Ke Xu

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EDUCATION

University of Florida, Gainesville, FL

M.S. in Biomedical Informatics   Aug. 2022 - Dec. 2022, GPA 3.93/4.0

Ph.D. Student in Biomedical Informatics   Aug. 2019 - Aug. 2022

Advisor: Dominick Lemas, PhD

University of Florida, Gainesville, FL   Aug. 2017 - May 2019, GPA 3.72/4.0

M.S. in Biostatistics

University of Shanghai for Sci & Tech (USST), Shanghai, China   Sep. 2013 - May 2017, GPA 3.57/4.0

B.A. in Food Science and Engineering

SKILLS

Programming and software: **R (5 years), SAS, Python, MySQL, Linux, Redcap, Freezerworks**

Other: GitHub, QIIME 2, TCGA database, Microsoft office, Adobe Illustrator, GIMP

WORK EXPERIENCE

Biostatistician   Aug. 2018 - July 2020

UF Health Cancer Center Cancer, Informatics and eHealth Core, University of Florida, FL

➢ Consulted with investigators on study design, data collection, and data analysis

➢ Performed planned and exploratory analyses, with various data sources, including clinical trials, surveys, cancer registries, electronic health records (EHRs), omics data, etc., using R and SAS

➢ Communicated and presented statistical results, tables, and graphs to internal and external audiences

➢ Maintained projects documentation; generated NIH enrollment reports; wrote manuscripts and reports

➢ Experienced in multi-task and fast-paced environments

Data Analyst - Summer Intern   May.2018 - Aug 2018

Quanyaowang, Shenzhen, China

➢ Performed data management and analyses using R

➢ Designed research protocol and provided study design as well as statistical analysis plans to investigate the relationship between the price of generic drugs and expired patented drugs

➢ Built statistical models to predict the total amount of hospital drug purchases

RESEARCH EXPERIENCE

Graduate Research Assistant, *Supervised by Dominick Lemas, PhD*   Aug. 2019 - Present

Department of Biomedical Informatics, University of Florida, Gainesville, FL

➢ **Data**: Multi-omics data (16S rRNA gene sequences and metabolomics data); EHRs; surveys, etc.

➢ **Programming and software**: R, Python and Linux (data management, analysis, and visualization); GitHub (version control and team work); REDCap and Freezerworks (database management), Application Programming Interfaces (API's) for data retrieval

Associations between the breastfeeding and early child health

➢ Managed data and documentation; wrote manuscripts and reports

➢ Scheduled clinic visits; communicated with and recruited participants

➢ Collected physical biological specimens and managed database

➢ Developed data analyses and reports (association between metabolites of prepregnant period in plasma with early infant health by evaluating both untargeted metabolomics and targeted metabolites)

Peripartum women's perspectives on research study participation in the OneFlorida Clinical Research Consortium during COVID-19 pandemic

➤ Managed data and documentation; wrote manuscripts and reports

➤ Developed data analyses and reports (Descriptive analysis for participants' demographics and research preferences; Used Likert-scale visualization to compare the perspectives of participants on different questions such as motivators/barriers with clinical research, preferred source of research study information, comfort with biological sample collection, willingness to release EHRs, and comfort with study randomization; Pearson's Chi-square tests were performed to examine the effect of race, ethnicity, and education on willingness)

Microbiome: Maternal gut microbiome during the lactational period

➤ Managed data and documentation; wrote manuscripts and reports

➤ Conducted systematic review/literature review for maternal gut microbiota in the postpartum period

➤ Performed 16S rRNA gene sequence microbiome analysis for the association between lactation duration and maternal fecal microbes (Descriptive analysis for maternal demographics and infant lactation duration and status; Alpha diversity and beta diversity for evenness, richness, and similarity of the fecal microbiome; differential abundance of the microbiome)

Metabolomics: 1. An acceptance-based therapy intervention for diverse adolescent girls with overweight/obesity. 2. Gestationally Matched Human and Bovine Milk samples at 2 weeks Postnatal

➤ Managed data and documentation; wrote manuscripts and reports

➤ Performed complex heatmaps, principal component analysis (PCA), volcano plots, Veen diagrams, multi-level donut plots, Manhattan plots, and Sankey diagrams to illustrate the difference between groups

Machine learning and natural language processing for classification from clinical notes

➤ Managed data and documentation; wrote manuscripts and reports

➤ Annotated EHRs clinical notes using TeamTat and built machine learning models to predict breastfeeding status; Evaluated performance of machine learning models

Deep learning-based prognosis prediction among preeclamptic pregnancies using EHRs data

➤ Managed data and documentation; wrote manuscripts and reports

➤ Constructed deep learning-based models to predict the prognosis, or the time to delivery, since the initial diagnosis of preeclampsia using EHRs data

TEACHING EXPERIENCE

Graduate Teaching Assistant   May. 2022 - Aug. 2022

Department of Biomedical Informatics, University of Florida, Gainesville, FL

GMS6803: Data Science for Clinical Research, Summer 2022

PUBLICATIONS

1. **Xu K**, Hsiao CJ, Ballard H, Chachad N, et al. Peripartum Women's Perspectives on Research Study Participation in the OneFlorida Clinical Research Consortium During COVID-19 Pandemic. *Accepted by the Journal of Clinical and Translational Science*.

2. Dastmalchi F, **Xu K**, Jones HN, Lemas DJ. Assessment of Human Milk in the Era of Precision Health. *Current Opinion in Clinical Nutrition & Metabolic Care.* 2022:10-1097.

3. Louis-Jacques AF, Lemas DJ, **Xu K**, et al. Maternal gut microbiome during the lactational period. *American Journal of Obstetrics & Gynecology*. 2022;226(1): S11-S12.

4. Guo Y, Chen Z, **Xu K**, et al. International Classification of Diseases, Tenth Revision, Clinical Modification social determinants of health codes are poorly used in electronic health records. *Medicine*. 2020;99(52).

5. Holmes HR, Li Q, **Xu K**, et al. Antihypertensive Medication Adherence Trends by Sex and Drug Class: A pilot study. *American Heart Journal Plus: Cardiology Research and Practice*. 2021; 5:100023.

6. Lemas DJ, Layton C, Ballard H, **Xu K**, et al. County-level Analysis of Perinatal Health Indicators Within a Single Health System Catchment. *Accepted by the Women Health Report*. 2022.

7. Yang X, Ballard HK, Mahadevan AD, **Xu K**, et al. Deep Learning-based Prognosis Prediction among Preeclamptic Pregnancies Using Electronic Health Record Data. *medRxiv*. 2022.

8. Lemas DJ, Layton C, Ballard H, **Xu K**, et al. County-level Analysis of Perinatal Health Indicators Within the UF Health Perinatal Catchment Area. *Accepted by the Women's Health Reports. 2022.*

9. Elzeneini M, George J, Ashraf H, **Xu K**, et al. Impact of a Preventive Cardiology Clinic Focusing on Lifestyle and Nutrition Counseling: A Pilot Analysis. *American Heart Journal Plus: Cardiology Research and Practice*. 2021; 6:100032.

10. Ahrens AP, Culpepper T, Saldivar B, Anton S, Stoll S, Handberg EM, **Xu K**, et al. A Six-Day, Lifestyle-Based Immersion Program Mitigates Cardiovascular Risk Factors and Induces Shifts in Gut Microbiota, Specifically Lachnospiraceae, Ruminococcaceae, Faecalibacterium prausnitzii: A Pilot Study. *Nutrients*. 2021;13(10):3459.

11. Elzeneini M, George J, Ashraf H, **Xu K**, et al. (2021). A Multidisciplinary Preventive Cardiology Clinic Model to Improve Cardiovascular Risk - A Pilot Study. *Journal of the American College of Cardiology*. 2021;77(18_Supplement_1):1611–1611.

12. Taha Y, **Xu K**, Mahmoud A, et al. Electrocardiographic (ECG) Predictors of Major Adverse Cardiac Events in Women with Ischemia and No Obstructive Coronary Artery Disease (INOCA). *European Heart Journal*. 2020;41(Supplement_2): ehaa946-3188.

13. Cooper-Dehoff RM, Holmes HR, Li Q, **Xu K**, et al. A Pilot Study of Antihypertensive Medication Adherence Trends by Sex and Drug Class. *Hypertension*. 2019;74(Suppl_1): A032–A032.

Under Review or In Preparation:

1. Weerasuriya W, Saunders JE, Kis L, Ho T, Do, Lemas DJ, **Xu K**, et al. Maternal Gut Microbiota in the Postpartum Period: A Systematic Review. *Under review the American Journal of Obstetrics and Gynecology.*

2. Du X, Newsome FA, Cardel MI, Millar DR, Aristizabal-Henao JJ, **Xu K**, et al. Untargeted urinary metabolomic analysis of an acceptance-based therapy intervention for diverse adolescent girls with overweight/obesity. *Under review Clinical Obesity.*

3. Ulfat F, **Xu K**, et al. The impact of perceived COVID-19 threats on perinatal health services and utilization. *In preparation*

4. Lemas DJ, Du X, Dado-Senn B, **Xu K**, et al. Untargeted Metabolomic Analysis of Gestationally Matched Human and Bovine Milk Samples at 2-weeks Postnatal. *In preparation.*

5. Lemas DJ, Rouhizadeh M, Lewis B, Frank S, Wright L, Magalhães M, **Xu K**, et al. Classifying Infant Feeding Status from Unstructured Clinical Notes Using Natural Language Processing and Machine Learning. *In preparation.*

SCHOLARSHIP	28th Annual International Student Achievement Awards, University of Florida	Oct. 2022
AND HONOR	First-level Academic Scholarship, USST	Apr. 2016; Apr. 2017
	Second-level Academic Scholarship, USST	Apr. 2015; Oct. 2016
	Third-level Academic Scholarship, USST	Oct. 2014; Oct. 2015

CERTIFICATIONS	Power and Sample Size for Multilevel and Longitudinal Study Designs, University of Florida	Jun. 2020
	National Nutritionist Certificate (Third Level), National Lab Ministry, China	Nov. 2015

LANGUAGE	English (fluent), Mandarin (native)