

Yuezhe Li

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Summary

- Hands-on experience in building quantitative system pharmacology (QSP) and physiologically based pharmacokinetic (PBPK) models for antibody-drug conjugates (ADCs), T-cell engagers (TCEs), and gene therapies.
- Extensive experience in client-facing roles, crafting presentation to key decision makers to facilitate model-informed drug development (MIDD)

Skills

- **Applied and Computational Mathematics:** Differential equations, Monte Carlo simulations, agent-based models, machine learning
- **Model-Informed Drug Development (MIDD):** Quantitative system pharmacology (QSP) models, Physiologically based pharmacokinetic (PBPK) models, First-in-human (FiH) dose selection, Exposure-response (E-R) analysis
- **Programming:** R, Julia, Python, MATLAB, SQL (basic), SAS (basic), HTML5 (basic), C/C++ (basic)
- **Laboratory:** Fluorescence microscopy, Immunofluorescence, Optogenetics, Molecular cloning, Mammalian cell culture, Western blot
- **Language:** Mandarin (native), English (fluent)

Relevant Work Experience

Metrum Research Group

Boston, MA

Senior Scientist I

April 2026 – current

- Explored the possibility of using QSP model to predict the risk of interstitial lung disease for novel ADCs with Dxd payload

Research Scientist II

July 2023 – April 2026

- Predicted toxicity profile for novel ADCs based on known toxicities of ADCs with the same payload; developed physiologically based pharmacokinetic (PBPK) models to predict the ADC and free payload exposure in ocular, bone marrow, and other organs; crafted exposure-response (E-R) analysis that linked payload exposure in bone marrow to ADC hematological AEs, and E-R analysis that linked ADC exposure in cornea to ocular toxicity
- Performed dose optimization for antibody-drug conjugate (ADC)-T cell engager (TCE) combination therapies; developed QSP model to predict the tumor growth inhibition for ADC and T cell dependent bispecific antibodies
- Performed dose selection for a novel ADC first-in-human (FiH) study; developed QSP models based on *in vitro* and mouse studies to identify a minimal efficacious dose for human
- Performed dose selection for novel T cell engagers (TCEs) for FiH study; developed QSP models based on *in vitro* and mouse studies to identify pharmacologically active doses for human

Research Scientist I

July 2022 – June 2023

- Crafted patient selection criteria and dose optimization for client's ADC assets that targeted either solid tumors or lymphoma; developed PBPK-QSP models for ADC molecules to capture tumor-killing and on-target off-tumor toxicity
- Developed QSP models for 2 ADC molecules to test multiple hypothetical mechanisms of action that aimed to explain unexpected preclinical and clinical observations
- Developed QSP models for AAV-based gene therapy and prepared corresponding regulatory report; predicted the durability of liver-targeting AAV-based gene therapy using agent-based models

Research Associate

May 2021 – June 2022

- Predicted and validated the immune cell recovery after 7 years after ex-vivo gene therapy; developed QSP models for ex-vivo gene therapies
- Conducted population pharmacokinetic (popPK) analysis and prepared reports for regulatory filings

Yale Graduate Consulting Club

New Haven, CT

Pro Bono Consultant

February 2021 - May 2021

- Conduct market analysis for a local biotech startup; conduct Voice of Customers (VOC) research by interviewing key opinion leaders in proteomics research in collaboration with a team of 5

Impact Consulting

London, UK

Pro Bono Consultant

January 2021 - May 2021

- Conducted market analysis and identified an addressable market for a university startup based in Austria

Education

Ph.D., Biomedical Science, University of Connecticut (GPA 3.9/4.0)	2016 - 2021
MS, Mathematics, Illinois State University (GPA 3.9/4.0)	2014 - 2016
BS, Statistics, Huazhong University of Science and Technology (GPA 3.6/4.0)	2010 - 2014

Certifications

Drug Commercialization, University of California San Diego/ Coursera	2021
Business Foundation Specialization, Wharton Business School/ Coursera	2020
Deep Learning Specialization, DeepLearning.AI/ Coursera	2018

Selected Publications

- **Li, Y.**, Nandy, P., Jordie, E., Peppel, K., Wilkins, A. K., Nuthalapati, S., "Development of an agent-based model to investigate the long-term outcome of a gene therapy targeting a self-renewing organ." (manuscript submitted)
- **Li, Y.**, Wilkins, A. K., Davis, J., Knab, T., Kirouac, D. C., Toukam, M., Boni, J. P., "Quantitative Systems Pharmacology Modeling of Loncastuximab Tesirine-Ipyl Combined with T Cell-Dependent Bispecific Antibodies Bridges Knowledge and Dose Regimen Strategy for Patients with Diffuse Large B-Cell Lymphoma (DLBCL)." NPJ Syst. Biol. Appl. 11, 63 (2025).
- **Li, Y.**, Yann, T., Vera-Licona, P., "Benchmarking Time-Series Data Discretization on Inference Methods." Bioinformatics (2019).
- **Li, Y.**, Chang, Y., & Lin, H. "Statistical Machine Learning in Brain State Classification using EEG Data." Open Journal of Big Data (OJBD) (2015).

Presentations & Workshops

- Harnessing QSP-based virtual populations to optimize novel oncology combination regimens: Antibody Drug Conjugates (ADC) and T Cell Engagers (TCE). International Society of Pharmacometrics (ISoP) 2025 MIDD Series. May 2025.
- Hands-On Tutorial: Introduction to Immuno-Oncology (IO) Quantitative Systems Pharmacology (QSP) Modeling Using the Open-Source Julia Computing Language. American Conference on Pharmacometrics (ACoP) 14. November 2023; National Harbor, MD.

Selected Posters

- **Li Y**, Nandy P, Jordie E, Peppel K, Knab T, Kirouac DC, Wilkins AK, Nuthalapati S. A Novel Agent-based Computational Model for Liver-targeting, AAV-based Gene Therapies Could Predict Response Durability in Hemophilia B Patients Treated with Etranacogene Dezaparvovec. American Society of Gene & Cell Therapy (ASGCT) 2025. May 2025; New Orleans, LA.
- **Li Y**, Wilkins AK, Knab T, Boni JP. Quantitative Systems Pharmacology Modeling of Loncastuximab Tesirine Combined With Mosunetuzumab and Glofitamab Helps Guide Dosing for Patients with DLBCL. American Association for Cancer Research (AACR) Annual Meeting 2024. April 2024; San Diego, CA.
- **Li Y**, Jordie E, Knab T. A multi-organ integrated QSP model for hematopoietic stem cell differentiation to predict the immune cell reconstitution in ex-vivo gene therapy. American Conference on Pharmacometrics (ACoP) 14. November 2023; National Harbor, MD.
- Elmokadem A, Knab T, Jordie E, **Li Y**. Deep QSP modeling: Leveraging Machine Learning for QSP Model Development and Evaluation. American Conference on Pharmacometrics (ACoP) 14. November 2023; National Harbor, MD.
- **Li Y**, Wilkins A. K. Towards the development of a platform PBPK-QSP model in the Julia programming language for evaluating potential toxicities caused by antibody-drug-conjugate therapies. International Conference on Systems Biology (ICSB) 2023. October 2023; Hartford, CT.