

The California Initiative to Advance Precision Medicine (CIAPM) supports cutting-edge biomedical and health research that generates new insights, prioritizes whole-person care, and advances community-driven solutions to reduce health inequities. CIAPM is awarding approximately \$1.8 million to support 12 doctoral students in California over a 2.5-year project term conducting representative precision medicine research that includes underrepresented populations as research participants, so that research ultimately benefits all Californians and reduces health disparities.



Deborah Adeyemi | UC San Francisco

Characterizing Variation in Postpartum Readmission Risk Among Black Women Using Intersectional and Bayesian Approaches

In California, postpartum readmission rates have increased by 45% between 1997 and 2018, with the greatest risk among Black women, often driven by multiple social, structural, and clinical factors. Deborah Adeyemi aims to develop machine learning models to identify which Black women in California are at greatest risk for postpartum readmissions and examine how various factors intersect to shape risk across subgroups.

Isaac Bouchard | UC San Diego

Addressing Chronic Disease Disparities through Representative Generative Artificial Intelligence and Culturally Responsive, Whole-Person Precision Medicine Tools

Cardiovascular disease disproportionately affects minority and low-socioeconomic status groups. Digital health tools have recently incorporated behavioral health measures, though most tools lack the collection of cultural and contextual factors. Isaac Bouchard aims to design a culturally- and contextually-aware, AI-enabled "behavior change and mental health support tool" and create a model of care specifically for underrepresented groups with, or at risk for, cardiovascular disease.



Fan-Ying Chan | UC Irvine

Patient-Reported Outcomes and Artificial Intelligence-Informed Proactive Screening to Reduce Disparities Among Majority-Minority Cancer Population in Southern CA

Disparities in anticancer treatment and outcomes experienced by minority racial and ethnic groups may be driven by communication barriers such as language barriers, implicit bias, and time constraints and contribute to increased acute care use. Fan-Ying Chan aims to compare symptom burden in patient-reported outcomes to clinical notes to inform the development of an AI tool to predict acute care use in underrepresented groups.



Tracy Chidyausiku | Stanford

Integrating Citizen-Generated Lived-Experience Data with Electronic Health Records to Advance Representative Precision Diabetes Prevention in Low-Income Older Adults in CA

Type 2 diabetes and prediabetes are prevalent in California and lower socioeconomic communities bear higher disease burden and structural barriers to lifestyle modification as treatment. Tracy Chidyausiku aims to identify barriers and facilitators to outdoor walking for low-income older adults at high risk for poor diabetes outcomes in the Bay Area using mobile app and large health system data comparing neighborhood lived experiences with individual diabetes trajectories.



Amber Keith | UC Riverside

A Data-Driven Approach to Identify Immune Biomarkers to Diagnose and Prevent Pancreatic Cancer in African Americans

Pancreatic cancer is the third-leading cause of cancer-related deaths in the U.S. and disproportionately affects African Americans, who in California have a 24% higher diagnosis rate compared to all ethnicities combined, suggesting that environmental rather than genetic factors may play a major role. Amber Keith aims to create an interface that characterizes patients' cancer diagnoses and social factors to identify vulnerable groups, build an AI model to predict tumor aggressiveness, and investigate the relationship between specific tumor markers in African American patients.



Nikita Mohapatra | UC Davis

How Cumulative Social and Environmental Stress Shapes Recovery after Traumatic Brain Injury

Individuals with acute traumatic brain injury experience variability in recovery outcomes, affected by both clinical factors and by social and environmental stressors. Nikita Mohapatra aims to investigate whether biomarkers in patient serum show biological evidence of stress and whether that can explain differences in experienced traumatic brain injury recovery.



The California Initiative to Advance Precision Medicine (CIAPM) supports cutting-edge biomedical and health research that generates new insights, prioritizes whole-person care, and advances community-driven solutions to reduce health inequities. CIAPM is awarding approximately \$1.8 million to support 12 doctoral students in California over a 2.5-year project term conducting representative precision medicine research that includes underrepresented populations as research participants, so that research ultimately benefits all Californians and reduces health disparities.



Joseph Morrison | UC Davis

After the Break: Using X-rays and Machine Learning to Catch Bone Healing Problems Sooner

Tibial bone fractures of the lower leg are one of the most common surgical long-bone repairs, but they frequently experience incomplete healing, disproportionately affecting patients with limited access to care. Joseph Morrison aims to identify medical imaging features that can predict incorrect bone healing and inform AI-powered early identification of incomplete healing following surgery, particularly in rural and low healthcare access settings.



Sima Naderi | UC San Francisco

Improving Cervical Cancer Prevention and Screening through Precision Medicine for Afghan Adolescent Girls and Women in California

HPV-related cervical cancer is largely preventable through vaccination and screening, though vaccination and early identification are not readily accessible to all communities, especially immigrants, such as those from Middle Eastern and North African (MENA) countries. Sima Naderi aims to characterize HPV vaccination and cervical cancer screening among Afghan women and girls in the Bay Area and explore barriers to care.



Sujin Park | UC San Diego

Precision-fMRI Guided Biomarkers of Tourette Syndrome in Youth

Tics, or involuntary movements experienced by individuals with Tourette Syndrome, can have significant impacts on youth well-being and mental health. Using advanced brain imaging techniques, Sujin Park aims to identify neural markers associated with Tourette Syndrome and explore how environmental factors contribute to its diagnosis and symptoms during childhood and adolescence.



Nanase Toda | UC San Francisco

Uncovering Additional Contributors to Drug-Induced Angioedema Using Genomics, Transcriptomics, and Contemporary Social Determinants

Renin-angiotensin-aldosterone system inhibitors are first-line lifesaving medications for many conditions, including hypertension and heart failure. However, Black patients are disproportionately affected by its life-threatening side effect, angioedema, which is sudden swelling in the deep layers of the skin. Nanase Toda aims to leverage large-scale medical records to identify contributors to angioedema and assess whether both genetic and socioeconomic factors increase the risk of angioedema.



Julia Trudeau | UC Irvine

Precision Biomarkers of Cancer-Related Cognitive Impairment in Racially and Ethnically Diverse Breast Cancer Patients

Issues with cognition, memory, and concentration following cancer treatment can impact quality of life, remains largely underdiagnosed, difficult to treat, and disproportionately impact racial and ethnic minority groups. Julia Trudeau aims to investigate markers in the blood that are associated with cancer-related cognitive impairment and explore their relationship with race and ethnicity to help understand who is most at risk and identify future targets for treatments.



Naying Zhou | University of Southern California

Germline Copy Number Variants and Pediatric Glioma in a Multi-Ethnic CA Cohort

Brain and central nervous system cancers are among the most common cancers affecting children and young adults, especially aggressive gliomas that result in significant years lost. Naying Zhou's research aims to identify genetic markers that may increase the risk of gliomas in children and young people, and to better understand which genes are linked to the most dangerous forms of the disease.