

KEHE ZHANG

Houston, TX 77054 | C: 512-577-0513 | angelazhangkh@gmail.com

Education

-
- Master of Science: Biostatistics | University of Texas Health Science Center Houston (UT Health), TX** **08/2020-08/2018**
- GPA: 4.00/4.00 | Minor in Epidemiology
 - Relevant coursework: probability theory, statistical inference, survival analysis, categorical data analysis, applied regression techniques, applied multivariate analysis, fundamentals of data analytics and predictions
 - Thesis: Bayesian multilevel modeling | Supervisor: Cici Bauer, PhD
 - Independent study: Systematic review and meta-analysis
- Bachelor of Science: Biology | Texas State University, San Marcos, TX** **05/2017-08/2013**
- GPA: 3.99/4.00 | Minor in Chemistry | Summa cum laude graduate
 - Phi Kappa Phi Honor Society Member | Charles Spurgeon Smith Award Recipient

Work Experience

-
- Biostatistician | University of Texas Health Science Center Houston, TX** **10/2020 to present**
- Collaborate with investigators to determine study design, contribute to protocol development, and co-author manuscripts published in peer-reviewed scientific journals, featuring both analysis results and statistical methodology.
 - Carry out data cleaning and manipulation; prepare statistical analysis plan; conduct data analysis of clinical, survey and device measured data applying standard and non-standard statistical methodology from exploratory analysis to final model building, sensitivity analysis, diagnosis and necessary post-hoc subgroup analysis.
 - Work extensively with large datasets; prepare reusable scripts to ensure proper data access, validation and analysis and automatic report generation with R programming.
 - Provide statistical consulting and data management support to researchers in health implementation science projects; identify possible statistical issues and propose appropriate models to ensure the validity of statistical methods.
- Research Assistant | University of Texas Health Science Center Houston, TX** **05/2020 to 9/2020**
- Collaborated with research team in performing statistical analysis for on-going research projects.
 - Designed, performed analyses, wrote and edited materials for protocols and manuscripts for publication.
 - Presented and interpreted methods and results to principal investigators on a regular basis.
- Teaching Assistant | University of Texas Health Science Center Houston, TX** **01/2019 to 05/2020**
- Helped professors with material generation, lesson plan development, class preparation, scheduling and exam distribution.
 - Tutored students for multiple graduate-level statistics courses; responded to students' emails promptly.
- Research Assistant | Texas State University, San Marcos, TX** **12/2016 to 05/2017**
- Conducted literature review; assisted in data entry, cleaning and quantitative data analysis for a biology lab.

Research Experience

-
- NIH Consortium for Cancer Implementation Science** **10/2021 to present**
- Developing a public-facing data visualization dashboard to inform understanding of geospatial variation of cancer screening inequality and its relation to social determinants of health and social vulnerability.
- RadX: Understanding and addressing COVID-19 testing disparities in vulnerable groups** **11/2020 to present**
- Identify dynamic disease hotspots and testing deserts in racially diverse neighborhoods of the targeted regions.
 - Analyze regional public health department data and hospitalization records to assess, in real-time, testing availability and uptake patterns, incidence of SARS-CoV-2 infections and COVID-19 manifestations.
 - Created census block group level social vulnerability index using PCA to identify underserved communities.
- Small Area Forecasting of Opioid Overdose (OD) Mortality in Massachusetts (MA)** **08/2021 to present**
- Explore the spatial patterns and variations of ZIP Code Tabulations Areas (ZCTAs) level opioid overdose mortality from 2015-2020 and identify significant ZCTA level demographic and socioeconomic factors.
 - Develop Bayesian spatiotemporal dynamic models to predict future year opioid OD mortality rates and counts by ZCTA.
- COVID19 surveillance in Cameron County, TX** **04/2020 to present**

KEHE ZHANG

Houston, TX 77054 | C: 512-577-0513 | angelazhangkh@gmail.com

- Provide real-time support and assistance in COVID-19 data reporting, data processing and management.
- Conduct data analysis and geocoding for geospatial analysis; lead development of reports and visualizations of surveillance data; link large datasets to other publicly available data: American community survey and SafeGraph social distancing data.
- Create a R-shiny dashboard to monitor and track local COVID19 epidemic for city public health department.

Salud y Vida program on diabetes management

01/2020 to 08/2020

- Analyzed longitudinal data on a Hispanic cohort with uncontrolled diabetes from an intervention program.
- Investigated association of social determinants of health and diabetes control and the impacts on the program's effectiveness.
- Built Bayesian multilevel models and spatial models to study the spatial variation across different census tracts.

Publications

Zhang K, Reininger B, Lee M, Xiao Q, Bauer C. Individual and Community Social Determinants of Health Associated With Diabetes Management in a Mexican American Population. *Front Public Health*. 2021;8. doi:10.3389/fpubh.2020.633340

Bauer C, Champagne-Langabeer T, Bakos-Block C, Zhang K, Persse D, Langabeer JR (2021) Patterns and risk factors of opioid-suspected EMS overdose in Houston metropolitan area, 2015-2019: A Bayesian spatiotemporal analysis. *PLoS ONE* 16(3): e0247050. <https://doi.org/10.1371/journal.pone.0247050>

Bauer C, Zhang K, Lee M, Fisher-Hoch S, Guajardo E, McCormick J, de la Cerda I, Fernandez M, Reininger B. Correction: Census Tract Patterns and Contextual Social Determinants of Health Associated With COVID-19 in a Hispanic Population From South Texas: A Spatiotemporal Perspective. *JMIR Public Health Surveill* 2021;7(8):e32870. URL: <https://publichealth.jmir.org/2021/8/e32870>. DOI: 10.2196/32870

Bauer C, Zhang K, Lee M, Jones M, Rodriguez A, de la Cerda I, Reininger B, Fisher-Hoch S and McCormick J. Real-time geospatial analysis identifies gaps in COVID-19 vaccination in a minority population. *Nature Scientific Reports*. 2021; 97416: <https://doi.org/10.1038/s41598-021-97416-y>

Bauer C, Zhang K, Li W, Bernson D, LaRochelle M, Stopka TJ. Small area forecasting of opioid overdose mortality using a Bayesian spatiotemporal dynamic model. (Manuscript under review)

Bauer C, Zhang K, Xiao Q, Lu J, Hong Y, Suk R. County-level social vulnerability scores and breast, cervical, and colorectal cancer screening rates in the US, 2018: An ecological study of contextual effects. (Manuscript in preparation)

Skills and Certificates

- Proficient in R, SAS, MS Excel, Word and PowerPoint
- Knowledgeable in STATA, Python, SQL and GitHub
- Strong collaborative skills and time management
- Certificates: - Data Science Certificate (UT Health)
- SAS Base Programming certificate
- Strong written and verbal communication skills

Leadership

Vice President, Biostatistics and Data Science Student Association- UT Health

01/2019 to 05/2020

- Participated in major events organizing and coordinated resources for the association.
- Revitalized group's social media presence, including Instagram and Facebook, leading to improved member involvement.

Honors and Awards

Charles Spurgeon Smith Award, Biology Department of *Texas State University*

04/2017

Joining Phi Kappa Phi Honor Society (top 7.5% senior students in US.)

10/2016 to 05/2017

Dean's List, *Texas State University, San Marcos*

12/2013 to 05/2017

Scholarship winner of the Intel Scholarship for Employee's Children

04/2014