

# Qinyan(Christy) Feng

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## EDUCATION

### University of California, Los Angeles (UCLA)

*Bachelor of Science in Molecular, Cell, and Developmental Biology*

*Bachelor of Science in Statistics and Data Science*

- Cumulative GPA: **4.0/4.0**, Dean's Honors List

Los Angeles, CA

*Expected Jun 2025*

## RESEARCH INTERESTS

- Immunometabolism, innate immunity, cancer immunology, cancer metabolism, CRISPR technology, bioinformatics

## RESEARCH EXPERIENCE

### Dr. Timothy O'Sullivan's Lab, UCLA MIMG Department

*Undergraduate Research Assistant*

Los Angeles, CA

*Apr 2023 – Present*

- Elucidating the Metabolic Requirement of Human NK Cells
  - Studied the role of environmental serine for supporting primary human and mouse NK cell effector function using cell culture assays, flow cytometry, and stable isotope tracing
  - Independently assessed the role of serine synthesis activity in mouse NK cells *in vitro* and during viral infection *in vivo* using CRISPR editing
  - Studied the role of Myocyte Enhancer Factor 2C (MEF2C) in regulating human NK cell lipid metabolism
- Enhancing Human NK Cell Function Using Non-viral CRISPR Activation (CRISPRa)
  - Optimized multiplex CRISPRa in primary human NK cells to simultaneously overexpress up to three genes
  - Developed CRISPRa-mediated CD64 Fc receptor expression on human NK cells to enhance cytotoxicity during tumor cell coculture

### Dr. Hilary Collier's Lab, UCLA MCDB Department

*Undergraduate Research Assistant*

Los Angeles, CA

*Sep 2023 – Present*

- Conducted computational analysis of time-course bulk RNA and single-cell RNA datasets to identify markers for quiescent and proliferating cancer cells and to investigate the mechanisms of drug tolerance
- Achieved a preliminary method to further annotate quiescent G0 cancer cells by assessing pre-determined markers

### Dr. Natalia Reixach's group, Lilly Biotechnology Center, Eli Lilly and Company

*Research & Development Intern, Protein Engineering Department*

San Diego, CA

*Jun 2024 – Sep 2024*

- Developed a new bispecific single-chain variable fragment (scFv) platform to accelerate bispecific antibody screening
- Cloned 10 bi-specific scFv, purified bi-specific scFv proteins, and validated their bi-specific binding to target antigens

### Sunho (China) Biopharmaceutical Co. Ltd

*Summer Intern, Research & Development Department*

Nanjing, China

*Jun 2023 - Aug 2023*

- Designed Fibroblast Growth Factor 21 (FGF21) variant sequences to achieve anti-degradation and anti-aggregation
- Simulated protein structure using Swiss model and Pymol to analyze the ligand-receptor binding affinity

### Dr. Eiji Yoshihara's Lab, the Lundquist Institute

*Undergraduate Research Assistant*

Torrance, CA

*Jan 2023 – Apr 2023*

- Studied the production of insulin-producing beta cells from stem cells as a potential therapy for type II diabetes

## DATA ANALYSIS PROJECTS

### Insights and Strategies for Optimizing Statistics Education with CourseKata

*Data Analyst, UCLA DataFest Data Analytics Competition*

Los Angeles, CA

*Apr 2024*

- Analyzed how student achievement correlates with the quantity and types of chapter exercise questions in a textbook
- Developed an engagement metric incorporating students' time commitment, confidence, and interest; analyzed its effect on performance using regression models and provided recommendations to improve learning outcomes

### UCLA Waste Audit Project

*Data Analyst, Sustainable LA Grand Challenge Research Program*

Los Angeles, CA

*Apr 2023 - Jun 2023*

- Cleaned, analyzed, and visualized a dataset of "10 years of waste across UCLA" using R and Tableau
- Identified UCLA Buildings producing the greatest waste and visualized hot spot maps for campus waste production

## Assessing Disclosure Rates of Corporate Net Zero Goals

Research Assistant, UCLA Anderson School of Management

Los Angeles, CA

Sep 2022 - Apr 2023

- Collected ESG metric information on Planet, People, Prosperity, and Governance from ~100 sustainability reports
- Conducted data analysis of corporate information transparency and disclosure rates for Net Zero Goal metrics

## PUBLICATIONS

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- Li, J. H., **Feng, Q.**, Ball, A. B., Kapelczak, E. D., Lee, C. D., Hermans, L., Wallerius, M. L., Bormin, J., Matulionis, N., TeSlaa, T., Christofk, H. R., Divakaruni, A. S., O'Sullivan, T. E. Serine is an essential amino acid for human NK cell function. Manuscript in preparation, Nov 2024.
- **Feng, Q.**, Li, J. H., Hermans, L., Ramesh, N., O'Sullivan, T. E. CRISPR activation-mediated CD64 expression in human NK cells enhances antibody-directed cytotoxicity. Manuscript in preparation, Nov 2024.
- Li, J. H., Zhou, A., Lee, C. D., Shah, S. N., Ji, J. H., Vignesh Senthilkumar, Padilla, E. T., Ball, A. B., **Feng, Q.**, Bustillos, C. G., Riggan, L., Alain Greige, Divakaruni, A. S., Annese, F., Cooley, J. A., Skinner, S. A., Cowan, C. W., & O'Sullivan, T. E. (2024). MEF2C regulates NK cell effector functions through control of lipid metabolism. *Nature Immunology*, 25(5), 778–789. <https://doi.org/10.1038/s41590-024-01811-2>

## POSTERS AND PRESENTATIONS

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- Feng, Q. (2024, October 15-17). *Serine metabolism is required for cytokine-activated mouse NK cell function* [Poster session]. La Jolla Immunology Conference (LJIC). San Diego, CA, United States.
- Feng, Q. (2024, October 9). *Serine is an essential amino acid for human NK cells* [Oral presentation]. Innate Immunity and Immunometabolism Seminar. Los Angeles, CA, United States.
- Feng, Q. (2024, May). *Serine is an essential amino acid for human NK cell functions* [Oral presentation]. PhD and Undergraduate Life Scientists in Academic Research (PULSAR) SYMPOSIUM. Los Angeles, CA, United States.
- Feng, Q. (2024, May). *Serine is an essential amino acid for human NK cell functions* [Oral presentation]. UCLA Undergraduate Research Week. Los Angeles, CA, United States.

## SKILLS

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- **Lab Skills:** mammalian cell culture, mouse handling, NK cell isolation, primer design and testing, CRISPR-Cas9 RNP editing/base editing/activation, DNA/RNA isolation, qPCR, western blot, flow cytometry, molecular cloning, E. coli cell transformation, protein purification, ELISA, Octet, data analysis using Flow Jo, Prism, ImageJ
- **Computational Biology and Quantitative Skills:** Bulk RNA sequencing, Single-cell RNA sequencing, Differential Gene Expression, Principal Component Analysis, and cell clustering using R Statistical Language.
- **Computer Skills:** R, Python, Github, Tableau, Wixsite, WordPress, Microsoft Excel

## LEADERSHIP AND INVOLVEMENT

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### In Transcription@UCLA

Los Angeles, CA

Outreach Manager, Assistant Director of Research and Industry Committee

Apr 2023 - Present

- Invited 11 Professors and PhD students to provide professional feedback for 54 participants during the annual BioHackathon Competition, fostering innovations and collaborations in South California science community
- Planned and organized Peer Share and Research/internship Resource Seminar activities with other assistant directors
- Mentored first/second year club members in course planning, resume writing, and research opportunities searching

### Education Without Barriers

Remote

Volunteer Tutor

May 2024 - Present

- Provided personalized weekly math tutoring for a 3<sup>rd</sup> grade leukemia patient, preparing him for re-entry to school
- Created a supportive learning environment by hosting tutor-parent-student meetings and fellow tutor discussions

### Impact Consulting

Remote

Volunteer Consultant

Jun 2022 – Sep 2022

- Partnered with Reading Partners to develop strategies for increasing and accelerating the volunteer tutor recruitment

## LANGUAGES AND INTERESTS

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- Languages: Fluent in Mandarin and English
- Interests: photography (film camera), drawing, piano, badminton, hiking