

Zhang, Shiyu

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EDUCATION

Columbia University Irving Medical Center

New York, US

M.S. in Biostatistics (Public Health Data Science)

09/2019-Present

Peking University (PKU)

Beijing, China

B.S. in Pharmaceutical Science

08/2019-07/2024

Skills: SPSS (4 yrs.), R (1.5 yrs.); Interests: Liu-chin (7 yrs.), Calligraphy (6 yrs.)

PUBLICATION

S. Zhang, "Mental health and the factors with people in tech workspace," *Second International Conference on Biological Engineering and Medical Science (ICBioMed 2022)*, Stanford, US(online), March 2023

RESEARCH

Survey on the Status of Precision Medicine for Tumor Diseases Guided by Biomarker Detection

Advisor: Dr. Nie, Xiaoyan

09/2023-06/2024

- Collected data from approximately 450 patients at Peking University Cancer Hospital
- Utilized R to conduct data cleaning and analysis, including normality tests and multifactor analysis
- Employed a multiple logistic regression model to explore the influencing factors of patients participating in tumor biomarker detection, and calculated the corresponding odds ratios and confidence intervals
- All tests were considered statistically significant at a two-tailed p-value < 0.05

The Current Clinical Implementation of Pharmacogenomics (PGx)

09/2023-06/2024

Advisor: Dr. Nie, Xiaoyan

- Conducted systematic literature reviews on clinical studies, pharmacological research, genetic studies, etc., to identify relevant research on the application of pharmacogenomics in clinical practice
- Extracted and integrated data and developed inclusion criteria and search strategies
- Intend to perform statistical analysis, including correlation analysis between drug metabolism genotypes, drug efficacy, and safety, as well as differential analysis of genotypes' effects in clinical applications

Cross-Sectional Analysis: Acceptance of Pharmacist-Managed Clinics among Mainland China Residents; Team Leader; Advisor: Mr. Wu, Yibo

10/2022-Present

- Conducted quota sampling on residents in mainland China through a questionnaire survey from June 20 to August 31, 2022
- Carried out a cross-sectional analysis, specifically performing univariate analysis followed by stepwise regression analysis to identify more relevant variables
- Utilized a multiple linear regression to analyze influencing factors of residents' scores on people's acceptance of pharmacist-managed clinics in R based on a sample of 20,000+ demographic data
- Found that the mean acceptance level of mainland China's residents towards pharmacist-managed clinics was 59.34 and composed an article, which has been submitted to the *Public Health Journal*

Identification of Mouse TMEM52 Protein by ¹H-¹⁵N HSQC NMR

12/2021-06/2023

Advisor: Dr. Yuwen, Tairan

- Selected specific plasmids to construct the expression vector, chose *Escherichia coli* to express the prokaryotic system and used media containing ¹H and ¹⁵N markers for isolation and purification through FPLC to obtain relatively pure intracellular fragments of TMEM52 protein
- Observed cross-peaks between sequential adjacent amino acids via 3D NMR experiments (HNCO, HNCACO, HNCACB, CBCACONH), and mapped the obtained fragments to known amino acid

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sequences

- Processed data using NMRPipe and semi-automatically assigned them through CARA, automated the connection and peak confirmation with the AutoLink program and imported the peak identification results into CCPN to establish the one-to-one correspondence between the peak signal and the protein residue in the nuclear magnetic spectrum

Survival Analysis in Breast Cancer with Cox Model and Kaplan-Meier Method

07-09/2022

Advisor: Prof. Todd Ogdén; Statistical Data Science for Public Health and Biomedicine Online Seminar

- Conducted a straightforward survival analysis with the Kaplan-Meier (KM) method based on datasets from Kaggle
- Performed regression analysis and built the KM model and Cox proportional hazards (PH) model to investigate the relationship between multiple/single variables and survival months
- Concluded that 5-year survival is an essential statistic for predicting breast cancer, with the probability of survival declining steadily over the first 50 months

ACADEMIC HIGHLIGHT

Design, Synthesis, and Activity Evaluation of HIPK2 Small Molecule Targeted Degraders

05-07/2022

- Designed a small molecule targeted degrading agent for HIPK2, and a chemical synthesis method, and evaluated its prospects for treating renal fibrosis through various methodologies for bioactivity assay

ACTIVITIES

Volunteer, Anti-Doping Center of Beijing Olympics Games & Paralympic Winter Games

02-04/2022

- Participated in the consolidation and organization of various data
- Detected erythropoietin (EPO) in athlete samples

Secretariat Member, Peking University Student Development Support Association

11/2019-06/2021

- Invited outstanding senior students, alumni, and teaching assistants to conduct Q&A counseling to provide academic guidance, life skills, and career planning for students on campus
- Checked the quality of activities of various departments and carried out overall coordination

Volunteer, College Student Volunteer Project in Qinghai-Tibet Plateau and Hexi Corridor

07/2020

- Participated in a public welfare initiative in the Qinghai and Gansu provinces of China
- Conducted grassland desertification surveys, Qinghai Lake cycling for lakefront garbage clean-up, tree planting activities in the Dunhuang Desert, and the conservation of Przewalski's gazelle