R01 Funded Investigators at JABSOM

Youping Deng, PhD - Department of Integrative and Complementary Medicine

PROFILING GENOME-WIDE CIRCULATING NCRNAS FOR THE EARLY DETECTION OF LUNG CANCER (CA223490)

Diagnosis of lung cancer frequently involves computed tomography, which has a high rate of false positive results and can thus require further invasive screening. Dr. Deng and his lab are identifying blood-based microRNA biomarkers to augment the diagnostic accuracy of current methods. The findings may lead to an accurate non-invasive test for early lung cancer detection.

CIRCULATING LIPID AND MIRNA MARKERS FOR EARLY DETECTION OF BREAST CANCER AMONG WOMEN WITH ABNORMAL MAMMOGRAMS (CA230514)

Most abnormal mammograms are false positives requiring biopsies and additional imaging. Dr. Deng's research will identify circulating lipid and microRNA (miRNA) signatures for use as a diagnostic tool to reduce unnecessary follow-up procedures. He and his team are testing lipids and miRNA ratios that can distinguish early-stage breast cancer from benign samples with >90% accuracy. Their results will have major implications for early detection of breast cancer.

Peter R. Hoffmann, PhD - Department of Cell and Molecular Biology

THE ROLE OF SELENOPROTEIN I IN PHOSPHOLIPIDETHANOLAMINE DEPENDENT MECHANISMS THAT REGULATE T CELL ACTIVATION (AI147496)

Prior research by Dr. Hoffmann and his team has uncovered an important role for selenoprotein I in exerting the effects of dietary selenium on T cell immune responses. In the current study they will determine the precise role of this protein in regulating immune cell functions and contributing to optimal immunity.

Claire Townsend Ing, DrPH - Department of Native Hawaiian Health

THE PILI 'ĀINA PROJECT (HL168858)

In this 5-year study, Dr. Townsend-Ing and her team will adapt and test PILI ʻĀina, an evidence-based multilevel intervention method they developed to promote healthy eating, weight loss, and cardiovascular health for overweight/obese Native Hawaiian adults. The team will work with community members to promote traditional diets and social cohesion in Native Hawaiian homesteads to reduce risk factors for diet-related illnesses, and improve the self-management of cardiometabolic diseases prevalent in the community.

Marjorie K. Mau, MD (Multiple PI) - Department of Native Hawaiian Health

I KUA NA'U "LET ME CARRY OUT YOUR LAST WISHES" ADVANCE CARE PLANNING FOR NATIVE HAWAIIAN ELDERS (NR018400, awarded to Tufts Medical Center)

Despite the rapid expansion of advance care planning (ACP) services in the health care system, Native Hawaiians consistently have negligible rates of ACP and low use of palliative and hospice care services. To address these shortcomings, our multi-disciplinary community and research group has partnered together to create the I kua na'u "Let Me Carry Out Your Last Wishes" ACP video intervention.

Alika Maunakea, PhD - Department of Anatomy, Biochemistry and Physiology

SOCIOECOLOGICAL DETERMINANTS OF IMMUNOEPIGENETIC SIGNATURES OF DIABETES RISK IN INDIGENOUS COMMUNITIES (MD016593)

We propose a hypothesis that the social environment conditions the epigenomic landscape and gut microbiome composition that regulate inflammation and metabolic pathways underlying DM. Using a new cohort of NHPIs and that of their social networks, we will examine associations with neighborhood- and interpersonal-level social factors using a cross-sectional study design and explore the mechanistic basis to which this signature may underlie innate DM-relevant traits to determine the degree to which this signature may prospectively be predictive of DM outcome.

R01 Funded Investigators at JABSOM

Jesse B. Owens, PhD - Department of Anatomy, Biochemistry and Physiology

DIRECTED EVOLUTION OF A SEQUENCE-SPECIFIC TARGETING TECHNOLOGY FOR THERAPEUTIC GENE DELIVERY TO THE HUMAN GENOME (EB031124)

Current tools for inserting genes have drawbacks such as immune response, limited gene size, and uncontrolled insertion which may lead to cancer. This project aims to develop a new tool capable of inserting therapeutic genes of flexible size to a safe location in the human genome. A treatment for Hemophilia B will be tested to demonstrate a therapeutically relevant application of this new technology.

Matthew W. Pitts, PhD - Department of Cell and Molecular Biology

ASSESSMENT OF THE JOINT INFLUENCE OF METHYLMERCURY AND SELENIUM UPON POSTNATAL BRAIN DEVELOPMENT AND RISK FOR PSYCHIATRIC DISORDERS (ES035851)

Dr. Pitts and his team are conducting a basic research study to understand the molecular and cellular mechanisms by which chronic low exposure to mercury during adolescence may contribute to the development of psychiatric disorders. They hypothesize that mercury inhibits the ability of selenoproteins to protect against oxidative stress in the brain, especially in fast-spiking, parvalbumin-expressing interneurons (PVIs). At the systemic level, the resulting excitatory-inhibitory imbalance in the brain could lead to changes in behavior and increased risk for psychiatric problems.

V. Andrew Stenger, PhD - Department of Medicine

RADIAL ECHO VOLUMAR IMAGING (EB028627)

Dr. Stenger and his team are developing pulse sequence and image reconstruction software for fast and motion robust magnetic resonance imaging (MRI), in particular, novel “Radial Echo Volumar Imaging” methods for brain MRI that are capable of high spatial resolutions with reduced artifacts related to motion in short acquisition times.

Wei-Kung Wang, MD, ScD - Department of Tropical Medicine, Medical Microbiology and Pharmacology

MULTIPLEX SERODIAGNOSTIC ASSAYS FOR PATHOGENIC ARBOVIRUSES IN BRAZIL (AI149502)

Dr. Wang will use fusion loop-mutated virus-like particles and nonstructural protein 1 proteins of flaviviruses to overcome cross-reactivity and combine with recombinant E2 and nucleocapsid proteins plus virus like particles of chikungunya virus (CHIKV), Mayaro virus (MAYV), and Oropouche virus (OROV) in two multiplex formats to develop sensitive and specific microsphere immunoassays for pathogenic arboviruses and investigate arbovirus seroprevalence in Bahia, Brazil.