UNIVERSITY OF PITTSBURGH CURRICULUM VITAE

Revised: 05/01/2023

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6.   Current Titles and Affiliations:

2023-   Associate Professor, Biostatistics, School of Health and Rehabilitation Sciences (SHRS), University of Pittsburgh

7.   Past Titles and Affiliations:

2021-2023   Research Assistant Professor and Biostatistician, School of Medicine, University of Pittsburgh

2018-2021   Research Assistant Professor, Applied Biostatistics Laboratory, University of Michigan School of Nursing

2018-2021   Research Member, Michigan Institute for Data Science, University of Michigan

2018-2021   Research Member, Institute for Healthcare Policy and Innovation, University of Michigan

2016-2018   Postdoc Research Fellow, Biostatistics, Emory University School of Medicine

2017-2018   Visiting Researcher of Medical Informatics, Georgia Institute of Technology

8.   Education:

2006-2010   BS, Statistics, Binzhou Medical University, School of Public Health, Yantai, Shandong, China

2010-2013   MS, Biostatistics, Sichuan University West China School of Public Health, Chengdu, Sichuan, China
MS Thesis: "Applications and comparisons of four-time series models in epidemiological surveillance data."
Supervisor: Xiaosong Li, PhD

2013-2016   PhD, Biomedical Science (Biostatistics concentration),University of Auckland
School of Medicine, Auckland, New Zealand
Dissertation: "Atlas Based Analysis of Heart Shape and Motion in Cardiovascular Disease."
Supervisor: Alistair Young, PhD

9.   Postgraduate Training:

2012   Teaching Assistant, Sichuan University, West China Public Health School, Chengdu, China

2011   Research Analyst, Chinese Center for Disease Control and Prevention, Department of Emergency,

Beijing, China

2010   Intern, Binzhou Medical University Hospital, Department of Statistics, Binzhou, China

10.   Peer Review Activities

The Lancet Infectious Disease
EBioMedicine
PLOS Neglected Tropical Diseases
PLOS ONE
American Journal of Tropical Medicine & Hygiene
Computer Methods and Programs in Biomedicine
BMJ Open
International Journal of General Medicine
Scientific Reports
Science of the Total Environment
Journal of Preventive Medicine and Community Health
International Journal for Numerical Methods in Biomedical Engineering
Archives of Public Health
Journal of Pain and Symptom Management
BMC Health Services Research
Epidemiology and Infection
Journal of Psychosocial Oncology
Journal of Racial and Ethnic Health Disparities
Frontiers in Molecular Biosciences (Guest Editor)
Journal of Psychosocial Oncology (Editorial board as a statistician)
Pediatrics
Infectious Diseases of Poverty

11.   Abstract Presentations at National/International, Regional and Institutional Conferences:

1. **Zhang X**; Su D; Li Q; Zhang T; Mahajan P. Prediction of Acute Appendicitis among Patients with Undifferentiated Abdominal Pain at Emergency Department. October 2020, Diagnostic Error in Medicine 13th Annual International Conference (SIDM2020) (Virtual poster presentation)
2. **Zhang X**, Medrano-Gracia P, Werys K, Yang S, Mahajan P. Use of Natural language processing to improve predictive models for imaging utilization in children presenting to the Emergency Department, 2019 Joint Statistical Conference, June 2019, Denver, Colorado (poster presentation)
3. **Zhang X**, Arenson M, Kim J, Karadkhele G, Hogan J, Zhang Y, Adams A, Patzer R. Prediction of 90 Days Readmission after Kidney Transplantation Including Natural Language Processing, 2018 American Transplant Congress, June 2018, Seattle, Washington (poster presentation)
4. **Zhang X**, Melanson TA, Plantinga LC, Basu M, Pastan SO, et al. Racial/Ethnic Disparities in Kidney Transplantation before and after the New National Kidney Allocation System, 2018 American Transplant Congress, June 2018, Seattle, Washington (poster presentation)
5. Hogan J., Anderson M., Zhang Y., Kim J., Karadkhele G., **Zhang X**., Adams A., Patzer R. Patient Change in Residence and Risk of Readmission after Renal Transplant in the US, 2018 American Transplant Congress, June 2018, Seattle, Washington (poster presentation)
6. **Zhang X**, Arenson M, Hogan J, et al. Identification of Solid-Organ Transplant Recipients at High-Risk for Post-Transplant Hospitalization using Clinical Notes. Emory University Health Service Research Day 2018, May. 2018, Atlanta, Georgia (poster presentation)
7. **Zhang X**, Kim J, Basu M, et al. Racial/ethnic Disparities in Emergency Department Medical Imaging Use in the United States from 2005 to 2014. Emory University Health Service Research Day 2018, May. 2018, Atlanta, Georgia (Oral presentation)
8. **Zhang X**, Melanson TA, Plantinga LC, Basu M, Pastan SO, et al. Racial/Ethnic Disparities in Kidney Transplantation before and after the New National Kidney Allocation System, 2018 Emory Surgery Research Day,2018, Atlanta Georgia (poster presentation)
9. **Zhang X**, Gander JC, Plantinga LC, McPherson L, Basu M, Paul S, Pastan S, Patzer RE. Kidney Transplantation Referral and Waitlisting Patterns among Dialysis Facilities in Georgia. ACE 2017. Sep. 2017, New Orleans, Louisiana (poster presentation)

10. Melanson T, **Zhang X**, Howard D, et al. Racial/Ethnic Disparities in Waitlisting for Kidney Transplantation before and after the New National Kidney Allocation System, 7th Annual Conference of the American Society of Health Economists, Economics and Public Health, Jun, 2017, Atlanta, Georgia (poster presentation)
11. **Zhang X**, Kim J, Patzer RE, Pitts S, Schrager JD. Prediction of emergency department hospital admission based on natural language processing and neural networks. Emory University Health Service Research Day 2017, May. 2017, Atlanta, Georgia (poster presentation)
12. Kim J, **Zhang X**, Patzer RE, Pitts S, Schrager JD. Predicting of advanced imaging use at emergency department triage based on natural language processing and logistic regression. Emory University Health Service Research Day 2017, May. 2017, Atlanta, Georgia (poster presentation)
13. **Zhang X**, Ambale-Venkatesh B, Bluemke DA, et al. Orthogonal shape modes describing clinical indices of remodeling. 2015 International Conference on Functional Imaging and Modeling of the Heart. June.2015, Maastricht, The Netherlands (poster presentation)

12.   Continuing Education and Professional Skills Development

1. Analysis of Clinical Trials: Theory and Applications Workshop, Joint Statistical Meetings 2019 Seminar, July 2019, Denver,CO
2. Deep Learning Methods in Healthcare Workshop, Joint Statistical Meetings 2019 Seminar, July 2019, Denver,CO
3. Advances in Mixed Methods Analysis and Integration Workshops, March 11-13, 2020, Ann Arbor, MI
4. Grant Writing Next Steps: A Proposal Workshop for Faculty, February 2020, Institute for Healthcare Policy and Innovation, University of Michigan, Ann Arbor, MI
5. Mapping tools to visualize COVID19 data workshop, Aug 6,2020, Ann Arbor, MI

13.   Professional Committee Membership

Member, American Statistical Association
Member, International Society for Infectious Diseases (ISID)

14.   Invited Talk

1. "Predictive and Diagnostic Modeling in Healthcare: Examples from Diagnostic Imaging and Emergency Department Triage" University of Pittsburgh School of Health and Rehabilitation Science, Pittsburgh, May 11, 2023
2. "Predictive Modeling in Emergency Department Outcomes" MGH Institute of Health Professions, Boston September 9, 2020 (Online)
3. "Use of natural language processing to improve predictive models for imaging utilization in emergency department." Nanjing Medical University, Nanjing, China, December 22, 2018.
4. "Application of Predictive Modeling in Healthcare: Examples from Emergency Medicine Department Health Service." University of Michigan, Ann Arbor, Michigan, June 28, 2018.
5. "Racial/ethnic Disparities in Emergency Department Medical Imaging Use in the United States from 2005 to 2014." Health Service Research Day, Atlanta, May 9, 2018.
6. "Predictive Modeling in Infectious Disease Surveillance and Diagnostic Imaging." JPS Health Network, Fort Worth, Texas, February 9, 2018.

15.   Research Focus

I am an Associate Professor of Biostatistics and Epidemiology at the University of Pittsburgh School of Health and Rehabilitation Sciences. Prior to joining University of Pittsburgh, I was a Research Assistant Professor at the Applied Biostatistics Laboratory of the University of Michigan School of Nursing. I was a postdoctoral research fellow in biostatistics at Emory University, and a visiting research scholar in medical informatics at Georgia Institute of Technology. My own and collaborative research interests involve (1) health outcomes with an emphasis on study design and statistical analysis; (2) medical imaging biomarkers; (3) electronic health record data; (3) predictive and diagnostic modeling in healthcare; (4) healthcare and health service in transplantation and emergency medicine. My academic training and research experience have provided me with an excellent background in biostatistics, medical informatics, and epidemiology. My research has led to over 70+ peer-reviewed coauthored journal articles, including biostatistical methods journals (e.g. Methods of Information in Medicine, Gigascience, Mathematical Biosciences, etc), biomedical informatics journals (e.g. BMC Medical Informatics and Decision Making, Journal of Translational Medicine, and Journal of Biomedical and Health Informatics, etc), and

applied epidemiological and clinical journals (e.g. JAMA, Lancet infectious disease, American Journal of Transplantation, Epidemiology and Psychiatric Sciences, and, etc).

I collaborate with our faculty members in their grant proposal development, study design, data analysis, and paper publication. I have collaborative research experiences in many different medical areas including infectious disease, radiology, surgery, emergency medicine, psychiatry, neurology, pediatrics, cardiovascular disease, etc. I have experience working on large data sets, including the China infectious disease surveillance data, the United States Renal Data System (USRDS) data, Network for Organ Sharing (UNOS), Healthcare Cost and Utilization Project (HCUP) data, and Pediatric Health Information System (PHIS) data, the large imaging datasets from New Zealand Cardiac Atlas Project, and Electronic Health Record Data from Emory Hospital, University of Michigan Hospital and, etc.

16. Statistical Software

SAS, R, Python, Matlab, Stata, SQL

17. Grant Support

Current support

2SB1DC015142	Malcomson, Hill, Huggins	05/2022 – 05/2025
Brain-Computer Interface and High-Efficiency Augmentative and Alternative Communication Systems: Commercial Readiness		
The goal is to complete the late-stage development of a commercial-grade AAC-BCI peripheral for PRC's communication system product line, optimize its design for long-term use by severely impaired individuals, finalize regulatory and reimbursement pathways, evaluate training resources, and conduct a small clinical trial of in-home product use to plan future larger clinical trials.		
Role: Biostatistician		
90DPKT0002	Goldberg (PI)	9/2018 – 9/2024
Initiative to Mobilize Partnerships for successful Assistive technology Transfer (IMPACT)		
The Initiative to Mobilize Partnerships for Successful Assistive Technology Transfer (IMPACT) is a center at the University of Pittsburgh that aims to identify and reduce barriers to the successful transfer of assistive technology (AT) to the marketplace.		
Role: Biostatistician		

Previous support

R01HL122489	Turnquist (PI)	07/2022 – 06/2027
Immunoregulatory mechanisms of IL-33 in heart transplantation		
The goal of this application is to identify exploitable mechanisms by which ST2+Treg and IL-33 control inflammation and mediate cardiac tissue repair after transplantation. To that end, we will perform HTx and cardiac injury studies utilizing transgenic mice that allow specific gene targeting in Treg and donor and recipient mice lacking IL-33.		
Role: Biostatistician		
K08DK119576	Puttarajappa (PI)	07/2019 – 4/2024
Utility of virtual crossmatch in deceased donor kidney transplantation		
The goal of the study is to evaluate the current crossmatch practices in deceased donor kidney transplantation among different donor and recipient subgroups, along with assessing perceptions of transplant professionals regarding virtual crossmatch		
Role: Biostatistician		
RT200012	Turnquist (PI)	10/2021 – 09/2024

Reparative treg and microparticle therapy for the prevention of VCA acute and chronic rejection		
The study's objective is to investigate the potential of reparative T regulatory cells (Treg) and microparticle therapy as a means to prevent both acute and chronic rejection in vascularized composite allografts (VCA).		
Role: Biostatistician		
Starzl Network for Excellence in Pediatric Transplantation Program	Mazariegos (PI)	09/2021- 10/2023
The goal is to build a network of pediatric transplant institutions committed to continuous improvement of children's life, and to deliver the best possible care and develop new, scalable solutions to pediatric transplantation's most challenging problems.		
Role: Biostatistician		
MICHR Pathway to Independence Grant	Zhang (PI)	04/01/19– 09/31/20
Prediction of Emergency Department Health Outcomes and Resource Utilization for Pediatric Patients		
The purpose of this study is to develop predictive tools of emergency medicine (ED) triage to accurately predict clinical and resource use outcomes for pediatric patients in the ED waiting area, and further test the predictive models using prospective data. The results of the study will develop of evidence-based practices for the ED flow chart and patient care.		
Role: Principal Investigator		
Microsoft AI for Health COVID-19 Grants	Mahajan(PI)	09/01/20 – 08/31/21
Prediction model of COVID-19 patients and health outcomes in the Emergency Department		
In this project, we will utilize retrospective structured data (e.g., vital signs) and unstructured data (e.g., clinical notes) and longitudinal hospital electronic health record (EHR) data sources to develop robust predictive models that will function at or before ED triage to potentially identify the COVID-19 patients who need and who do not need ED care. We will, and also determine the ED resource utilization needs (e.g., intensive care unit) among the COVID-19 patients.		
Role: Co-Investigator		
University of Michigan Mcubed Grant	Corriere, Zhang, Lee (CO-PI)	01/01/19-12/31/2020
Comparing respondent-driven versus convenience-based sampling for survey research		
This project will explore ways that respondent-driven sampling (including both patient and healthcare provider participants) can be leveraged to support identification, recruitment, and enrollment of candidates unknown and otherwise inaccessible to the investigator.		
Role: Co-Principal Investigator		
Department Funds	Mahajan(PI)	11/01/16 – 11/30/26
Mahajan CES Program Development		
Role: Statistician		
MICHR Seed Grant	Zhang (PI)	10/1/2019 – 9/30/2020
Emergency Department Utilization among Patients with Substance-use Disorder		
By analysis of a large, nationally representative dataset, the proposed study will estimate emergence department utilization of patients with substance-use disorder and examine factors associated with their clinical outcomes and resource utilization.		
Role: Principal Investigator		
R01 MH113574	Abelson(PI)	08/07/18 – 07/31/23

Glucocorticoid modulation of contextual processing and its neurocircuitry: Testing a new model of PTSD pathophysiology		
This study was to deepen our understanding of how contextual information about threats is processed in these brain circuits and how stress hormones can impact these processes, both in healthy people and in people with PTSD, with the goal of understanding mechanisms that may help us reduce the detrimental effects of stress and trauma on human health.		
Role: Biostatistician		
1R18HS026622-01	Mahajan, Pasupathy, Singh	09/30/18-07/31/22
Improving Diagnosis in Emergency and Acute Care: A Learning Laboratory (IDEA-LL)		
Our goal is to create Improving Diagnosis in Emergency and Acute care - Learning Laboratory (IDEA- LL), a novel program for diagnostic safety surveillance and intervention using actionable, patient-centered data obtained from both frontlines of care and electronic health records (EHRs).		
Role: Biostatistician		
Midwest Nursing Research Society Pilot Grant	Jiang (PI)	04/01/20 – 03/31/21
Tolerance of Toxicities of Oral Anticancer Agents among Older Adults with Advanced Cancers		
The objective of this proposed study is to identify and predict the occurrence of Oral anticancer agents toxicity-related severe symptoms among older adults with advanced cancer using real-world data from the electronic health records. We will select capecitabine and erlotinib to represent an oral chemotherapy and oral molecular targeted agent respectively, prescribed over the past five years (January 1, 2015 - December 31, 2019).		
Role: Co-Investigator		
Fisk Foundation Award	Struble (PI)	12/01/16 – 03/31/21
The Effect of Low-Level Laser Acupuncture Treatments on Behavioral and Psychological Symptoms in Assisted Living Residents with Dementia		
The objective of this proposed study is to pilot testing a novel low-level laser acupuncture treatments on behavioral and psychological symptoms in assisted living residents with dementia using a parallel randomized control clinical trial.		
Role: Biostatistician		
Institute for Healthcare Policy and Innovation of University of Michigan Policy Sprint grant	Bell (PI)	05/01/19 – 03/31/20
Using Claims Data to Estimate Mortality Associated with Large-Scale Disaster Among Older Adults		
Deaths attributable to disasters are poorly understood and official mortality estimates have traditionally taken only direct causes into account, rather than considering the contributing factors associated with a disaster that led to death. This project will look at all-cause mortality in older adults after three recent major U.S. hurricanes, utilizing claims data.		
Role: Co-Investigator		
R01 NS091112	Morgenstern(PI)	09/01/15 – 07/31/20
Outcomes Among Surrogate Decision Makers in Stroke (OASIS)		
Currently, very little is known about the experience and outcomes of family members who make medical decisions for individuals with stroke. Results from this project will improve our understanding of the early and long-range consequences of these challenging decisions in diverse populations and help to develop specific interventions to reduce the emotional and psychological burden on family members.		
Role: Co-Investigator		
Merck Grant	Lori (PI)	04/01/20 – 03/31/21
Maternity Waiting Homes in Zambia Phase 2		

Objectives of the Operations Research (OR) are to determine: 1) Cost/benefit of developing and maintaining the ZaMs model; 2) Financial sustainability of the ZaMs model; 3) Feasibility and scalability of the ZaMs model when applied to other districts in Zambia; 4) Community well-being in communities supporting the ZaMs model; 5) Effectiveness of the ZaMs model in increasing the use of skilled birth attendants in rural primary health facilities; 6) Effectiveness of reducing maternal and neonatal morbidity and mortality.		
Role: Co-Investigator		
1R01MD011682-01	Patzer (PI)	08/15/17-04/30/22
Reducing Disparities among Kidney Transplant Recipients		
Our specific aims are 1) To develop and validate predictive models to identify transplant recipients at high risk of hospitalization following transplant; 2) To use a community-based participatory research approach to build an electronic hospitalization risk dashboard that will aid in clinical decision-making and guide the use of scarce resources for patients at high risk for hospitalization post-transplant.		
Role: Postdoc Co-Investigator		
R01MD010290	Patzer (PI)	07/01/15-06/30/20
Evaluation of Racial Disparities in Access to Kidney Transplantation in New National Kidney Allocation Policy		
The purpose of this research is to study the impact of the natural experiment offered by enactment of this new kidney allocation policy on reducing disparities in the key steps of referral for transplant evaluation, wait listing, and transplantation, each of which have complexities for measurement at the local and national level.		
Role: Postdoc Co-Investigator		
1U01MD010611-01	Patzer (PI)	04/01/16-11/30/20
Reducing Racial Disparities in Access to Kidney Transplantation: the RaDIANT Regional Study		
The purpose of this research is to determine reasons for racial disparities in medical evaluation for kidney transplantation among dialysis patients in GA, NC and SC, and to implement the RaDIANT Regional Study in GA, NC, and SC with the goal of increasing rates of referral, medical evaluation, and waitlisting, and reducing disparities in these key steps.		
Role: Postdoc Co-Investigator		
R01HL91069	Young (PI)	9/1/2013-9/1/2016
The Cardiac Atlas Project—an imaging database for computational modeling and statistical atlases of the heart		
The Cardiac Atlas Project (CAP) has established a large-scale database of cardiac imaging examinations and associated clinical data in order to develop a shareable, web-accessible, structural and functional atlas of the normal and pathological heart for clinical, research and educational purposes. A goal of CAP is to facilitate collaborative statistical analysis of regional heart shape and wall motion and characterize cardiac function among and within population groups.		
Role: Ph.D. student		
NSFHR of China (grant no. 200802133)	Li (PI)	9/1/2010-9/1/2013
Early warning and forecasting system for infectious disease surveillance		
The primary goal of the project was to establish a national level early warning and forecasting infectious disease based on the surveillance system, to facilitate early detection and prevention of infectious disease in China, utilizing advanced computer-aided spatial and temporal techniques.		
Role: Master's student		

18.   Teaching experience

Teaching Assistant—Medical Statistics (Spring, 2012)
Sichuan University, West China School of Medicine, Chengdu, China
Bachelor Courses offered to students in clinical medicine

Assistant Instructor—N811 Health Informatics (Fall, 2020)
University of Michigan School of Nursing
DNP Course offered to doctoral students in nursing.

19.   Students or research staff supervision:

2018-2021   Staffs in the University of Michigan School of Nursing Applied Biostatics Lab

2020-2021   Master level student: Rongqian Zhang, University of Michigan College of Literature,Science,
               and the Arts

2020-2022   Master level student: Tiankai Xie, University of Michigan School of Public Health

2019-2021   Master level student: Qinmengge Li, University of Michigan School of Public Health

2019-2021   Master level student: Ningyuan Wang, University of Michigan College of Literature,Science,
               and the Arts

2019 Summer   PhD student summer research assistant: Maria Carabello, University of Michigan Institute
               for Healthcare Policy and Innovation

2016-2018   PhD candidate: Ting Zhou, West China Medical School, Sichuan University

2017-2018   Master student: Yiran Zhang, Rollins Public Health School, Emory University

2018 Summer   Master student: Mengyu Di, Rollins Public Health School, Emory University

2018 Summer   Master student: Luer Zhong, Rollins Public Health School, Emory University

2017-2018   Master Level Biostatistician: Geeta Karadkhele

2017 Summer   Summer Intern Student: Simon Salter, Emory University

20.   Bibliography:

   **a.   Published and Accepted Research Articles (clinical, basic science, other) in Refereed
            Journals (* Senior or last author)**

1. Laffey M, Ashwat E, Lui H, Zhang X, Kaltenmeier C, Packiaraj G, Crane A, Alshamery S, Gunabushanam V, Ganoza A, Dharmayan S, Powers CA, Jonassaint N, Molinari M. Donor-recipient race-ethnicity concordance and patient survival after liver transplantation. HPB (Oxford). 2024 Mar 11;. doi: 10.1016/j.hpb.2024.03.003. [Epub ahead of print] PubMed PMID: 38523016.
2. Raghu VK, **Zhang X**, Squires JE, Eisenberg E, Feldman AG, Halma J, Peters AL, Gonzalez-Peralta RP, Ng VL, Horslen SP, Lobritto SJ, Bucuvalas J, Mazariegos GV, Perito ER. Impact of early immunosuppression on pediatric liver transplant outcomes within 1 year. J Pediatr Gastroenterol Nutr. 2024 Feb;78(2):328-338. doi: 10.1002/jpn3.12112. Epub 2024 Jan 2. PubMed PMID: 38374561.
3. Cashion WT, **Zhang X**, Puttarajappa C, Sharma A, Mehta R, Ganoza A, Gunabushanam V, Sood P, Wu C, Cherukuri A, Shah N, Kaltenmeier C, Liu H, Dharmayan S, Hariharan S, Molinari M. Interaction between cold ischemia time and Kidney Donor Profile Index on postrenal transplant outcomes. Am J Transplant. 2024 Feb 1;. doi: 10.1016/j.ajt.2024.01.026. [Epub ahead of print] PubMed PMID: 38307416.
4. Soltys K, Lemoine C, **Zhang X**, Bhat R, Bucuvalas J, Rasmussen S, Romero R, Batsis I, Sayed B, Tunno J, Confair C, Vargas S, Superina R, Mazariegos G. Factors associated with thrombotic and hemorrhagic complications in pediatric liver transplant: A multi-center analysis from the Starzl Network for Excellence in Pediatric Transplantation. Pediatr Transplant. 2023 Apr 4;:e14521. doi: 10.1111/petr.14521. [Epub ahead of print] PubMed PMID: 37016507.
5. Fan H, **Zhang X**. Association between the age at onset of overweight and obesity and the subsequent risk of hypertension in Chinese adults. BMC Cardiovasc Disord. 2023 Jun 30;23(1):333. doi: 10.1186/s12872-023-03347-z. PubMed PMID: 37391689; PubMed Central PMCID: PMC10311763.
6. Kaeberlein TL, Green AS, Haddad G, Hudson J, Isman A, Nyquist A, Rosen BS, Suh Y, Zalzala S, **Zhang X**, Blagosklonny MV, An JY, Kaeberlein M. Evaluation of off-label rapamycin use to promote healthspan in 333 adults. Geroscience. 2023 May 16;:1-12. doi: 10.1007/s11357-023-00818-1. [Epub ahead of print] PubMed PMID: 37191826; PubMed Central PMCID: PMC10187519.

7. Niyogisubizo J, Cai Y, Zhang L, **Zhang X**, Wei Y. Editorial: Computational solutions for microbiome and metagenomics sequencing analyses, Volume II. Front Mol Biosci. 2023;10:1253303. doi: 10.3389/fmolb.2023.1253303. eCollection 2023. PubMed PMID: 37529378; PubMed Central PMCID: PMC10390057.

8. Isman A, Nyquist A, Moel M, **Zhang X**, Zalzala S. The efficacy and tolerability of intermittent prandial acarbose to reduce glucose spikes in healthy individuals. Translational Medicine of Aging. 2023 April; 7:12-19. doi: https://doi.org/10.1016/j.tma.2023.04.002.

9. Fan H, Guan T, **Zhang X**. Association of Birthweight with Overweight, Obesity, and Blood Pressure among Adolescents. Children. 2023 March; 10(4).

10. Puttarajappa CM, Hariharan S, **Zhang X**, Tevar A, Mehta R, Gunabushanam V, Sood P, Hoffman W, Mohan S. Early Effect of the Circular Model of Kidney Allocation in the United States. J Am Soc Nephrol. 2023 Jan 1;34(1):26-39. doi: 10.1681/ASN.2022040471. Epub 2022 Oct 27. PubMed PMID: 36302599.

11. Mangus CW, Parker SJ, DeLaroche AM, **Zhang X**, Gunnink S, Hayes J, Heath G, Michiels E, Mahajan P. Impact of COVID-19 on the associated complications of high-risk conditions in a statewide pediatric emergency network. J Am Coll Emerg Physicians Open. 2022 Dec;3(6):e12865. doi: 10.1002/emp2.12865. eCollection 2022 Dec. PubMed PMID: 36540333; PubMed Central PMCID: PMC9753814.

12. Mehta RB, Melgarejo I, Viswanathan V, **Zhang X**, Pittappilly M, Randhawa P, Puttarajappa C, Sood P, Wu C, Sharma A, Molinari M, Hariharan S. Long-term immunological outcomes of early subclinical inflammation on surveillance kidney allograft biopsies. Kidney Int. 2022 Dec;102(6):1371-1381. doi: 10.1016/j.kint.2022.07.030. Epub 2022 Aug 29. PubMed PMID: 36049641.

13. Liu H, Kaltenmeier C, Jonassaint N, Behari J, Duarte-Rojo A, Malik S, Hughes DL, Ganesh S, Reddy D, Powers C, Loseth C, Thompson A, Al Harakeh H, Hill R, **Zhang X**, Diego E, Di Martini A, Bataller R, Molinari M. The closing survival gap after liver transplantation for hepatocellular carcinoma in the United States. HPB (Oxford). 2022 Nov;24(11):1994-2005. doi: 10.1016/j.hpb.2022.07.008. Epub 2022 Jul 19. PubMed PMID: 35981946.

14. Su D, **Zhang X**, He K, Chen Y, Wu N. Individualized prediction of chronic kidney disease for the elderly in longevity areas in China: Machine learning approaches. Front Public Health. 2022;10:998549. doi: 10.3389/fpubh.2022.998549. eCollection 2022. PubMed PMID: 36339144; PubMed Central PMCID: PMC9634246.

15. Fan H, **Zhang X**. Effects of smoking intensity trajectory, cumulative smoking exposure, and the number of years since quitting on the subsequent risk of hypertension. J Clin Hypertens (Greenwich). 2022 Jul;24(7):937-944. doi: 10.1111/jch.14534. Epub 2022 Jun 28. PubMed PMID: 35765239; PubMed Central PMCID: PMC9278583.

16. Jiang Y, Mason M, Cho Y, Chittiprolu A, **Zhang X**, Harden K, Gong Y, Harris MR, Barton DL. Tolerance to oral anticancer agent treatment in older adults with cancer: a secondary analysis of data from electronic health records and a pilot study of patient-reported outcomes. BMC Cancer. 2022 Sep 3;22(1):950. doi: 10.1186/s12885-022-10026-3. PubMed PMID: 36057578; PubMed Central PMCID: PMC9440580.

17. Xia Z, Qin L, Ning Z, **Zhang X**. Deep learning time series prediction models in surveillance data of hepatitis incidence in China. PLoS One. 2022;17(4):e0265660. doi: 10.1371/journal.pone.0265660. eCollection 2022. PubMed PMID: 35417459; PubMed Central PMCID: PMC9007353.

18. Mehta RB, Shimko K, **Zhang X**, Puttarajappa C, Wu C, Sharma A, Molinari M, Tevar AD, Hariharan S, Sood P. Rabbit antithymocyte globulin dose and early subclinical and clinical rejections in kidney transplantation. Clin Transplant. 2022 Apr;36(4):e14582. doi: 10.1111/ctr.14582. Epub 2022 Jan 18. PubMed PMID: 35000234.

19. **Zhang X**, Qiu P, Prushinskaya A, Jiang Y, Fan H, Yang S. Characteristics of emergency department admissions with congestive heart failure in the United States: a Nationwide cross-sectional study. BMC Emerg Med. 2022 Jan 28;22(1):16. doi: 10.1186/s12873-021-00564-7. PubMed PMID: 35090395; PubMed Central PMCID: PMC8795967.

20. Su D, Li Q, Zhang T, Veliz P, Chen Y, He K, Mahajan P, **Zhang X**. Prediction of acute appendicitis among patients with undifferentiated abdominal pain at emergency department. BMC Med Res Methodol. 2022 Jan 14;22(1):18. doi: 10.1186/s12874-021-01490-9. PubMed PMID: 35026994; PubMed Central PMCID: PMC8759254.

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