Leran Chen

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EDUCATION

Columbia University **New York, USA**
Master of Arts in Biotechnology | GPA: 3.93 / 4.0 *Sep 2023 - Oct 2024*
- Major Modules: Cancer Biology; Genomics & Gene Regulation; Cancer Pharmacology; Drug Development

Beijing Normal University **Beijing, China**
Bachelor of Science in Biology | GPA: 3.85 / 4.0 *Sep 2019 - Jul 2023*
- Honors Program (Liyun Class)
- Major Modules: Molecular Biology, Cell Biology, Biochemistry, Bioinformatics, Gene Engineering, Biostatistics, Physiology

RESEARCH EXPERIENCE

Brain Metastases in Breast Cancer **Columbia University Irving Medical Center**
Research Assistant; Advisor: Swarnali Acharyya *May 2024 - Present*
- Generated and validated an immunocompetent model for studying brain metastasis and immune interactions in HER2+ breast cancer.
- Developed model for studying tucatinib (HER2-therapy resistance) *in vivo*
- Interrogated clinical association between mediator genes of brain metastasis

Mechanisms of inflammatory signaling in EGFR-Mutant Lung Cancer Brain Metastasis **Columbia University Irving Medical Center**
Master's Thesis; Co-Advisors: Anup K. Biswas and Swarnali Acharyya *Mar 2024 - Aug 2024*
- Investigated paracrine interactions between cancer cells and brain microenvironment that promote brain metastasis in EGFR-mutant lung cancer.
- Identified novel mediators of brain metastasis using CRISPR-mediated suppression strategies and functional studies combining mouse models and patient sample analysis.

Analysis of Enhancer Mutation in the LUSC and LUAD Genome **Beijing Normal University**
Undergraduate Research Assistant; Advisor: Erli Pang *Sep 2022 - May 2023*
- Integrated somatic-mutation calls with enhancer database regulatory maps and built a reproducible Python workflow to profile enhancer-SNP dysregulation in Lung Adenocarcinoma (LUAD) and Lung Squamous Cell Carcinoma (LUSC) genomes
- Quantified enhancer mutational burden and pinpointed recurrently mutated enhancers, revealing shared and subtype‑specific oncogenic circuits via GO & pathway enrichment

Active Site Plasticity and Product Selectivity of the S-Limonene Synthase **Beijing Normal University**
Undergraduate Research Assistant; Advisor: Dong Yang *Nov 2020 - Aug 2022*
- Investigated the plasticity of the active site of the S-limonene synthase by site-directed mutagenesis
- Verified that the product selectivity was determined by the polarity of the active pockets

PUBLICATIONS & PRESENTATIONS

[1] **Chen L**, Chow A, Ma W, Coker C, Gu Y, Canoll P, Kandpal M, Hibshoosh H, Biswas AK, Acharyya S. A new, immunocompetent brain-metastatic mouse model of HER2-positive breast cancer. ***Clin Exp Metastasis.*** 2025 Apr 12;42(3):25. doi: 10.1007/s10585-025-10343-4. PMID: 40220135.

[2] **Poster Presentation** | **"**A new, immunocompetent brain-metastatic mouse model of HER2-positive breast cancer" | Department of Pathology and Cell Biology Research Retreat, Columbia University | December 2024.

[3] **Invited Talk** | Marina Kaplan Project Symposium on CNS Metastasis, Metastatic Breast Cancer Alliance (MBC Alliance) | September 2025.

HONORS & AWARDS

First-Class Incentive Scholarship of Beijing Normal University (Top 20%) *2020 & 2021*

First-Class Competition Scholarship of Beijing Normal University *2021*

Social Work Award of Beijing Normal University *2021*

Merit Student of Beijing Normal University (Top 5%) *2020*

First-Class Scholarship of Beijing Normal University (Top 10%) *2020*

First Prize of Beijing University Students' Biology Knowledge Contest (Top 10%) *2020*

LEADERSHIP & SERVICE

Research Mentorship & Training **Columbia University Irving Medical Center**

Dr. Acharyya's lab *June 2024 - Present*

- Supervised 4 trainees: 2 completed undergraduate summer interns (David Pan and Thomas Lo, 2024) and current trainees Sho Takahashi (MD) and Irene Choi (undergraduate)

International Genetically Engineered Machine Competition (iGEM) **Beijing Normal University**

Leader; Gold Medalist *Jan 2021 - Mar 2022*

- Led 35-member Beijing Normal University iGEM team across wet/dry lab modules from experimental design to final presentation
- Designed a universal platform for protein production which could detect and exterminate the mutated bacteria in colonies to cope with the problem of genetic instability of genetically engineered microorganisms in industrial production

Biology Intern Teacher **Shenzhen Longhua Senior High School**

Volunteer; Designed and delivered biology lessons for grade-12 students *Aug 2022*

Teaching Assistant (Organic Chemistry) **Beijing Normal University**

Held weekly 2-hour review sessions and office hours *Sep 2021 - Jan 2022*

SKILLS

Computational: Python, R, GraphPad, Prism, QuPath, SnapGene, BLAST/Database Search, Illustrator, Photoshop

Instruments: Microtome (FFPE sectioning), Vibratome (fresh/fixed brain slices), AMI *In-vivo* Bioluminescence Imaging System, Fluorescent Microscope

Mouse Experiment: Injections (Intracardiac/Subcutaneous/Intraperitoneal Injection, Oral Gavage), Blood and Tissue Collection, Metastatic Cancer Cell Isolation & Culture, Drug Treatment in Mice

Wet Laboratory: Mouse and Human Cell Culture, Cell Transfection, CRISPRi & RNAi knock-down, Immunoprecipitation, Western Blot, Mouse and Human Tissue H&E/Immunohistochemistry, ELISA, Cell Proliferation/Viability Assay, qRT-PCR, DNA cloning, Bacterial Transformation

Languages: Mandarin (Native), Cantonese (Native), English (GRE 326, TOEFL 111)

Interests: Bouldering, Badminton, Guitar