

Jiachen Lu

Personal Data

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Education

PhD Candidate in Biostatistics	Houston, TX
The University of Texas Health Science Center at Houston (UTHealth) School of Public Health	2020-Present
MS in Biostatistics	Washington, DC
Georgetown University	08/2017-12/2018
BS in Biostatistics	Guangzhou, China
Southern Medical University	08/2013-06/2017

Research Experience

Graduate Research Assistant, Department of Biostatistics and Data Science, UTHealth School of Public Health, Houston, TX, 09/2020 - Present

Supervisor: Dr. Cici Bauer

Research Project: *Apply NASA's Earth Observation Product to Improve Artificial Light at Night (ALAN) Mapping and Public Health Surveillance*

- Process large satellite imaging data (10G per file) and aggregate radiance into various geospatial units
- Determine distribution and change of ALAN in the U.S. using GIS mapping
- Investigate the associations between ALAN change and health outcomes
- Identified positive relationships with diabetes, cancer prevalence and mental health prevalence using Poisson regression in R

Research Project: *Circadian Rest-Activity Rhythms, Metabolomic Profiles, and Incidence of Alzheimer's Disease and Related Dementia in Older Men and Women*

- Process high frequency raw accelerometer data and conduct missing data imputation and data aggregation
- Realize high dimensional data reduction using nonparametric statistics and functional principal component analysis

- Identify activity patterns and extract activity profile to analyze the associations between physical activity and health outcome prevalence

Research Project: *City of Brownsville COVID-19 Analytics*

- Clean and process COVID-19 testing data from clinics
- Monitor the temporal trend of positive rates and demographical distribution using visualization tools

Biostatistician, Georgetown Lombardi Comprehensive Cancer Center, Office of Minority Health and Health Disparities Research, Washington DC, 12/2018-07/2020

Research Project: *Focused Intervention on Exercise to Reduce Cancer trial exercise (FIERCE) Study*

- Applied logistic regression model and generalized linear model to analyze the allostatic load change and compared metabolic syndrome components and quality of life among intervention arms
- Demonstrated a short-term exercise intervention can improve allostatic load scores among metabolically unhealthy postmenopausal minority women under increased risk for cancer

Research Project: *Black Women's Health Study*

- Analyzed the association between anthropometric factors and colorectal adenoma or cancer risk using multivariable conditional logistic regression analyses and Cox proportional hazard model
- Established that obesity is an initiator for colon adenomas but not a promoter for colorectal cancer among Black women

Research Project: *Validation Study*

- Explored the physical activity patterns using functional data analysis and sedentary behavior measured by wearable device 24 hours per day for consecutive 7 days
- Compared the objectively measured accelerometer data with self-reported questionnaire data through concordance correlation coefficients and Bland Altman techniques that validated underreported sedentary time and overreported physical activity using subjective measures

Community-based Research: *Capital Breast Care Center Team (CBCC)*

- Applied Generalized Estimating Equations (GEE) method to identify adherence to mammogram screening recommendations among underserved participants according to ACR and USPSTF guidelines

- Identified social determinants acting as barriers to mammography screening, validated the importance of community-based outreach, education and patient navigation to improve screening rates in health disparity populations

Graduate Research Assistant, Department of Biostatistics, Georgetown University, Washington DC,

01/2018 – 05/2018

Supervisor: Dr. Jaeil Ahn

- Applied greedy algorithm to compare baseline characteristics on the scale of standard difference before and after propensity score matching among patients conducted surgeries of coronary artery bypass graft surgery (CABG) and percutaneous coronary intervention (PCI)
- Created reusable SAS Macros and utilized SAS/ODS to deliver graphics, tabulations to Excel/PDF/HTML

Publications

Xiao, Q., **Lu, J.**, Zeitzer, J.M. et al. (2022). Rest-activity profiles among U.S. adults in a nationally representative sample: a functional principal component analysis. *Int J Behav Nutr Phys Act* 19, (32). <https://doi.org/10.1186/s12966-022-01274-4>

Adams-Campbell, L., Taylor, T., Hicks, J., **Lu, J.**, & Dash, C. (2021). The Effect of a 6-Month Exercise Intervention Trial on Allostatic Load in Black Women at Increased Risk for Breast Cancer: The FIERCE Study. *J. Racial and Ethnic Health Disparities*. <https://doi.org/10.1007/s40615-021-01145-x>

Dash, C., **Lu, J.**, Parikh, V., Wathen, S., Shah, S., Shah Chaudhari, R., & Adams-Campbell, L. (2021). Disparities in colorectal cancer screening among breast and prostate cancer survivors. *Cancer Med*, 10(4): 1448-1456. <https://doi.org/10.1002/cam4.3729>

Dash, C., Yu J., Nomura, S., **Lu, J.C.**, Rosenberg, L, Palmer, J., & Adams-Campbell, L. (2020). Obesity is an initiator of colon adenomas but not a promoter of colorectal cancer in the Black Women’s Health Study. *Cancer Causes Control*, 31(4), 291-302. doi:10.1007/s10552-020-01283-3

Hooper, T., **Lu, J.C.**, Mills, M., Gonzalez, N., Hamilton, R., Adams-Campbell, L. & Dash, C. (2020, October). *Social determinants as barriers to mammography screening at a community cancer-screening clinic*, International Cancer Education Conference, Online.

Lu, J.C., Cao, Y., and Chen, P.Y. (2017, August). *A novel meta-analysis based on standard mean difference for diagnostic test in continual measurement*, 2017China Health Statistics Annual Conference, Wuhan, China.

Other Professional Experience

Teaching Assistant, *Epidemiology and Public Health* (49 undergraduate students)

Georgetown University, Spring 2020

Supervisor: Dr. Chiranjeev Dash

- Tutored students on various Biostatistical theories and methods during office hours
- Developed study strategy for students who needed extra help

SAS Programmer & Retail Customer Analyst Intern

GAC-SOFINCO Auto Finance Company, Guangzhou, China, 2016-2017

- Maintained loan payments monitoring system and sent weekly reports to managers
- Compared pre-revised and post-revised credit scores to identify customers with abnormal loan payment patterns

Community Service Experience

12/2018 Lunar New Year celebration for Biomedical Graduate Education Program students, Georgetown University

- Helped plan and organize cultural activities including Chinese calligraphy, traditional food tasting, and dumpling making

2019-2020 Food and clothes give-away to the homeless in Union Station, Washington, DC

- Collected donations of clothes, prepared foods and distributed supplies

2013-2014 Vice President, Student Art Troupe, Southern Medical University, Guangzhou, China

- Organized university-wide talent show and secured funding from local business
- Organized a rock music concert in partnership with other local universities

2013-2016 Student Library Assistant, Southern Medical University, Guangzhou, China

- Helped shelve and organize books
- Searched books and provided literature searching services

2014-2015 Volunteer at the Shunde Children Welfare Institute for Autistic Children, Shunde, China

- Participated in “Celebrating Difference” community event in National Autistic Children’s week
- Visited autistic kids regularly at the institute and read story books to them

Skills

Computer Skills: SAS, R, Plink, MATLAB, Tableau, Python, SPSS, Stata, and SQLite

Language Skills: Chinese Mandarin (native); Cantonese (fluent); English (fluent)

Soft Skills: Adaptivity, Communication, Teamwork, Time management, Motivation, and Critical thinking

Honors & Awards

2021 Best Overall Performance Award in 2021 Preliminary Examination, UTHealth School of Public Health

2020 UTHealth SPH Outstanding New Student Scholarship Award - Aurelia Murphy Killian Endowment in Public Health, UTHealth School of Public Health

2016 Gold Medal, The 10th Challenge Cup Competition of Science Achievement in China, The Chinese Association of Science and Technology and the Chinese Ministry of Education

Certificates

2018 SAS Certified Base/Advanced Programmer for SAS 9

2017 *Workplace Dynamics: Leadership and Career Development* Certificate

2015 Shanghai Intermediate-Level English-Chinese Interpretation Certificate