

King L. Hung

NCI F99/K00 Doctoral Fellow, Stanford University

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EDUCATION

- 2018–2024 **Ph.D.** (expected), 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

- 2019– **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

- 2023 Harold M. Weintraub Graduate Student Award
2023 Forbes 30 Under 30 – Science
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

PUBLICATIONS

Selected Research Articles:

1. **Hung KL**, Luebeck J, et al. Targeted profiling of human extrachromosomal DNA by CRISPR-CATCH. *Nature Genetics*. (2022). DOI: 10.1038/s41588-022-01190-0.
2. **Hung KL***, Yost KE*, Xie L*, et al. ecDNA hubs drive cooperative intermolecular oncogene expression. *Nature*. (2021). DOI: 10.1038/s41586-021-04116-8. (*co-first authorship)
3. **Hung KL**, Meitlis I, et al. 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.

Selected Review:

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

Preprints/In Revision:

5. **Hung KL***, Jones MG*, Wong ITL*, et al. Coordinated inheritance of extrachromosomal DNA species in human cancer cells. *bioRxiv*. (In Revision) (*co-first authorship)
6. Ashkin EL, Tang YJ, Xu H, **Hung KL**, et al. A STAG2-PAXIP1/PAGR1 axis suppresses lung tumorigenesis. (Submitted)
7. 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. *bioRxiv*.
8. Bailey C, Pich O, Thol K, Luebeck J, Stavrou G, Lu WT, Kittle J, Bentham R, Sharma N, Litovchenko M, Salgado R, **Hung KL**, et al. Origins and impact of extrachromosomal DNA. (In Revision)
9. Yost KE, Zhao Y, **Hung KL**, et al. Three-dimensional genome landscape of primary human cancers. (In Revision)
10. Rose JC, Wong ITL, Daniel B, Jones MG, Yost KE, **Hung KL**, et al. Disparate pathways for extrachromosomal DNA biogenesis and genomic DNA repair. *bioRxiv*. (In Revision)

Other Publications:

11. 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.
12. González RC, 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.
13. 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.
14. 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.
15. 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.

King L. Hung

16. Weiser NE, **Hung KL**, Chang HY. Oncogene convergence in extrachromosomal DNA hubs. *Cancer Discovery*. (2022). DOI: 10.1158/2159-8290.CD-22-0076.
17. 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.
18. 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.
19. 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.

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)

RESEARCH FUNDING

2022–2028 F99/K00 CA274692, National Cancer Institute (role: PI)

2018–2021 Stanford Graduate Fellowship, Stanford University (role: PI)

MENTORING

Stanford University (2020 – Present):

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

TEACHING

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

PUBLIC ENGAGEMENT

- 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, Stanford, CA
- 03/2022 Speaker, Marin Academy, San Rafael, CA

SELECTED TALKS

- 05/2024 **Talk:** Program in Epithelial Biology Seminar, Stanford University, CA (scheduled)
- 05/2024 **Talk:** Cancer Biology Program Thesis Defense, Stanford University, CA (scheduled)
- 03/2024 **Invited Talk:** Stanford Biosciences Annual Welcome Program, Stanford University, CA
- 02/2024 **Invited Talk:** Cancer Grand Challenges Frontiers in Cancer Research Seminar Series, Cancer Research UK and the National Cancer Institute
- 01/2024 **Invited Talk:** Variant Effects Seminar Series, Atlas of Variant Effects Alliance
- 11/2023 **Talk:** Cancer Grand Challenges eDyNAmiC Annual Symposium, Long Island City, NY
- 10/2023 **Invited Talk:** Howard Hughes Medical Institute Janelia Research Campus, campus-wide seminar, Ashburn, VA
- 09/2023 **Talk:** Stanford Genetics Conference on Structural Variants and DNA Repeats, Stanford, CA
- 08/2023 **Talk:** National Cancer Institute F99/K00 Awardees Annual Meeting, National Institutes of Health, Bethesda, MD
- 05/2023 **Talk:** The Biology of Genomes Annual Meeting, Cold Spring Harbor Laboratory, NY
- 05/2023 **Invited Talk:** Weintraub Symposium, Fred Hutchinson Cancer Center, Seattle, WA
- 11/2022 **Talk:** National Cancer Institute F99/K00 Awardees Monthly Seminar, National Institutes of Health, Bethesda, MD
- 10/2022 **Talk:** Program in Epithelial Biology Seminar, Stanford University, CA
- 10/2022 **Talk:** National Human Genome Research Institute Centers of Excellence in Genomic Science Annual Meeting, Duke University, NC
- 11/2021 **Talk:** (*Best Talk Award*) Cancer Biology Annual Conference, Stanford University, CA
- 10/2021 **Talk:** National Human Genome Research Institute Centers of Excellence in Genomic Science Annual Meeting, New York City, NY
- 09/2021 **Talk:** Cancer Biology Lecture Seminar, Stanford University, CA
- 05/2018 **Talk:** American Society of Gene and Cell Therapy Annual Meeting, Chicago, IL
- 04/2018 **Talk:** Inter-Center Discovery Seminar, Seattle Children's Research Institute, Seattle, WA