BIOGRAPHICAL SKETCH

NAME: Latha Palaniappan

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

POSITION TITLE: Professor of Medicine

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)*	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY
University of Michigan	B.A.	1989	06/1993	Biomedical Sciences
University of Michigan	M.D.	1993	06/1996	Medicine
Stanford University	M.S.	2000	12/2001	Clinical Epidemiology

A. Personal Statement

I have completed more than 100 studies spanning twenty years in the areas of chronic disease prevention. I have received grants from the General Clinical Research Center at the University of Michigan (MO1-RR00042), the National Heart, Lung, and Blood Institute (Individual NIH National Research Service Award - 5F32HL010338), the National Institutes of Health (5K12HD043452-02), the American Heart Association (AHA0885049N), American Diabetes Association (7-12-CT-55), the National Institutes of Diabetes and Digestive and Kidney Diseases (5R01DK081371-02, 3R01DK08137-01A1S1, and 1R18DK096394-01) and the National Institute of Minority Health and Health Disparities (1R01MD007012-01), and the National Heart Lung and Blood Institute (K24 HL150476). My work to date explores racial and ethnic differences in type 2 diabetes, cardiovascular disease, and mortality.

In addition to conducting research and practicing medicine, I am experienced in leading large coordinated scientific efforts. During my time at the Palo Alto Medical Foundation (PAMF), I led the organization-wide initiative to collect patient race/ethnicity and language information, enabling PAMF researchers to conduct disparities research using electronic health records. I also co-founded a South Asian Wellness program called PRANA at PAMF. At Stanford, I have been the Scientific Director of Precision Genomics and Pharmacogenomics for 3 years where I am leading efforts to implement evidence-based genetic and pharmacogenetic testing to primary care populations and am currently Faculty Director of the Precision Health Biobank, a population-based biobank designed to accelerate genetic and other -omics discovery. I also co-founded the Center for Asian Health Research and Education (CARE) at Stanford in 2018. I am experienced in observational study design and implementation using a variety of datasets, including the National Center for Health Statistics Mortality files, the National Health Interview Survey, the National Health and Nutrition Examination Survey, the American Community Survey, and the U.S. Census. I am also well-versed in clinical trial design, implementation, and analysis. I have recently completed several large scale clinical trials (NCT02448498, NCT02061579) in primary care, and I also have experience in large scale randomization and electronic health record analysis in clinical practice settings (PMID: 20059568). I have expertise in interpretation of statistical analysis in clinic level randomization and analysis of electronic health record data, including missing data considerations, repeated measures, multivariable regression, multilevel modeling, propensity scores, time-varying covariates, instrumental variables, and causal inference.

As co-PI, I will oversee all aspects of the proposed study and take primary responsibility for managing the overall project. I will be responsible for all administrative and fiscal aspects of the project, and will provide budgetary oversight, participate in staff training, monitor study progress, supervise statistical analysis, and publications. I will oversee work on all the specific aims and will work closely with the study team to analyze datasets.

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

Current

2020-2025	Funder: NIH/NHLBI (5K24HL150476-03) Title: META - Mentor, Educate, Train, Advocate: Patient Oriented Researchers in Cardiometabolic Disease Role: PI
2019-2023	Funder: NIH/NHLBI (5R01HL146690-03) Title: Genetic and Stem Cell Model of Cardiac Metabolic Disease Role: Co-I; PI: Joseph Wu, MD, PhD

Completed

2015 – 2019	Funder: NIH/NHLBI (1R01HL126172-01A1) Title: CASPER: Cardiovascular Disease Among Asians and Pacific Islanders Role: Co-PI
2012 – 2018	Funder: NIH/NIMHD (5R01MD007012-05) Title: CAUSES: Causes of Asian American mortality Understood by Socio-Economic Status Role: PI

B. Positions and Honors

Positions and Employment

1996 – 1997 Internship, Kaiser Permanente Foundation Hospital, San Francisco, CA
1997 – 1999 Resident Physician, Internal Medicine, Kaiser Permanente Foundation Hospital, San Francisco, CA
2000 – 2003 Postdoctoral Fellow, Stanford Center for Research in Disease Prevention, Palo Alto, CA
2003 – 2006 Instructor, Stanford Prevention Research Center, Stanford University School of Medicine, Palo Alto, CA
2006 – 2009 Assistant Investigator, Health Care Research and Policy, Palo Alto Medical Foundation Research Institute, Palo Alto, CA
2006 – 2012 Director, PAMF-UCSF Clinical Teaching Program, University of California San Francisco School of Medicine, San Francisco, CA
2006 – 2014 South Asian Consult Service PRANA, Palo Alto Medical Foundation, Palo Alto, CA
2007 – 2014 Associate Investigator, Health Care Research and Policy, Palo Alto Medical Foundation Research Institute, Palo Alto, CA
2012 – 2014 Medical Director, Clinical Research, Palo Alto Medical Foundation, Palo Alto, CA
2014 – Professor, Stanford University School of Medicine, Primary Care Population Health

Other Experience and Professional Memberships

1993 – American Medical Association – Resident Member
1993 – American Medical Women's Society – Resident Member
1996 – American College of Physicians – Fellow
1999 – 2000 Volunteer Physician, Medecins Sans Frontieres (MSF), Doctors without Borders; Dili, East Timor, Medical Coordinator for Refugee Clinic
2000 Visiting Lecturer, University of New South Wales, St. Vincent's Hospital, Sydney, Australia
2002 – American Diabetes Association – Council on Epidemiology and Statistics Member
2002 – Fellow of the American Heart Association – Council on Epidemiology and Prevention

Honors

2000 Individual NIH National Research Service Award (F-32) – A Three year Award from The National Heart, Lung, and Blood Institute
2001 American Heart Association 27th Ten-Day Seminar on the Epidemiology and Prevention of Heart Disease – Fellow
2002 Associate Fellow - American Heart Association Council on Epidemiology and Prevention
2003 BIRCWH (Building Interdisciplinary Research Careers in Women's Health) Scholar. NIH Career Development Award (K12)

2003 Katherine McCormick Travel Award
2003 Fellow – American College of Epidemiology
2007 "Top Physician" – Consumers' Research Council of America
2008 "Top Physician" – Consumers' Research Council of America
2009 "Top Physician" – Consumers' Research Council of America
2010 Fellow – American College of Physicians
2011 Who's Who in America 2012 (66th Edition)
2013 Silicon Valley Business Journal Health Hero Award
2016 Stanford University Asian American Award
2016 Top Internist in California
2017 India Community Center: Health Leadership Award

C. Contributions to Science

1. **My publications focus on the intersection of cardiovascular disease and diabetes, with significant research in both.** Although the exact nature of the relationship between diabetes and cardiovascular disease is yet to be determined, these publications emphasize their relationship and point to the need for more in-depth research.
    a. Ward A., Sarraju A., Chung S., Li J., Harrington R., Heidenreich P., **Palaniappan L.**, Scheinker D., Rodriguez F. Machine learning and atherosclerotic cardiovascular disease risk prediction in a multi-ethnic population. NPJ Digit Med. 3:125. 2020 Sep 23. PMID: 33043149
    b. Rodriguez F, Blum MR, Falasinnu T, Hastings KG, Hu J, Cullen MR, **Palaniappan LP**. Diabetes-attributable mortality in the United States from 2003 to 2016 using a multiple-cause-of-death approach. Diabetes research and clinical practice. 2019;148:169-178. PMID: 30641162
    c. Echeverria SE, Mustafa M, Pentakota SR, Kim S, Hastings KG, Amadi C, **Palaniappan LP**. Social and clinically-relevant cardiovascular risk factors in Asian Americans adults: NHANES 2011-2014. *Prev Med.* 2017;99:222-227. PMID: 28219784
    d. Holland AT, Zhao B, Wong EC, Choi SE, Wong ND, **Palaniappan LP**. Racial/ethnic differences in control of cardiovascular risk factors among type 2 diabetes patients in an insured, ambulatory care population. J Diabetes Complications. 2013;27(1):34-40. PMID: 23062328. PMCID: PMC3587775

2. Another aspect that my publications emphasize is the fact **that cardiovascular mortality is often not well- understood for ethnic minorities, particularly for Asian Americans.** These publications found that South Asians/Asian Indians and Filipinos tend to suffer disproportionately from cardiovascular mortality and type II diabetes more than other Asian minority groups and non-Hispanic White populations. These publications highlight the need for public health focus and physician awareness of disease specific burdens on particular racial/ethnic groups. By providing evidence, this body of work has drawn much- needed attention to the top causes of mortality for specific racial/ethnic groups. I served as the primary investigator or co-investigator in all of these studies.
    a. **Palaniappan L**, Wang Y, Fortmann SP. Coronary Heart Disease Mortality for Six Ethnic Groups in California 1990-2000. Annals of Epidemiology. 2004 August;14(7):495-506. PMID: 15310526.
    b. Narayan KM, Aviles-Santa L, Oza-Frank R, Pandey M, Curb JD, McNeely M, Araneta MR, **Palaniappan LP**, Rajpathak S, Barrett-Connor E. "Report of a National Heart, Lung, And Blood Institute Workshop: Heterogeneity in Cardio-metabolic Risk in Asian Americans in the United States. Opportunities for Research." Journal of American College of Cardiology. 2010; 55(10):966-973. PMID: 20202512.
    c. Holland AT, Wong EC, Lauderdale DS, **Palaniappan LP**. Spectrum of cardiovascular diseases in Asian-American racial/ethnic subgroups. Annals of Epidemiology. 2011; 21(8):608-614. PMID: 21737048. PMCID: PMC3215504
    d. Jose PO, Holland AT, Kapphahn KI, Goldstein BA, Eggleston K, Hastings KG, Cullen MR, **Palaniappan LP**. Cardiovascular disease mortality in Asian Americans. J Am Coll Cardiol. 2014; 64(23): 2486-2494. PMID: 25500233. PMCID: PMC4274749

3. I have contributed significantly to the literature on **race/ethnic differences in cardiovascular disease risk factors**. These studies show that: 1) Asian Americans have higher levels of cardiovascular disease risk factors (e.g. type II diabetes) at lower levels of obesity compared to non-Hispanic White populations;

2) dyslipidemia profiles differ by specific racial/ethnic groups, with more insulin resistance in racial/ethnic minorities; 3) race/ethnic minorities are more likely to have diabetic kidney disease with proteinuria, which is associated with greater cardiovascular risk. This body of work directs further research in the different profiles of cardio metabolic diseases among racial/ethnic minorities, and informs clinical practice on providing quality health care for all racial/ethnic minorities.

a. Volgman AS, **Palaniappan LP**, Aggarwal NT, Gupta, M, Khandelwal A, Krishnan AV, Lichtman JH, Mehta LS, Patel HN, Shah KS, Shah SH, Watson KE, American Heart Association Council on Epidemiology and Prevention; Cardiovascular Disease and Stroke in Women and Special Populations Committee of the Council on Clinical Cardiology; Council on Cardiovascular and Stroke Nursing; Council on Quality of Care and Outcomes Research and Stroke Council. Atherosclerotic Cardiovascular Disease in South Asians in the United States: Epidemiology, Risk Factors, and Treatments: A Scientific Statement From the American Heart Association. *Circulation*. 2018;138(1):e1-e34. PMID: 29794080.
b. **Palaniappan LP**, Wong EC, Shin JJ, Fortmann SP, Lauderdale DS. Asian Americans have greater prevalence of metabolic syndrome despite lower body mass index. Int J of Obes (London). 2010 Mar; 35(3):393-400. PMID: 20680014. PMCID: PMC2989340
c. Narayan KM, Aviles-Santa L, Oza-Frank R, Pandey M, Curb JD, McNeely M, Araneta MR, **Palaniappan LP**, Rajpathak S, Barrett-Connor E. "Report of a National Heart, Lung, And Blood Institute Workshop: Heterogeneity in Cardio-metabolic Risk in Asian Americans in the United States. Opportunities for Research." Journal of American College of Cardiology. 2010; 55(10):966-973. PMID: 20202512.
d. Frank AT, Zhao B, Jose PO, Azar KM, Fortmann SP, **Palaniappan LP**. Racial/Ethnic Differences in Dyslipidemia Patterns. Circulation. Nov 5 2013. PMID: 24192801. PMCID: PMC4212818

4. Race/ethnic-specific treatment guidelines for cardiovascular disease and risk factors are currently limited in availability and scope. As lifestyle and contextual factors greatly impact cardiovascular disease risk, I have conducted research, both qualitative and quantitative, **on culturally specific treatments and recommendations that health care organizations and physicians can carry into their practice.** Current studies include examining the clinical effectiveness of structured physical activity programs for diabetes management (Initiate and Maintain Physical Activity in Clinics – IMPACT study – R18 DK096394), as well as best exercise regimens for normal-weight diabetics (Strength Training Regimen for Normal Weight Diabetics – STRONG-D – R01 DK081371).
   a. Kwan AC, Abbasi F, Lamendola C, McLaughlin TL, Reaven GM, **Palaniappan LP**. Clinical experience with a relatively low carbohydrate, calorie-restricted diet improves insulin sensitivity and associated metabolic abnormalities in overweight, insulin resistant South Asian Indian women. Asia Pacific Journal of Clinical Nutrition. 2008 December;17(4):669-71. PMID: 19114407
   b. Azar KM, Chen E, Holland AT, **Palaniappan LP**. Festival foods in the immigrant diet. Journal of Immigrant and Minority Health 15.5 (2013): 953-960. PMID: 22968231. PMCID: PMC3552147
   c. Dixit AA, Azar KM, Gardner, CD, **Palaniappan, LP**. Incorporation of whole, ancient grains into a modern Asian Indian diet to reduce the burden of chronic disease. Nutrition reviews 69.8 (2011): 479-488. PMID: 21790614. PMCID: PMC3146027
   d. Block G, Azar KM, Block TJ, Romanelli RJ, Carpenter H, Hopkins D, **Palaniappan L**, Block CH. A Fully Automated Diabetes Prevention Program, Alive-PD: Program Design and Randomized Controlled Trial Protocol. JMIR Res Protoc 2015;4(1):e3. PMID: 25608692. PMCID: PMC4319077

Complete List of Published Work in MyBibliography:
http://www.ncbi.nlm.nih.gov/sites/myncbi/latha.palaniappan.1/bibliography/40472731/public/?sort=date&direction=ascending