Zehua Wang

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Education

China Pharmaceutical University (CPU) Nanjing, Jiangsu
Master's Degree in Pharmacokinetics GPA: 3.8/4.0 IELTS: 6.5 CET-6: 567 09/2022-07/2025
Shandong First Medical University (Shandong Academy Of Medical Sciences, SDFMU) Jinan, Shandong
Bachelor of Engineering in Pharmaceutical Engineering 09/2018-06/2022
Arithmetic average: 83.5/100

Research

1. Pharmacometrics project (Leading project): 03/2023- Present

Whole-body and Semi-PBPK-PD for ADCs and extension analysis

Supervised Prof. Kun Hao in Guangji Wang's lab, State Key Laboratory of Natural Medicines, CPU

Research Focus:

- **Project Overview:** Developed Whole-body PBPK and Semi-PBPK models and PD models across different species. Analyzed data from both preclinical and clinical experiments to identify key factors influencing the pharmacokinetics, pharmacodynamics, and toxicology of ADC drugs. Conducted sensitivity analyses to provide insights for the development of new ADC drugs and to optimize clinical dosing strategies for precision medicine.
- **Software Utilization:** Established PBPK-PD models and estimated parameters using Monolix, conducted simulations with Berkeley Madonna, and performed data visualization, sensitivity analysis, high-risk population identification and developed web applications using R.

2. International collaborative project (Leading project): 06/2024- Present

Clinical Antibody Therapy for Alzheimer's Disease: Pop-PKPD Modeling and Application

Individual Collaboration with Prof. Nick Holford and Dr. Jacqueline Hannam, Faculty of Medical and Health Sciences, The University of Auckland

Research Focus:

- **Project Overview:** Concentrated on developing and applying Pop-PKPD models for Alzheimer's disease patients receiving antibody therapy by analyzing the relationship between drug exposure and biomarker changes, exploring the effects on disease progression, and conducting model-based meta-analyses to inform and optimize dosing strategies, thereby enhancing personalized treatment regimens and assisting in new drugs development.
- **Software Utilization:** Established pop-PKPD models, conducted simulations using NONMEM, and performed data visualization, sensitivity analysis, high-risk population identification and developed web applications using R.

3. Pharmacology and Pathology projects: 09/2022-Present

Exploring Drug Metabolism and Transport Interactions Under Different Conditions

Supervised by Prof. Li Liu in Xiaodong Liu's lab, Jiangsu Provincial Key Laboratory of Drug Metabolism and Pharmacokinetics

Research Focus:

- **Laboratory Experiments:** Bred and maintained experimental animals, performed surgical procedures, collected samples, and conducted both behavioral and pharmacological assessments. Additionally, cultured various cell lines, conducted molecular biology experiments like Western Blot, PCR, and HPLC-MS, etc.
- **Data Analysis:** Calculated parameters and analyzed data with R, Winnonlin and NONMEM, etc.

Outcomes:

- 1. Zhi, Hao, Yidong Dai, Lin Su, Lu Yang, Wenhan Wu, Zehua Wang, Xinyue Zhu, Li Liu, Jiye Aa, and Hanyu Yang. 2023. "Thioacetamide-Induced Acute Liver Injury Increases Metformin Plasma Exposure by Downregulating Renal OCT2 and MATE1 Expression and Function." Biomedicines 11, no. 12: 3314.

https://doi.org/10.3390/biomedicines11123314.

- 2. Liqiang Qian, Hanyu Yang, Qianli Ye, Zijun Xu, Yanlin Liu, Zehua Wang, Wenhan Wu, Li Liu, Xiaodong Liu. "Venlafaxine Induces Psychiatric Disorders Due to Upregulation of Cerebral Catechol-O-Methyltransferase via the PI3K/AKT/mTOR Pathway." Preprint, Research Square, 27 September 2023. https://doi.org/10.21203/rs.3.rs-3206277/v1. Submitted to Biochemical Pharmacology.
- 3. Hao Zhi, Zhongyan Wang, Xinyue Zhu, Wenhan Wu, Lu Yang, Yidong Dai, Zehua Wang, Ling Jiang, Yongmei Tan, Xiaodong Liu. "Chronic Liver Injury Decreases Levels of Cerebral Carnitine and Acetylcarnitine in Rats Partly Due to Downregulation of OCTs and OCTN2 at Blood-Brain Barrier." Submitted to Metabolism and Disposition. Manuscript Number: DMD-AR-2024-001925.
- 4. Zehua Wang, et al. "PBPK-PD Models for ADC Drugs: Pharmacokinetics, Efficacy and Toxicity Studies" To be Submitted to Clinical Pharmacology and Therapeutics.

4. School-Enterprise Cooperation (Leading project): 10/2023-03/2024

Phase I Clinical Pharmacometrics Study of New NSAI Drugs

Research Focus:

- **Project Overview:** Conducted modeling and simulation to explore adjustments in administration methods, dosage, and frequency to meet clinical requirements for specific indications based on clinical research data.
- **Leading Responsibilities:** Led in data cleaning, modeling, parameter estimation, simulation, evaluation and optimization, utilizing Winnonlin, Monolix, and R. Also authored the project report.

5. Preparation and Performance Testing of Antibacterial MOF-Derived Carbon Materials 09/2021-07/2022

Supervised by Prof. Jiahui Yu in Prof. Chenwei Li's Lab, Medical Science and Technology Innovation Center, SDFMU

Research Focus:

- **Project Overview:** Prepared various types of MOF-derived carbon materials for water purification tests and compared their performance under different conditions. Investigated the effects of targeted MOF-derived carbon materials on microorganisms and their surrounding environment.

Interdisciplinary Online Course

(1) Artificial Intelligence and Cloud Computing by *Prof. Maheswaran and Prof. Franchitti* 07/2023-09/2023

(2) Emerging Biotechnology Development and Global Governance by *Prof. Liu and Prof. Wang* 10/2023-12/2023

(3) Big Data and Public Health by *Prof. Ramezani* 10/2023-12/2023

(4) Application of Artificial Intelligence in Public Health by *Prof. Ramezani* 01/2024-03/2024

(5) Exploration and Application: Probability and Statistical Theory in Games by *Prof. Iozzi* 07/2024-09/2024

(6) Data Science and Business Analytics by *Prof. Zhang Foutz* 07/2024-09/2024

Honors and Awards

Exploring the World Scholarship, CPU, 2024
Outstanding League Member, CPU, 2022-2024
Scholarship of Academic Excellence, CPU, 2022-2024
Outstanding Graduate, SDFMU, 2022
Prize Scholarship, SDFMU, 2020-2021

Skills & Hobbies

Computer Skills	Pharmacokinetics and Statistical Software: Proficient in Monolix, R, SPSS, Berkeley Madonna, NONMEM, and Phoenix WinNonlin for pharmacokinetic modeling and statistical analysis. Adobe Creative Suite: Experienced in Photoshop, Premiere, Audition, and After Effects for advanced graphic design, video editing, audio production, and motion graphics.
Experiment Skills	Expertise in animal and cell culture, Western Blot, PCR, ELISA, HPLC-MS, laser confocal microscopy, high-content imaging, surface plasmon resonance (SPR), microscale thermophoresis (MST), biolayer interferometry (BLI), biomolecular interaction analysis, and cellular energy metabolism assessment.
Hobbies	Photography and Filmmaking: Experienced in photography and micro-movie production, with multiple provincial and school-level awards. Skilled in new media management and content creation. Chess: Over 10 years of experience, with a history of winning various provincial chess competitions. Sports: Proficient in swimming, table tennis and badminton.