Yuezhe Li

yuezheli@gmail.com | New York, NY | (309) 531-8051 | www.linkedin.com/in/yuezheli

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.
- Facilitated in crafting and presenting modeling experience and expertise in business lead development to potential clients

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, 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*

Research Scientist II *July 2023 – current*

- 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

University of Connecticut Health Center *Farmington, CT*

Graduate Assistant *September 2016 – May 2021*

- Improved cancer drug targeting by increasing the precision of related reverse engineering algorithms by 30%; developed a benchmark to identify a suitable discretization method
- Explored causes of diabetes by elucidating the molecular mechanisms linking ciliopathy to diabetes; established that ciliary insulin receptor signaling suppresses glucose-stimulated insulin secretion

National Center for Supercomputing Application *Urbana, IL*

Blue Waters Student Intern *May 2015 – May 2016*

- Provided better meditation monitoring for stress reduction; increased the precision of machine learning models that classify brain states by 30% through combining multiple machine learning models and adaptive training

Leadership and Extracurricular

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 Analytics Nanodegree, Udacity *2020*

Business Foundation Specialization, Wharton Business School/ Coursera *2020*

SQL in Data Science, University of California Davis/ Coursera *2018*

Deep Learning Specialization, DeepLearning.AI/ Coursera *2018*

Selected Publications & Book Chapter

- **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-lpyl 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.**, Shrestha, P., Wu, Y., "Primary cilia sensitize insulin receptor-mediated negative feedback in pancreatic β cells." (manuscript submitted)
- **Li, Y.**, Yann, T., Vera-Licona, P., "Benchmarking Time-Series Data Discretization on Inference Methods." Bioinformatics (2019).
- Akman, O, Comar, T., Harris, A. L., Hrozencik, D., & **Li, Y.**, "Dynamics of Gene Regulatory Networks with Stochastic Propensities." International Journal of Biomathematics (2018).
- **Li, Y.**, Chang, Y., & Lin, H. "Statistical Machine Learning in Brain State Classification using EEG Data." Open Journal of Big Data (OJBD) (2015).
- Subedi, S., **Y. Li,** C. Early, A. Chan, J. Garza, G. Schreiber, Y. Chang, and H. Lin. "A System for the Analysis of EEG Data and Brain State Modeling." Emerging trends in applications and infrastructures for computational biology, bioinformatics, and systems biology: systems and applications. Q. Tran and H. Arabnia. Cambridge: Morgan Kaufmann, 2016. p447-465.

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, Kirouac DC. Quantitative Systems Pharmacology Modeling of Loncastuximab Tesirine Combined With Mosunetuzumab and Glofitamab Helps Guide Dosing for Patients with DLBCL. American Conference on Pharmacometrics (ACoP) 2024. November 2024; Phoenix, AZ.
- Elmokadem A, Davis J, **Li Y**, Swanson E, Knab T, Kirouac DC. Symbolic PKPD-PDE Modeling Using Open-Source Julia Tools. American Conference on Pharmacometrics (ACoP) 2024. November 2024; Phoenix, AZ.

- Boni JP, Knab T, **Li Y**, Wilkins AK. Quantitative Systems Pharmacology Modeling of Mipasetamab Uzopterine Integrates Knowledge and Defines Dosing Strategy for Patients with Sarcoma. The Connective Tissue Oncology Society (CTOS) 2024 Annual Meeting. November 2024; San Diego, CA.
- **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.
- **Li Y,** Elmokadem A, Jordie E, Oganesian O. Extending a Semi-Physiological PopPK Model of the Oral Fixed-Dose Combination of Cedazuridine with Decitabine in Myelodysplastic Syndrome Patients to Characterize an Acute Myeloid Leukemia Patient Population. American Conference on Pharmacometrics (ACoP) 13. November 2022; Aurora, CO.

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.