture of cancer incidence and mortality in Hawai‘i. Cancer Center staff also work with other Hawai‘i cancer stakeholders as part of the Hawai‘i Comprehensive Cancer Control Coalition, which crafts the Hawai‘i State Cancer Plan.
What is a Community-Based School?*

A community-based medical school partners with community hospitals to achieve its educational mission, rather than having a traditional university hospital that is integrated with the school. This follows the “community-based” movement that supports the belief that medical education focuses largely on the needs of the community where students are provided opportunities to interact with and learn from people from a wide range of social, cultural, and ethnic backgrounds. The John A. Burns School of Medicine is a Liaison Committee on Medical Education (LCME) nationally-accredited community-based medical school.

In community-based medical schools, education is distributed throughout community hospitals and clinics. This allows students to experience a wide spectrum of health problems, which includes caring for medically underserved populations. Community-based education also provides the student exposure to practicing medicine in our community, thus encouraging more students to remain and practice here in Hawai‘i.

Currently there are 28 schools (out of 141 LCME accredited M.D.-granting medical schools) in the U.S. that are designated Community-Based Medical Schools, including JABSOM.

JABSOM Affiliated Teaching Hospitals

Extramural (Grants & Contracts) Funding

JABSOM is leading the way with over $40 million dollars in revenues generated by contracts and grants (FY 2013). Since community-based medical schools do not have an integrated university hospital, extramural funding is an important source of revenue. The chart below displays the top seven community-based APLU (Association of Public and Land-grant Universities) medical schools’ extramural funding (with similar range of MD student enrollment).

Community-based Education Benefits **

- Student exposure to practice settings more typical of places in which they will eventually practice medicine.
- Student access to a wider variety of patients, with more opportunity to develop and practice clinical skills with greater continuity across a broader continuum of care.
- More enjoyable educational experiences, with teachers more likely to model positive teaching attitudes.
- For students, professors and the larger medical/business community, the economic engines of research are expanded and ‘distributed’ into the community.
- Sponsoring organizations avoid the expense of duplicating costly medical/technical infrastructure common to tertiary teaching hospitals.
- Communities are better able to access the ‘up and coming’ physician workforce and thus better able to address local physician shortages – to recruit and retain medical graduates.


Graduate Medical Education

What is Graduate Medical Education?
In order to practice medicine in the U.S. a physician is required to complete undergraduate education, medical school, and graduate medical education (GME). The term “graduate medical education” includes residency and fellowship training. As a community-based medical school, JABSOM is the sponsoring academic institution for graduate medical education in Hawai‘i. The Hawai‘i Residency Programs, Inc. is the organization that administers and manages the various programs.

Accredited GME Training Programs
Currently the Hawai‘i Residency Program consists of 10 Accreditation Council of Graduate Medical Education (ACGME) accredited residency training programs and eight post-residency fellowships under the academic auspices of JABSOM. Over 250 resident employees and approximately 60 support staff in healthcare facilities across the state are employed under the Hawaii Residency Program. Training programs are currently under the following specialties:

- Internal Medicine (including Geriatrics and Cardiovascular Disease fellowships)
- Surgery (including Surgical Critical Care)
- Family Medicine (including Sports Medicine)
- Psychiatry (including Geriatric, Child and Adolescent and Addictions)
- Obstetrics and Gynecology
- Pediatrics (including Neonatal-Perinatal)
- Pathology
- Orthopaedic Surgery
- Transitional Year Residency Program — a single year of clinical experience in various disciplines such as medicine and surgery
- Triple Board Residency Program — is accredited by Pediatrics, Psychiatry, and Child and Adolescent Psychiatry

Affiliated Medical Organizations
In addition to JABSOM employed faculty, there are over 1,200 volunteer faculty that train residents and fellows throughout various organizations in Hawai‘i. The following are affiliated medical centers and medical organizations that support graduate medical education throughout the state.

- Medical Centers
  - The Queen’s Medical Center
  - Kuakini Medical Center
  - Kapi‘olani Medical Center for Women and Children
  - Kaiser Medical Center
  - Shriners Hospital for Children, Honolulu
  - Straub Hospital
  - Tripler Army Medical Center VA
  - Wahiawa General Hospital

- Affiliated Medical Organizations
  - The Hawai‘i Medical Association
  - The Hawai‘i Medical Library
  - The Hawai‘i Chapter of the American College of Surgeons
  - The Hawai‘i Chapter of the American College of Physicians
  - The Hawai‘i Psychiatric Medical Association

Pediatrics Residency Program at Kapi‘olani Medical Center for Women & Children
**Educational Impact**

- 81 Physicians residing in district are M.D. alumni
- 24 Current JABSOM students from Hawai’i Island
  - 17 Medical
  - 1 Biomedical Science
  - 6 Public Health
- 1 UH Cancer Center intern

**Outreach and Service Impact**

- INBRE (IDeA Network for Biomedical Research Excellence)—
  Provides students from UH Hilo and all of the UH community colleges with the opportunity to have research experiences in research labs. Offered every semester since 2011.

- JABSOM’s physician workforce shortage study and action plan—The program extends a helping hand to MDs, physician assistants and nurse practitioners who commit to serve for at least two years in certain rural areas of the State. Currently recipients of this program are working at West Hawai’i Community Health Center and Hui Mālama Ola Nā ‘Olwi (prior to closure).

- Family Medicine Clerkship—Third-Year medical students train in community health centers, hospitals and private practices during their Family Medicine Clerkship. A committed effort is made to send students to rural, economically depressed, and neighbor island communities where there is limited access to medical services. Services are provided at the following location on Hawai’i Island: Hilo Family Medicine, VA Hilo, Hilo Medical Center, Kaiser Permanente – Waimea Clinic, and several private practice locations.

- JABSOM students volunteered in the Teen Health Camp in Kona.

**Research Impact**

- Respiratory HEALTH Initiative Leader, Dr. Elizabeth Tam (JABSOM), has focused her research on asthma exacerbation and environmental triggers, examining the effects of Volcanic Organic Gas (VOG), tobacco, allergens, as well as gene-environment interactions. Dr. Tam has partnered with the Department of Education, Hawai’i Island Rural Health Association, the Ka’u Rural Health Community Association, and local health providers to conduct community and school-based studies to assess the effects of VOG on Hawai’i Island residents.
  - The Hawai’i Island Children’s Lung Assessment Scientific Study (HICLASS) examines the long-term effects of VOG on children.
  - The Impact of Vog on Respiratory Health looks at respiratory issues with exposure to VOG and the effects on health.
  - Allergic Inflammation to Airway Remodeling in Asthma study examines the basic mechanisms in asthma as a focus of the Immunogenetic Diseases.

These VOG studies embrace a community-based participatory research approach, involving community members as co-equal partners who have an active role in planning and conducting the research.

- Dr. Leng Chee Chang (UH Cancer Center) is studying how Vernonia cinerea (Vc) and Physalis peruviana (poha berry) can be used to fight cancer. The crude organic extract from the whole poha plant has anti-inflammatory activity in vitro, having shown inhibition of MDA-MB-231 breast cancer cells. The long-term goal of Dr. Chang’s lab is to discover safe and efficacious natural product-based inhibitors of aberrantly-active Stat3 for treating glioblastoma multiforme.
Community Impact

NHCOE Health Career Presentations
Native Hawaiian Center of Excellence faculty and staff conducted presentations at community health fairs and school events across the state to encourage youth to live healthy lifestyles and to enter health professions. This included presentations by NHCOE physician mentors on “Becoming a Doctor” and discussions with Native Hawaiian students in grades 8-12 during Na Pua No’eau’s Learning Opportunities in Medicine Institute (L.O.M.I.) program in Hilo and Kohala.

Run for Hope—Kailua-Kona
A group of UH Cancer Center volunteers went to the Run for Hope, a benefit for cancer research, on the Big Island in September 2014 to assist at the fundraising events planned in concert with the West Hawai’i Cancer Symposium. The volunteers cleared tables, prepared race packets, helped at the tennis tournament, and marked the race course during the weekend. From left to right: Todd Kawamoto, Crissy Terawaki Kawamoto, Patti Corrales, Richard Yip, Yuanyuan Fu, Tammy Jo Harrison, Paul Anastasiadis, Sharon Shigemasa, and Shugeng Cao.

Hawai’i Island Workforce
Dr. Malia Haleakala, JABSOM Class of 2004, an emergency physician, now practices at Hilo Medical Center and serves as a site coordinator for our third-year medical students. Dr. Haleakala was able to spend part of her fourth year of MD study at North Hawai’i Community Hospital, where the community grabbed her affection. “I fell in love with the hospital and the community,” Dr. Haleakala said. “My husband and I decided that this is where we wanted to live. My family and I are happy with our decision to live and work here, and plan to stay.”

ʻImi Hoʻōla Graduates Start Medical School
Eight of the new MD Class of 2018 students are graduates from the ʻImi Hoʻōla (“Those who seek to heal”) Post-Baccalaureate Program. They include college graduates who hail from Hilo, Waiʻanae, Waialua, Honolulu, Guam, Pohnpei (of the Federated States of Micronesia) and Luzon (in the Philippines). The ʻImi Hoʻōla program selects applicants from socially and economically disadvantaged backgrounds or communities. Approximately 80% of the doctors trained through the ʻImi Hoʻōla program are practicing medicine in underserved neighborhoods in Hawai’i where they are needed most.
Maui, Moloka‘i, Lāna‘i
Senate Districts 5-7, House Districts 8-13

Educational Impact

- 41 Physicians residing in district are M.D. alumni
- 15 Current JABSOM students from Maui County
  - 8 Medical
  - 2 Biomedical Science
  - 5 Public Health

Outreach and Service Impact

- **Kalaupapa Community Service Project** — ‘īmi Hoʻola students perform an annual service learning project in the Kalaupapa settlement on Moloka‘i. Students learn about Hansen’s disease and its impact on individuals, family, community and society through interaction with remaining patients in the settlement. Extensive research, fundraising, and planning is conducted by students and faculty for a successful service learning experience.

- **Department of Health, Child and Adolescent Mental Health Division (CAMHD)** — Through service-learning, JABSOM’s Department of Psychiatry and its trainees provide child and adolescent psychiatric services at the Family Guidance Centers throughout the State.

- **Pacific Short-Term Research Experience for Underrepresented Persons Program (STEP-UP)** is an 8-week summer internship that provides high school students in Hawai‘i the opportunity to work in a research facility to gain practical laboratory experiences under the supervision of a research mentor. JABSOM has been involved with the STEP-UP Program since 2001 under director, Dr. George Hui.

- **Third-Year medical students train in community health centers, hospitals and private practices during their Family Medicine Clerkship.** A committed effort is made to send students to rural, economically depressed, and neighbor communities where they can assist physicians in contributing to the health care of infants, children and adults who may have limited access to medical services. Services are provided at the following location in Maui County: Kula Hospital and Clinic, Kaiser Permanent - Maui Lani Clinic, and Wailea Medical Center, and one private practice locations.

Research Impact

- **Researchers at JABSOM, Kuakini Medical Center, and U.S. Veterans Affairs published an article that associates height with mortality.** The researchers showed that shorter men were more likely to have a protective form of the longevity gene, FOXO3, leading to smaller body size during early development and a longer lifespan. Shorter men were also more likely to have lower blood insulin levels and less cancer. Dr. Bradley Willcox stated “this study shows for the first time, that body size is linked to this gene.” The study participants included 8,003 American men with Japanese ancestry. More study is needed to verify the findings and determine whether they can be generalized to other ethnic groups or populations.

- **Hawai‘i’s Anti-Cancer natural Products**—Oceans cover nearly 70% of the earth’s surface and possess nearly 300,000 described species of plants and animals from marine sources, comprising about half of the total biodiversity. However, the development of marine natural products as therapeutic agents is still in its early stages due to the lack of an analogous ethno-medical history and the relative technical difficulties in collecting the marine floral samples. One of the ongoing studies include Dr. Shugeng Cao’s laboratory, which focuses on exploring bacteria, endophytic fungi and marine-associated microorganisms for anticancer drug discovery.
Community Impact

Premedical Student Workshop - UH Maui

The Medical Student Mentorship Program (MSMP) is a student-run organization that pairs current John A. Burns School of Medicine medical students with undergraduate students in Hawai‘i interested in pursuing a career in medicine. Through these pairings, our goal is to help foster relationships between undergraduates and medical students and faculty. Thus far, over 600 mentees with medical student mentors have been paired via an extensive matching process. Mentor-mentee pairs contact each other regularly and participate in a variety of activities throughout the year.

State Loan Repayment Program

December 2013, 11 health care providers — doctors and advanced practice nurses — have been selected to receive up to $40,000 to repay their student loans in exchange for working in a Health Profession Shortage Area in Hawai‘i for two years. In December 2013, three were selected to work in Maui County. They include family nurse practitioner Aileen Duran working on Lāna‘i, Denise Houghtaling working on Moloka‘i, and Dr. Duffy Casey, obstetrician, working on Maui. Other recipients include five on O‘ahu and one on Hawai‘i Island.

Moloka‘i—Puni Ke Ola (2006—Present)

The Puni Ke Ola project was initiated from a desire to use youth in a drug prevention and health promotion program that is grounded in Hawaiian epistemology. The goal of the project is to develop a culturally grounded drug prevention intervention in partnership with the community by following community-based participatory action research principles. Methods focused on photovoice (photography with social action) with youth, kaupua, and community leaders. Ten youth leaders who had demonstrated leadership in the area of drug prevention joined the project, ranging in age from 13 to 18 years old.

Hui No Ke Ola Pono— Heart 101

The Department of Native Hawaiian Health Community Engagement Division conducts a heart disease education program, which provides an overview of heart disease with a focus on Native Hawaiian and other Pacific Islanders. The seminar was specifically designed for allied health professionals (community health workers, interpreters, case workers) to improve their understanding about cardiovascular disease. Strategies for incorporating pacific cultural norms and practices into patient interactions are discussed.
Kaua‘i, Ni‘ihau
Senate District 8, House Districts 14-16

Educational Impact
- 22 Physicians residing in district are M.D. alumni
- 2 Current JABSOM MD students from Kaua‘i

Outreach and Service Impact
- **Family Medicine Clerkship**—Third-Year medical students train in community health centers, hospitals and private practices during their Family Medicine Clerkship. A committed effort is made to send students to rural, economically depressed, and neighbor communities where they can assist physicians in contributing to the health care of infants, children and adults who may have limited access to medical services. Services are provided at the North Shore Medical Center and the Kaua‘i Community Health Center on Kaua‘i Island.
- **Native Hawaiian Center of Excellence (NCOE) and ‘Imi Ho‘ōla Post-Baccalaureate Program**—Several school were hosted by JABSOM’s NHOE including Kaua‘i—HOSAs (Health Occupations Student Association) and Na Pu‘u No‘eau students.
- **JABSOM medical students participant in the curriculum Healthy Keiki Can**, a community-based program with Nānākuli High and Intermediate School partnership promotes the healthy development of Hawai‘i’s youth by providing mentoring relationships that offer guidance, companionship, and support.

Research
- **Sea sponge growing in the waters off Kaua‘i** is being assessed for cancer fighting properties in the Natural Products and Experimental Therapeutics (NPET) Program at the UH Cancer Center. Sea sponges are being investigated around the world for their cancer fighting properties, and some contain substances that are showing some promise in treating breast, pancreatic and brain cancers, among others. The goal of the NPET Program is to lead a translational drug discovery and development research, with the emphasis on the identification of natural product-based therapeutics.
- **JABSOM’s Communication Sciences Disorders Department is collecting narrative samples for the purposes of assessment and evaluation of language usage in children**. Trends revealed in the samples collected will be compared to available data of children’s language in the United States. Specifically we are interested in the influences of Hawaiian pidgin and how it affects the use of language. Roughly 250 language samples from students on O‘ahu, Kaua‘i, and the Big Island have been collected.
- **Dr. Angel Yanagihara, Director of the Pacific Cnidaria Research Lab and an assistant research professor with the Pacific Biosciences Research Center at JABSOM, has become one of the world’s go-to experts on the box jellyfish and the venom** that irritates and sometimes kills people in the ocean. Dr. Yanagihara has developed an ointment she calls the “sting stopper” to combat the painful stings from box jellies. Recently, Dr. Yanagihara used her “sting stopper” to help 64 year-old swimmer Diana Nyad make history by swimming solo across the channel from Cuba to Florida.

Photo by Keoki Stender
Alumni Excellence Working on Kaua‘i
Dr. Momi Elizabeth Ka‘anoi, an ‘Imi Ho‘ola Post-Baccalaureate Program and University of Hawai‘i Family Medicine Residency Program graduate, is the most recent alumna of JABSOM to be named a Distinguished Alumnae of the Sacred Hearts Academy. As a recipient of the Native Hawaiian Health Scholarship, Dr. Ka‘anoi worked with Ho‘ola Lāhui Hawai‘i, the Native Hawaiian healthcare system on Kaua‘i for five years and helped start the first community health center. She also started new clinics in Kapa‘a and Waimea.

New Frontiers: Unraveling Cancer in Hawai‘i
A public event called “New Frontiers: Unraveling Cancer in Hawai‘i” was held at the Kaua‘i Community College. This event is part of a series of Neighbor Island outreach education events hosted by the Cancer Center, with support from the Friends of the UH Cancer Center. Attendees heard from the speakers who addressed the role of genetics, nutrition and other factors in cancer prevention and care. The program concluded with an interactive question and answer panel session. Speakers included Maryanne Kusaka (former Mayor of the County of Kaua‘i), Dr. David Ward (UH Cancer Center), and Dr. Katarina Leckova (oncologist, Kaua‘i Medical Clinic).

Enhancing the Statewide Trauma Network
The aim of “Enhancing the Statewide Trauma Network,” or “ESTN,” is to develop community networks of health service providers and community members who share the same knowledge and language related to suicide prevention. Trauma centers and emergency departments (EDs) are often the first stop when a youth is suicidal or attempts suicide. All 24 EDs in the state are targeted for this project. As ESTN has recruited and partnered with 17 of the 23 EDs, with 39 trainers in emergency department and mental health provider modules. We now have activity on all islands.

Get Fit Kaua‘i
The Office of Public Health Studies collaborates with community organizations and the Kaua‘i County Nutrition & Physical Activity Coalition (NPAC) in Get Fit Kaua‘i. The NPAC is charged with improving health in the areas of physical activity and nutrition through systems and environmental changes, based on the social-ecological model. Get Fit Kaua‘i has developed the following task forces to address priority areas: built environment (buildings, land use, public resources, zoning regulations and transportation systems); schools and childcare facilities; worksites; and nutrition and food systems.
Educational Impact

- 1,005 Physicians residing in district are M.D. alumni
- 354 Current JABSOM students from O‘ahu
  - 202 Medical
  - 18 Biomedical Science
  - 16 Cell & Molecular Biology
  - 7 Communication Science & Disorders
  - 12 Developmental & Reproductive Biology
  - 8 Medical Technology
  - 91 Public Health
- 18 UH Cancer Center interns

Outreach and Service Impact

- The Department of Native Hawaiian Health Community Engagement Division conducted Diabetes Self-Management and Land, Food, and Health initiative programs at several locations on O‘ahu, which combines diabetes self-management classes and activities that reconnect patients with Pacific concepts of land and health.

- JABSOM’s Keiki Health Camp—The second annual camp hosted approximately 70 elementary aged children, with a special focus on homeless and lower socio-economic students. Healthy diet, anatomy, sun safety and exercise were some of the topics covered.

- UH Cancer Center employees donated food, money, clothing, books, and toiletries to the help the homeless at the Next Step shelter in Kaka‘ako run by the nonprofit Waikiki Health.

- Sunny Buddies is a community health activity in collaboration with Easter Seals Hawai‘i—The Sunny Buddies help medical students gain a better understanding of an underserved population, while the "buddies" receive much-needed social interaction in a safe and friendly environment.

Research Impact

- Researcher from JABSOM has uncovered a genetic explanation for why Filipino women in the state have a higher chance of delivering their babies before full term. The research found a small genetic mutational change in the women’s DNA was linked to the higher levels of the protein relaxin in the uterine cells. Researchers selected maternal blood, DNA, and tissue from the UH Biospecimen Repository. The repository contains a collection of samples from over 8,000 pregnant women in Hawai‘i who volunteered over several years. Nearly 12% (11.7%) of Filipinos in Hawai‘i deliver their babies early compared to either white (7.2%) or other Asian populations (9.0%) in the state. With this new information, pregnant Filipino patients could potentially be offered a test to show if they were at high risk and in any event, be more carefully monitored.

- The undersea environment is being explored for potential new weapons in the fight against cancer. A deep sea submersible from the Hawai‘i Undersea Research Lab (HURL), part of the School of Ocean and Earth Sciences at UH Mānoa, takes samples of the sea floor off Barber’s Point. Researchers from the UH Cancer Center will carefully and laboriously screen the samples for potential anti-cancer agents.
Community Impact

Hula for Breast Cancer Survivors
UH Cancer Center researchers have initiated a study to determine if hula might be an enjoyable and effective strategy to increase physical activity for breast cancer survivors. Studies have shown that physical activity is important for reducing a women’s risk of the breast cancer recurrence. The study started in 2014 with participants attending hula class at the UH Cancer Center twice a week for a total of six months. In the photo, the hula instructor, TeMoana Makolo (front) is providing a short lesson for a few members of the UH Cancer Center, including two investigators leading the study.

UH Cancer Center Summer Internship
The program is a full-time experience that aims to enhance students' skill in research practices, analytical thinking, presentations and ethics, nurturing their interest in potential careers in cancer research. This year 31 interns were selected. High schools included Kamehameha (3), Waia'anae (1), Punahou (2), Waipahu (2), Damien (1) and Maryknoll (1), colleges included UH Mänoa (8) and UH Hilo (1). Interns are matched with a researcher and work on a small project together. At the conclusion, interns give presentations about their project to their peers, mentors, and others interested in the research.

UH Speech and Hearing Clinic
For more than 45 years, the University of Hawai’i Speech and Hearing Clinic has been providing speech, language, and hearing services to the Hawai’i community. The clinic provides multi-disciplinary diagnostic evaluations and therapeutic services to children and adults on an outpatient basis. Our sound booth, audiological diagnostic testing equipment, and hearing aid fitting and verification devices are all newly purchased. Services include clinical care for hearing impairment and hearing aid series. All faculty members are active members of the Hawai’i Speech-Language and Hearing Association.

Driving While Intoxicated (DWI) Counseling
A collaboration between the Department of Psychiatry and the State of Hawai’i First Circuit District Court provides assessment, referral and case management of individuals with multiple DWI convictions. Research has shown incarceration alone does not stop individuals from re-offending. The DWI program emphasizes personal accountability through case management, alcohol monitoring and treatment. The program operates in progressive phases, with offenders gaining the needed skills to maintain their sobriety upon program completion. Most offenders complete the program in 12 months.