Karen Shih

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https://kyshih.github.io/karenshih

EDUCATION

Stanford University September 2020 – present
PhD candidate in Biology
PhD minor in Computer Science June 2024 – present

- Coursework: Programming Methodology, Programming Abstraction, Applied Matrix Theory, Biostatistics
- Anticipated Coursework: Machine Learning, Artificial Intelligence, Deep Learning, Reinforcement Learning, Design and Analysis of Algorithms, Statistical Inference

University of California, Berkeley, Berkeley, CA 2014 - 2018
B.A., (Honors) Molecular & Cell Biology, Emphasis: Cell and Developmental Biology

AWARDS & HONORS

Cellular and Molecular Training Program Trainee (2021-2023) Stanford, CA
Berkeley Scholarship (2014-2018) Berkeley, CA
merit-based scholarship in recognition of outstanding academic achievement
I.L. Chaikoff Memorial Award (2018) in Molecular & Cell Biology department Berkeley, CA
in recognition of academic achievement and excellence in research for senior honors thesis

WORK EXPERIENCE

Research Assistant Aug 2018 - Aug 2020
Dr. Michael Rape Lab, University of California, Berkeley Berkeley, CA

- Project: Uncover the redox control of a ubiquitin ligase $CRL2^{FEM1B}$ and investigate additional protein substrates of $CRL2^{FEM1B}$
- Managed mouse breeding colony and performed phenotypic characterization of knockout mice including genotyping, histology, and expression analysis
- Maintained cell cultures, as well as conducted biochemical experiments including flow cytometry, fluorescence polarization assay and co-immunoprecipitation
- Managed lab supplies

Undergraduate Researcher Feb 2017 - Aug 2018
Dr. Michael Rape Lab, University of California, Berkeley Berkeley, CA

- Project: investigated the redox control of a ubiquitin ligase $CRL2^{FEM1B}$ in nutrient sensing pathways
- Maintain cell cultures and perform biochemical experiments with guidance of postdoc mentor

- Promoted to Research Assistant in recognition of my performance

Undergraduate Researcher Feb - Dec 2016
Dr. Rebecca Heald Lab, University of California, Berkeley Berkeley, CA

- Explored effects of ploidy on subcellular-size relationships in *Xenopus* via *in vitro* fertilization, embryo immunofluorescence and fluorescence microscopy
- Promoted to part-time undergraduate researcher

TEACHING EXPERIENCES

Stanford University

Teaching Assistant: Cell Biology (BIO 86) March 2021 – June 2021

- Led discussion sections for undergraduates and graduate students

Teaching Assistant: Topics in Cancer Biology (BIO 124) September 2021 – December 2021

PUBLICATIONS

Manford AG, Rodríguez-Pérez F, **Shih KY**, Shi Z, Berdan CA, Choe M, Titov DV, Nomura DK, Rape M. A Cellular Mechanism to Detect and Alleviate Reductive Stress. Cell. 2020 Oct 1;183(1):46-61.e21. doi: 10.1016/j.cell.2020.08.034. Epub 2020 Sep 16. PMID: 32941802.

Manford AG, Mena EL, **Shih KY**, Gee CL, McMinimy R, Martínez-González B, Sherriff R, Lew B, Zoltek M, Rodríguez-Pérez F, Woldesenbet M, Kuriyan J, Rape M. Structural basis and regulation of the reductive stress response. Cell. 2021 Oct 14;184(21):5375-5390.e16. doi: 10.1016/j.cell.2021.09.002. Epub 2021 Sep 24. PMID: 34562363; PMCID: PMC8810291.

TECHNICAL SKILLS

Python (NumPy, pandas, matplotlib), Linux, GitHub, R, C++ (in order of proficiency)