The Multiethnic Cohort Study

Research, Education and Training

UNIVERSITY OF HAWAI'I CANCER CENTER

USC University of Southern California

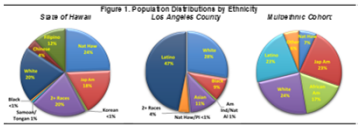
Specific Aims

Creating a dual-site training to strengthen the postdoctoral training program
- UHCC – lifestyle, diet/nutrition and biomarker
- USC – genetic/molecular epidemiology, biostatistics/bioinformatics

The specific aims are to:
- Train postdoctoral fellows for independent careers in cancer research in diverse populations, focusing on the sociocultural, nutritional, lifestyle and biological risk factors
- Provide extensive applied research experience in a multidisciplinary environment focusing on nutritional, molecular, genetic and translational epidemiology that builds on multiple unique racial and ethnically diverse studies of cancer

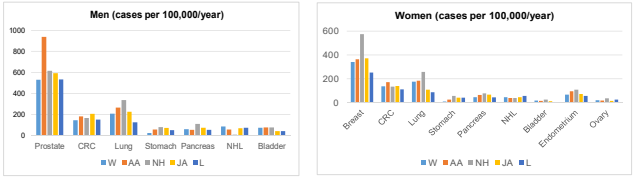
Background

If the study of ethnic/racial health disparities in cancer begins with recognition of unfavorable outcomes in specific groups, the study of ethnic/racial cancer disparities begins with an understanding of how the characteristics of each ethnic and racial group lead to the development of cancer and affect the outcome of cancer.



The populations of Hawaii and California are composed of diverse ethnic groups (**Figure 1**) In both locations, large segments of the population are of low socioeconomic status, underserved in terms of health care, suffer disproportionate rates of chronic disease, such as cancer, and experience higher mortality.

Figure 2: Cancer Incidence by Ethnicity (MEC)



None of the ethnic groups in the MEC have a uniformly high risk for all cancers. For example **(Figure 2):**
- Native Hawaiians, have unexpectedly high risks of breast and lung cancer but relatively low risks of colorectal and prostate cancer.
- Latinos also have higher incidence rates of acute lymphocytic leukemia and are more likely to die of the disease than other groups.

Cancer disparities have been linked to:
- Differences in health insurance
- Access to care and treatment
- Environmental exposures
- Health behaviors related to sociocultural factors
- Cultural background influences health-related behaviors

Program Plan

The proposed 5-year training program will:
- Educate 18 postdoctoral fellows at UHCC (n=8) and USC/NCCC (n=10) to investigate the behavioral, environmental and biological causes of cancer disparities among ethnic/racial minorities
- Translate findings to reduce specific disparities in cancer risk and outcomes
- Provide a collaboration between researchers of different disciplines, cultures and vocabularies, giving students a wide range experience and knowledge from their respective mentors

Trainees Information

Table 1: Number of Trainees

High School Students	Undergraduate Students	Graduate Students	Medical Students	Post-doctoral Fellows
1	6	40	12	38

Table 2: List of Current Institutions for previous Post-Doctoral Fellows

Ancestry.com	University of Alberta, Canada
Bonn, Germany	University of Arizona
Cancer Prevention Institute of California	University of California San Diego Health System
Cincinnati Children's Hospital	University of Denver
Dalhousie University	University of Fullerton
Duke University	University of Hawaii Cancer Center
Fishrock Laboratories	University of Illinois at Chicago
Hague University of Applied Sciences, Netherlands	University of Memphis
Kaiser Permanente Institute for Health Research	University of Nebraska
King's College London	University of North Texas Health Science Center
Max Delbrueck Center, Berlin, Germany	University of Southern California
MD Anderson Center	University of Tennessee
Medtronic Inc.	University of Texas San Antonio
Miami University	University of Virginia
The Ohio State University Wexner Medical Center	Vanderbilt University

Research Experience

Individualized training program objectives and plans will be developed based on the trainee's academic preparation and career goals. This is measured annually by producing:
- At least 1 first author and 2 co-authored papers
- At least 1 conference abstract
- One grant application during the second year

The Cancer Center molecular/genomics Cores, some of the mentors also have molecular epidemiology laboratories to provide opportunities to obtain additional training in lab-related processes, protocols and analyses that are critical for epidemiological studies.

Educational Component

Training curriculum will also include:
- ***Weekly seminars***: 2-hour session every week to expand research skills and knowledge about ethnic cancer disparities
- ***Career development***: prepare trainees in time-management, research career options, non-academic research positions and job search skills (example: interviews and job talks)
- ***Leadership training***: To prepare the junior scientists for their careers in large organizations and to give them more confidence in taking on leadership roles, we plan to invite qualified individuals with leadership experience twice a year to share their career and experience with fellows to help them to prepare for future positions
- ***Grant writing***: mentors with outstanding records in obtaining peer-reviewed funding will offer grant writing sessions twice a year
- ***Mock grant review***: assist in the preparation and review of a mock grant application as soon as the trainee has developed an appropriate project idea
- ***Pilot project programs***: Both institutions have pilot programs in place to allow qualified researchers to start new projects

2018 Summer Interns

Figure 3: 2018 Summer Interns at Orientation: June 4, 2018

Figure 4: 2018 Summer Interns at the UROP SURE Symposium: August 3, 2018