HONGJIE (HARRY) QIAN

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As an aspiring biostatistician-to-be with a robust foundation in pharmacology and biochemistry, I have comprehensive modeling expertise complemented by adept communication skills and multi-disciplinary leadership. I am fervently dedicated to the fusion of population data and statistical algorithms to enhance clinical outcome research and the development of innovative therapies.

EDUCATION

BSc, Biochemistry & Pharmacology, *University of Strathclyde/China Pharmaceutical University* 2019–2023

GPA: 3.79/4.00

Relative coursework: Clinical Pharmacology, Pharmaceutics, Pharmaceutical Analysis, Bioinformatics, Statistics and machine learning, Biomedical Biochemistry, Calculus, Linear Algebra, Probability & Statistics, Immunology, Physiology, Bio-organic Chemistry.

MS, Biostatistics, *University of California San Diego* 2023–Present

GPA: 4.00/4.00

Relative coursework: Pharmacokinetics, Pharmacogenomics, Regression Analysis, Survival Analysis, Statistical Inference, Longitudinal Data Analysis, Numerical Analysis, Advanced Epidemiology, Genetic Epidemiology, Clinical Trial Design, Advanced Multivariate Methods.

RESEARCH EXPERIENCES

Pharmacoepidemiology of SGLT-2i & ACEi in Diabetic Patients Jan 2024–Present

- *Researcher*. Supervisor: Dr. Inmaculada (Inma) Hernandez (UC San Diego, La Jolla, CA)
- Investigated into the **pharmacoepidemiological** patterns of the **co-administration** between **SGLT-2i** and **ACEi** in US diabetic patients between Apr 2013 and Dec 2018 after the first SGLT-2i FDA approval.
- Employed **multi-variable logistic regression** & **propensity score matching** on high-dimensional **Medicare D** data.

OGD Astrocyte Mitochondria Imaging Analysis Spet 2022–Apr 2023

- *Researcher*. Supervisor: Dr. Susan Chalmers (University of Strathclyde, Glasgow, Scotland).
- Utilizd FIJI-affiliated ImageJ, aided with Mitochondria Analyzer & KymoAnalyzer plugins, to analyze the shape, size, and localization of **astrocyte mitochondria** under oxygen/glucose deprivation (**OGD**) conditions.
- Conducted **two-way ANOVA** and **principal component analysis** for the date from the acquired live time-lapse images and provided insights into astrocyte mitochondria state in **ischaemic stroke**.

Doxorubicin & Trastuzumab Cardiotoxicity Modeling Apr 2022–Aug 2023

- *Researcher*. Supervisor: Dr. Hua He (China Pharmaceutical University, Nanjing, China)
- Developed an **in vitro-to-in vivo** translational platform to assess the incidence of antineoplastic **drug-induced cardiac dysfunction** based on human-induced pluripotent stem cell-derived cardiomyocytes (**hiPSC-CMs**).
- Depicted the drug-cardiomyocyte interaction via a mechanism-based toxicodynamic (**TD**) model, which was then integrated into a quantitative system pharmacology-physiological-based pharmacokinetics (**QSP-PBPK**) model to form a complete translational platform. Validated the model by comparing the model-predicted and virtual-clinically observed incidence of doxorubicin and trastuzumab-induced cardiac dysfunction.
- Relying on the obtained virtual drug toxicity clinical trial platform, according to the patient variation in previous clinical trials, using the model to **predict the incidence of cardiac dysfunction** in specific patients, which could facilitate optimizing the treatment protocol of antineoplastic agents.

PBPK Modeling of Meropenem in Premature Infants Oct 2021–Mar 2022

- *Researcher*. Supervisor: Dr Hua He (China Pharmaceutical University, Nanjing, China)
- Established a physiologically-based pharmacokinetics (**PBPK**) model of **meropenem** based on healthy adults with **PK-Sim**.
- Expanded the model to **premature infants** and focused on time progress during preterm birth, organ development, and abnormal drug transporter OAT3 expression due to **organ maturity**.
- Adapted the constructed model to common **preterm infant diseases** (pneumonia, sepsis, and meningitis).

CRISPR/dCas9-based MnP-AAO-HFB1 PE-Degradator Dec 2020–Nov 2021

- *Statistical modeler.* Supervisor: Dr. Meiling Lu (China Pharmaceutical University, Nanjing, China)
- Simulated the enzyme production in our **polyethylene** (PE) degradation system and calculated function proteins' **predicted outputs** and proposed industrial manufacturing improvements.
- Applied **support vector machine**, k**-nearest neighboring**, **random forest**, and **principle component analysis** to optimize manganese peroxidase (MnP) structure.

Arctiin Biosynthesis Pathway with High-Throughput Sequences Oct 2020–Aug 2021

- *Analyst.* Supervisor: Dr. Yucheng Zhao (China Pharmaceutical University, Nanjing, China)
- Utilized high-throughput sequencing to conduct *Arctium lappa* L. genome research.
- Explored the **biosynthesis pathway of arctiin** in *Arctium lappa* L. through **multi-omics** (genome, transcriptome, and metabolome) of *Arctium lappa* L., and carried out preliminary wet experiments.

PUBLICATION

- Sang, L., Zhou, Z., Luo, S., **Qian, H.**, Hua, H. Hao, K. (2023). An *in silico* Platform to Predict Cardiotoxicity Risk of Anti-tumor Drug Combination with hiPSC-CMs Based *in vitro* Study. *Pharm. Res.*, 1-16.

TECHNICAL SKILLS

- *Programming*: R (ggplot2, Bioconductor, dplyr, tidyverse, Seurat), HTML/CSS, Markdown, SAS (proc SQL), Python (numpy, PyTorch), Mathematica, Berkeley Madonna.
- *PK/PD Modeling*: R (RsNLME, PKNCA, nlmixr2), Monolix, PK-Sim, MATLAB SimBiology.
- *Software*: Microsoft Office, SnapGene, MEGA, BLAST, EndNote, ChemDraw, Adobe PS, GraphPad, PyMOL, ImageJ.
- *Laboratory*: PCR, Plasmid transformation, SDS-PAGE, Chromatography (Column, HPLC, GC & Preparative), Genetic identification, Mass Spectrometry, Cell culture, JC-1 staining, ELISA, Western Blot.
- *Language*: English (Professional), Mandarin (Native), Wuu Chinese (Native)

AWARDS, CERFTIFICATES & SUPPLEMENT COURSES

HIPAA Research Privacy, CITI Program	Feb 2024
NCA Analysis using open source R, Project Dontabhaktuni	Nov 2023
LIX-PX101VR: Non-compartmental analysis, bioequivalence and beyond, Simulations Plus	Jul 2023
Statistical reasoning and algorithms in pharmacovigilance, Uppsala Monitoring Center	Jul 2022
1st Prize, Scholarship of Exploring World Plan	Jun 2022
Good Clinical Practice (GCP-E6(R2) 2016)	Dec 2021
Gold Medal, International Genetically Engineered Machine (iGEM)	Nov 2021
Best Target Molecule Award, International Directed Evolution Competition (iDEC)	Oct 2021
Prov. 3rd Prize (15%), China Undergraduate Mathematical Contest in Modeling (CUMCM)	Oct 2021
Principles of Clinical Pharmacology, National Health Institute (NIH)	Jul 2021
Meritorious (9%), Mathematical/Interdisciplinary Contest in Modeling (MCM/ICM)	May 2021

EXTRACURRICULAR ACTIVITIES

San Diego Chapter, American Statistical Association (ASA) Sept 2023–Present

- *Member.* Extensively and intensively involved in and communicated with the statistical community in San Diego, CA.

Ministry of Foreign Affair of Sino-UK Specialty, CPU Sept 2019–Jun 2023

- *Head.* Aids communication between students and teachers in CPU Sino-UK specialty.

Network Publicity Department, College Students Art Troupe, CPU Spet 2019–Jun 2020

- *Member.* Organized activities and community service activities within the CPU College Students Art Troupe.