King L. Hung

Postdoctoral Fellow, Scripps Research
khung@scripps.edu • www.kinglhung.org
ORCID: 0000-0002-3662-4662

EDUCATION

2018–2024 **Ph.D.**, Cancer Biology, Stanford University
2013–2015 **B.S.**, Biochemistry, *magna cum laude*, University of Washington
2011–2013 **A.S.**, Shoreline Community College, WA

PROFESSIONAL EXPERIENCE

2024– **Postdoctoral Fellow**, Scripps Research
Department of Neuroscience. Advisor: Ardem Patapoutian
Research: Force-sensing and signaling logic of cells

2019–2024 **Graduate Researcher**, Stanford University
Departments of Genetics and of Dermatology. Advisor: Howard Y. Chang
Research: Gene regulation and genome restructuring in cancer

2015–2018 **Research Scientist**, Seattle Children's Research Institute
Center for Immunity and Immunotherapies. Advisor: David J. Rawlings
Research: Engineering and differentiation of immune cells

2014–2015 **Undergraduate Researcher**, University of Washington
Department of Biochemistry. Advisor: David Kimelman
Research: Cell cycle control of pluripotent cells in embryonic development

AWARDS AND HONORS

2024 Denise A. Chan Best Thesis Award in Cancer Biology, Stanford University
2023 Forbes 30 Under 30 – Science
2023 Harold M. Weintraub Graduate Student Award
2022 NCI F99/K00 Predoctoral to Postdoctoral Fellow Transition Award
2018 Stanford Graduate Fellowship
2015 Honors in Biochemistry, University of Washington
2013–2015 Dean's List, University of Washington

RESEARCH FUNDING

2025-2028 **K00 CA274692**, National Cancer Institute
Role: Principal Investigator. Funding: $399,276
Amplifications and signaling of oncoproteins in cancer

2022–2024 **F99 CA274692**, National Cancer Institute
Role: Principal Investigator. Funding: $81,572
Regulation and retention of extrachromosomal oncogene amplifications in cancer

2018–2021 **Stanford Graduate Fellowship**, Stanford University
Role: Principal Investigator. Funding: $273,710
Endowed Stanford Graduate Fellowship in Science & Engineering

PATENTS

Granted:

1. Engraftable cell-based immunotherapy for long-term delivery of therapeutic proteins (US11,939,594)

Pending:

2. Methods for targeted purification and profiling of human extrachromosomal DNA (US63/281,247)
3. DNA element responsive to extrachromosomal DNA in cancer cells (US18/700,185)

PUBLICATIONS

Selected Articles:

1. **Hung KL***, Sankar V*, et al., Chang HY. Genetic elements retain extrachromosomal DNA in dividing cancer cells. (In revision) (*co-first authorship)

2. **Hung KL***, Jones MG*, Wong ITL*, Curtis EJ*, et al., Chang HY. Coordinated inheritance of extrachromosomal DNAs in cancer cells. ***Nature***. (2024). DOI: 10.1038/s41586-024-07861-8. (*co-first authorship)

3. **Hung KL**, Luebeck J, et al., Chang HY. Targeted profiling of human extrachromosomal DNA by CRISPR-CATCH. ***Nature Genetics***. (2022). DOI: 10.1038/s41588-022-01190-0.

4. **Hung KL**, Mischel PS, Chang HY. Gene regulation on extrachromosomal DNA. ***Nature Structural & Molecular Biology***. (2022). DOI: 10.1038/s41594-022-00806-7. (Review article)

5. **Hung KL*,** Yost KE*, Xie L*, et al., Chang HY. ecDNA hubs drive cooperative intermolecular oncogene expression. ***Nature***. (2021). DOI: 10.1038/s41586-021-04116-8. (*co-first authorship)

6. **Hung KL**, Meitlis I, et al., Rawlings DJ, James RG. Engineering protein-secreting plasma cells by homology-directed repair in primary human B cells. ***Molecular Therapy***. (2018). DOI: 10.1016/j.ymthe.2017.11.012.

Other Publications:

7. Kraft K, Murphy SE, Jones MG, Shi Q, Bhargava-Shah A, Luong C, **Hung KL**, et al. Enhancer activation from transposable elements in extrachromosomal DNA. ***bioRxiv***. (In revision)

8. Yost KE, Zhao Y, **Hung KL**, et al. Three-dimensional genome landscape of primary human cancers. ***Nature Genetics***. (Accepted)

9. Ashkin EL, Tang YJ, Xu H, **Hung KL**, et al. A STAG2-PAXIP1/PAGR1 axis suppresses lung tumorigenesis. ***Journal of Experimental Medicine***. (2024). DOI: 10.1084/jem.20240765.

10. Bailey C, Pich O, Thol K, Watkins TBK, Luebeck J, Rowan A, Stavrou G, Weiser NE, Dameracharla B, Bentham R, Lu WT, Kittle J, Yang SYC, Howitt BE, Sharma N, Litovchenko M, Salgado R, **Hung KL**, et al. Origins and impact of extrachromosomal DNA. ***Nature***. (2024). DOI: 10.1038/s41586-024-08107-3.

11. Zhu K, Jones MG, Luebeck J, Bu X, Yi H, **Hung KL**, et al. CoRAL accurately resolves extrachromosomal DNA genome structures with long-read sequencing. ***Genome Research***. (2024). DOI: 10.1101/gr.279131.124.

12. Rose JC, Belk JA, Wong ITL, Luebeck J, Horn HT, Daniel B, Jones MG, Yost KE, **Hung KL**, et al. Disparate pathways for extrachromosomal DNA biogenesis and genomic DNA repair. ***Cancer Discovery***. (2024). DOI: 10.1158/2159-8290.CD-23-1117.

13. Chapman OS, Luebeck J, Sridhar S, Wong ITL, Dixit D, Wang S, Prasad G, Rajkumar U, Pagadala M, Larson JD, He BJ, **Hung KL**, et al. Circular extrachromosomal DNA promotes tumor heterogeneity in high-risk medulloblastoma. ***Nature Genetics***. (2023). DOI: 10.1038/s41588-023-01551-3.

14. Chamorro González R, Conrad T, Stöber MC, Xu R, Giurgiu M, Rodriguez-Fos E, Kasack K, Brückner L, van Leen E, Helmsauer K, Garcia HD, Stefanova ME, **Hung KL**, et al. Parallel sequencing of extrachromosomal circular DNAs and transcriptomes in single cancer cells. ***Nature Genetics***. (2023). DOI: 10.1038/s41588-023-01386-y.

15. Gonzalez-Sandoval A, Pekrun K, Tsuji S, Zhang F, **Hung KL**, Chang HY, Kay MA. The AAV capsid can influence the epigenetic marking of rAAV delivered episomal genomes in a species dependent manner. ***Nature Communications***. (2023). DOI: 10.1038/s41467-023-38106-3.

16. Cheng RYH, **Hung KL**, et al. Ex vivo engineered human plasma cells exhibit robust protein secretion and long-term engraftment in vivo. ***Nature Communications***. (2022). DOI: 10.1038/s41467-022-33787-8.

17. Lange JT, Rose JC, Chen CY, Pichugin Y, Xie L, Tang J, **Hung KL**, et al. The evolutionary dynamics of extrachromosomal DNA in human cancers. ***Nature Genetics***. (2022). DOI: 10.1038/s41588-022-01177-x.

18. Weiser NE, **Hung KL**, Chang HY. Oncogene convergence in extrachromosomal DNA hubs. ***Cancer Discovery***. (2022). DOI: 10.1158/2159-8290.CD-22-0076.

19. Nuñez JK, Chen J, Pommier GC, Cogan JZ, Replogle JM, Adriaens C, Ramadoss GN, Shi Q, **Hung KL**, et al. Genome-wide programmable transcriptional memory by CRISPR-based epigenome editing. ***Cell***. (2021). DOI: 10.1016/j.cell.2021.03.025.

20. Cai H, Chew SK, Li C, Tsai MK, Andrejka L, Murray CW, Hughes NW, Shuldiner EG, Ashkin EL, Tang R, **Hung KL**, et al. A functional taxonomy of tumor suppression in oncogenic KRAS-driven lung cancer. ***Cancer Discovery***. (2021). DOI: 10.1158/2159-8290.CD-20-1325.

21. Bouldin CM, Manning AJ, Peng YH, Farr GH III, **Hung KL**, Dong A, Kimelman D. Wnt signaling and tbx16 form a bistable switch to commit bipotential progenitors to mesoderm. ***Development***. (2015). DOI: 10.1242/dev.124024.

MENTORING

Scripps Research & UC San Diego (2024–):

2024– UC San Diego Biology Undergraduate and Master's Mentorship Program

Stanford University (2020–2024):

2022–2024	Venkat Sankar	Genetics PhD student, rotation and thesis projects
2022–2024	Britney Jiayu He	Research technician, postbaccalaureate project
2024	Ezekiel Delgado	Genetics PhD student, rotation project
2023	Sherry Yang	Bioengineering PhD student, rotation project
2022	Jeremy D'Silva	Cancer Biology PhD student, rotation project
2022	Kevin Liu	Cancer Biology PhD student, rotation project
2020	Peter Du	Cancer Biology PhD student, rotation project
2020	Ian Ferguson	Cancer Biology PhD student, rotation project

TEACHING

2012–2013 Tutor, Mathematics
Math Learning Center, Shoreline Community College, WA

PUBLIC ENGAGEMENT

11/2024 **Invited speaker**, Fremont High School Scientist Society, Sunnyvale, CA
07/2024 **Invited speaker**, EXPLORE Lecture Series For High School Students, Stanford, CA
06/2024 **Speaker**, Stanford Institutes of Medicine Summer Research Program For High School Students, Stanford, CA
01/2024 **Speaker**, Kennedy Middle School, Redwood City, CA
07/2023 **Invited speaker**, EXPLORE Lecture Series For High School Students, Stanford, CA
06/2023 **Invited speaker**, The Evolution of Science at Stanford Medicine Dinner, Atherton, CA
07/2022 **Invited interview guest**, Axial Podcast
07/2022 **Speaker**, EXPLORE Lecture Series For High School Students, Stanford, CA
06/2022 **Speaker**, Stanford Institutes of Medicine Summer Research Program For High School Students, Stanford, CA
03/2022 **Speaker**, Marin Academy, San Rafael, CA

SELECTED TALKS

Invited Talks:

11/2024 Best Thesis Award acceptance talk, Stanford Cancer Biology Annual Conference, Santa Cruz, CA
03/2024 Stanford Biosciences Annual Welcome Program, Stanford University, CA
02/2024 Cancer Grand Challenges Frontiers in Cancer Research Seminar Series, Cancer Research UK and the National Cancer Institute

01/2024 Variant Effects Seminar Series, Atlas of Variant Effects Alliance
10/2023 Howard Hughes Medical Institute Janelia Research Campus, campus-wide seminar, Ashburn, VA
05/2023 Weintraub Symposium, Fred Hutchinson Cancer Center, Seattle, WA

Conference Talks and Seminars:
05/2024 Program in Epithelial Biology Seminar, Stanford University, CA
05/2024 Cancer Biology Program Thesis Defense, Stanford University, CA
11/2023 Cancer Grand Challenges eDyNAmiC Annual Symposium, Long Island City, NY
09/2023 Stanford Genetics Conference on Structural Variants and DNA Repeats, Stanford, CA
08/2023 National Cancer Institute F99/K00 Awardees Annual Meeting, National Institutes of Health, Bethesda, MD
05/2023 The Biology of Genomes Annual Meeting, Cold Spring Harbor Laboratory, NY
11/2022 National Cancer Institute F99/K00 Awardees Monthly Seminar, National Institutes of Health, Bethesda, MD
10/2022 Program in Epithelial Biology Seminar, Stanford University, CA
10/2022 National Human Genome Research Institute Centers of Excellence in Genomic Science Annual Meeting, Duke University, NC
11/2021 (*Best Talk Award*) Cancer Biology Annual Conference, Stanford University, CA
10/2021 National Human Genome Research Institute Centers of Excellence in Genomic Science Annual Meeting, New York City, NY
09/2021 Cancer Biology Lecture Seminar, Stanford University, CA
05/2018 American Society of Gene and Cell Therapy Annual Meeting, Chicago, IL
04/2018 Inter-Center Discovery Seminar, Seattle Children's Research Institute, Seattle, WA