BIOGRAPHICAL SKETCH

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NAME: Huang, Brian

eRA COMMONS USER NAME (credential, e.g., agency login): bhuang02

POSITION TITLE: Assistant Professor of Population and Public Health Sciences

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
University of California, Los Angeles	BS	06/2010	Biology
Johns Hopkins Bloomberg School of Public Health	MPH	05/2014	Epidemiology & Biostatistics
University of California, Los Angeles Fielding School of Public Health	PhD	06/2019	Epidemiology
Keck School of Medicine of USC	Postdoc	09/2022	Cancer Epidemiology

A. Personal Statement

I am an Assistant Professor of Population and Public Health Sciences at the Keck School of Medicine of USC. As a cancer epidemiologist, my research focuses on elucidating the racial/ethnic disparities and complex disease mechanisms of pancreatic cancer. Over the past several years, I have conducted a diversity of pancreatic cancer research using many different data types, including epidemiologic questionnaire and genetic data from the prospective Multiethnic Cohort Study, high-dimensional DNA methylation data from The Cancer Genome Atlas, electronic health records from Kaiser Permanente, and cancer registry data from the North American Association of Central Cancer Registries. As a postdoctoral scholar and recipient of a K99/R00 Career Development Award, I attained advanced training in bioinformatics methods, including statistical genomics, epigenomics and metabolomics. As an independent investigator, my work is focused on using these -omic methods to identify new susceptibility markers and understand how lifestyle or environmental risk factors influence cancer risk through -omic-related pathways. Specifically, I am developing an integrative multi-omic approach to investigate the etiologic mechanisms of pancreatic cancer across multiple racial/ethnic populations. In doing so, I aspire to enhance existing risk stratification methods and improve the screening and early detection of this highly fatal disease.

Ongoing and recently completed projects that I would like to highlight include:

K99CA256525 **Huang (PI)** **02/15/21-01/31/23**
Integrating epidemiologic, clinical, genomic and metabolomic profiles to predict pancreatic cancer risk in a multiethnic population
Role: PI

T32CA229110 **Le Marchand (Multi-PI)** **04/01/19-02/15/21**
Multidisciplinary Training in Ethnic Diversity and Cancer Disparities
Role: Trainee

Citations:

1. **Huang BZ**, Chang JI, Li E, Xiang AH, Wu BU. (2017) Influence of statins and cholesterol on mortality among patients with pancreatic cancer. *Journal of the National Cancer Institute* 109(5): djw275

2. **Huang BZ**, Stram DO, Le Marchand L, Haiman CA, Wilkens LR, Pandol SJ, Zhang ZF, Monroe KR & Setiawan VW. (2019) Interethnic differences in pancreatic cancer incidence and risk factors: the Multiethnic Cohort. *Cancer Medicine* 8(7):3592–3603

3. **Huang BZ**, Pandol SJ, Jeon CY, Chari ST, Sugar CA, Chao CR, Zhang ZF, Wu BU & Setiawan VW. (2020) New-onset diabetes, longitudinal trends in metabolic markers, and risk of pancreatic cancer in a heterogeneous population. *Clinical Gastroenterology and Hepatology* 18(8):1812-1821

4. **Huang BZ**, Liu L, Zhang J, USC Pancreas Research Team, Pandol SJ, Grossman SR & Setiawan VW. (2022) Rising incidence and racial disparities of early-onset pancreatic cancer in the United States, 1995-2018. *Gastroenterology* 163(1):310-312

B. Positions, Scientific Appointments, and Honors

Positions and Scientific Appointments

2022 – Present	Assistant Professor, Department of Population and Public Health Sciences, Keck School of Medicine of USC
2019 – 2022	Postdoctoral Scholar, Keck School of Medicine of USC
2019 – Present	Member, American Pancreatic Association
2018 – 2022	Biostatistician II, Kaiser Permanente Southern California
2017 – Present	Member, American Association for Cancer Research
2016 – 2018	Biostatistician I, Kaiser Permanente Southern California
2014 – 2016	Analytical Programmer I, Kaiser Permanente Southern California
2014 – Present	Member, Delta Omega Honorary Society in Public Health
2010 – 2013	Program Coordinator, UCLA Jonsson Comprehensive Cancer Center
2009 – 2010	Research Associate, UCLA Jonsson Comprehensive Cancer Center

Honors

2019 – 2021	T32 Postdoctoral Multidisciplinary Training in Ethnic Diversity and Cancer Disparities, National Cancer Institute
2019	Young Investigator Travel Grant, American Pancreatic Association
2016 – 2019	T32 Cancer Epidemiology Training Program, National Cancer Institute
2016 – 2017	Fellowship in Epidemiology, UCLA School of Public Health
2014	Student Research Award, Maryland Department of Health Cigarette Restitution Fund
2014	Inductee, Delta Omega Honorary Society in Public Health (Alpha Chapter)
2009 – 2010	College Honors Program, UCLA
2009 – 2010	Dean's Honors List, UCLA
2009	Gold Medalist, President's Volunteer Service Award

C. Contributions to Science

1. **Ecology and animal behavior** – My early research as an undergraduate student focused on ecology and animal behavior-related studies. I participated in the Field/Marine Biology Quarter at UCLA, where I traveled to the US Virgin Islands to design and conduct research on the native marine and animal species in the region. My projects evaluated the impact of nutrient levels on seagrass algae growth and the effects of photography on the anti-predatory behavior of anoles. Specifically, my animal behavior study found

that anoles reduced their anti-predatory behavior in response to shutter noises but not to camera flashes. For my senior thesis investigating dominance patterns in yellow-bellied marmots, I found that marmots in better body condition had higher dominance rank, and that more dominant males had greater reproductive success.

    a. **Huang B**, Wey TW & Blumstein DT. (2011) Correlates and consequences of dominance in a social rodent. Ethology 117:573-585

    b. **Huang B**, Lubarsky K, Teng T & Blumstein DT. (2011) Take only pictures, leave only…fear? The effects of photography on the West Indian anole, Anolis cristatellus. Current Zoology 57(1):77-82

2. **Pancreatic cancer survival** – Given the dismal survival rates for pancreatic cancer, I was very interested in identifying alternative therapies that could improve the outcomes for pancreatic cancer patients. Using electronic health records from Kaiser Permanente Southern California (KPSC), I observed that statin use was associated with a reduced risk of mortality among pancreatic cancer cases. In particular, the protective influence of statins did not appear to be mediated by changes in cholesterol, indicating that statins enhanced survival through a lipid-independent pathway. This was a substantial finding that demonstrated the potential role of statins as an effective chemopreventive agent. Furthermore, we found that racial/ethnic minorities were not disadvantaged in terms of pancreatic cancer care or survival within the KPSC integrated health system. This suggests that improving healthcare access could perhaps reduce the racial disparities in pancreatic cancer outcomes observed in other settings.

    a. Wu BU, Chang J, Jeon CY, Pandol SJ, **Huang BZ**, Ngor EW, Difronzo AL, Cooper RM. (2015) Impact of statin use on survival in patients undergoing resection for early stage pancreatic cancer. *The American Journal of Gastroenterology* 110(8):1233-9. PMCID: PMC4877304

    b. **Huang BZ**, Chang JI, Li E, Xiang AH, Wu BU. (2017) Influence of statins and cholesterol on mortality among patients with pancreatic cancer. *Journal of the National Cancer Institute* 109(5): djw275

    c. Chang JI, **Huang BZ** & Wu BU. (2018) Impact of integrated healthcare delivery on racial and ethnic disparities in pancreatic cancer. *Pancreas* 47(2):221-226

3. **Pancreatic cancer etiology and disparities** – As a doctoral student and postdoctoral fellow, I performed several studies evaluating pancreatic cancer etiology and risk factors in racially diverse populations. Using data from the prospective Multiethnic Cohort, I observed that other non-black minority groups, such as Japanese Americans and Native Hawaiians, were also at an elevated risk for pancreatic cancer. Furthermore, I observed that the association between red meat consumption and pancreatic cancer risk was strongest among African Americans and Latinos. Using data from KPSC, I showed that the increased risk for new-onset diabetes previously reported among white populations was also present across multiple racial/ethnic groups at KPSC. In addition, I demonstrated that new-onset diabetes patients with gradual weight loss and rapid development of poor glycemic control were at higher risk for pancreatic cancer. Most recently, I observed that the rates of early-onset pancreatic cancer have been increasing in the United States, specifically among white and Hispanic females. These findings are important and could have major clinical implications by helping to better identify high risk populations most appropriate for screening.

    a. **Huang BZ**, Stram DO, Le Marchand L, Haiman CA, Wilkens LR, Pandol SJ, Zhang ZF, Monroe KR & Setiawan VW. (2019) Interethnic differences in pancreatic cancer incidence and risk factors: the Multiethnic Cohort. *Cancer Medicine* 8(7):3592–3603

    b. **Huang BZ**, Pandol SJ, Jeon CY, Chari ST, Sugar CA, Chao CR, Zhang ZF, Wu BU & Setiawan VW. (2020) New-onset diabetes, longitudinal trends in metabolic markers, and risk of pancreatic cancer in a heterogeneous population. *Clinical Gastroenterology and Hepatology* 18(8):1812-1821

c. **Huang BZ**, Wang S, Bogumil D, Wilkens LR, Wu L, Blot WJ, Zheng W, Shu X, Pandol SJ, Le Marchand L & Setiawan VW. (2021) Red meat intake, cooking mutagens, *NAT1/2* genotypes and pancreatic cancer in two ethnically diverse prospective cohorts. *International Journal of Cancer* 149(4):811-819

d. **Huang BZ**, Liu L, Zhang J, USC Pancreas Research Team, Pandol SJ, Grossman SR & Setiawan VW. (2022) Rising incidence and racial disparities of early-onset pancreatic cancer in the United States, 1995-2018. *Gastroenterology* 163(1):310-312

4. **COVID-19 epidemiology** – Outside of pancreatic cancer research, I have expanded my work into investigating clinical and environmental risk factors for severe COVID-19 disease. Using data on a large cohort of COVID-19 patients from Kaiser Permanente, I observed that individuals with a prior history of asthma and pancreatitis were at higher risk of poor outcomes including hospitalization, admission to the intensive care unit (ICU) and death. I have also been involved in numerous projects evaluating the impact of air pollution exposures, such as particulate matter, nitrogen oxides and ozone, on COVID-19 severity. Through this work, I observed that exposure to ambient $PM_{2.5}$, NO_2, and near-roadway air pollution was associated with an elevated risk of COVID-19 severity and mortality.

a. **Huang BZ***, Chen Z*, Sidell MA, Eckel SP, Martinez MP, Lurmann F, Thomas DC, Gilliland FD & Xiang AH. (2021) Asthma disease status, COPD, and COVID-19 severity in a large multiethnic population. *The Journal of Allergy and Clinical Immunology: In Practice* S2213-2198(21)00834-5.
*co-first authors

b. Chen Z*, **Huang BZ***, Sidell MA, Chow T, Eckel SP, Pavlovic N, Martinez MP, Lurmann F, Thomas DC, Gilliland FD & Xiang AH. (2021) Near-roadway air pollution associated with COVID-19 severity and mortality – multiethnic cohort study in Southern California. *Environmental International* 157:106862.
*co-first authors

c. Chen Z*, Sidell MA*, **Huang BZ***, Chow T, Eckel SP, Martinez MP, Gheissari R, Lurmann F, Thomas DC, Gilliland FD & Xiang AH. (2022) Ambient air pollutant exposures and COVID-19 severity and mortality in a cohort of COVID-19 patients in Southern California. *American Journal of Respiratory and Critical Care Medicine* 206(4):440-448
*co-first authors

d. **Huang BZ**, Sidell MA, Wu BU, Setiawan VW, Chen Z & Xiang AH. (2022) Pre-existing pancreatitis and elevated risks of COVID-19 severity and mortality. *Gastroenterology* 162(6):1758-1760.

See bibliography for full list of publications:
https://www.ncbi.nlm.nih.gov/myncbi/brian.huang.1/bibliography/public/