

Benjamin D. Harris

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Dynamic computational biologist with over 8 years of experience in machine learning and bioinformatics, driving breakthroughs in cell therapy, functional genomics, and developmental biology. Expert in leading cross-functional teams and co-authoring regulatory submissions and 7 clinical/research conference presentations. Passionate about leveraging data to accelerate life sciences innovation.

Work Experience

- 2024–Present **Consultant, Stealth AI for Immunology.**
- Conduct strategy, scientific, and competitive intelligence research to advance a pre-seed stealth immunology company
- 2021–Present **Computational Biologist II, Lyell Immunopharma.**
- Integrated clinical, translational and sequencing data to support development of LYL314 (CD19/CD20 CAR-T) into 2 pivotal trials
 - Collaborate with research, process sciences, and MSAT teams on design, execution, analysis and presentation of experiments that impact the direction of Tumor Infiltrating Lymphocytes (TIL) program
 - Built pipelines for bulkTCRseq and scRNA/TCR/CITEseq to standardize data analysis across the computational team
 - Co-author for regulatory documents (IND, RMAT, EOP1) and 7 clinical/research conference presentations across 3 clinical programs (presenter for 1)

Education

- 2017–2021 **PhD, Cold Spring Harbor Laboratory (CSHL),** Cold Spring Harbor, NY, Biological Sciences.
- 2013–2017 **Bachelors of Arts, Colgate University,** Hamilton, NY, *Computer Science, Biology.* Biology Honors, Computer Science Honors, Cum Laude, Upsilon Pi Epsilon, Beta Beta Beta, Christopher Oberheim Memorial Award

Research Experience

- 2018–2021 **Graduate research associate, Gillis Lab, CSHL.**
Analysis of bulk and single-cell sequencing to understand co-expression relationships that define cell types in neurons, hematopoietic stem cells, and maize meristem
- 2016–2017 **Intern, Atwal Lab, CSHL.**
Identification of novel cancer vaccine targets by analysis of large scale gene expression databases (GTEx and TCGA)
- 2015 **Intern, Sobie Lab, Icahn School of Medicine.**
Computational modeling of cardiac action potentials with GPU computing
- 2012–2014 **Intern, Simonds Lab, National Institute of Diabetes, Digestive Diseases and Kidneys,**
Wet lab research studying neuro-endocrine signaling.

Relevant Skills

- 2011–Present **Computer programming experience,** Python, R, Bash, C, C++, Java, Matlab.
- 2015–Present **Computational biology experience,** Scanpy, Seurat, Monocle, STAR, DESeq2, SRA-toolkit, SCVI, Samtools, etc.
- Other Software,** Seaborn+Matplotlib, Numpy/Scipy/Pandas, Conda, UGE/SGE, Sklearn, Git, Tidyverse, Nextflow, Snakemake, Shiny, Linux, Terraform, AWS, CUDA.

Peer reviewed publications

Harris, Benjamin D., Megan Crow, Stephan Fischer, and Jesse Gillis. Single-cell co-expression analysis reveals that transcriptional modules are shared across cell types in the brain. *Cell Systems*, 2021

Harris, Benjamin D., John Lee, and Jesse Gillis. A Meta-Analytic Single-Cell Atlas of Mouse Bone Marrow Hematopoietic Development. *BioRxiv*, 2021

Stephan Fischer, Megan Crow, **Harris, Benjamin D.**, and Jesse Gillis. Scaling up reproducible research for single cell transcriptomics using MetaNeighbor. *Nature Protocols*, 2021

Xiaosa Xu, Megan Crow, Brian R. Rice, Forrest Li, **Harris, Benjamin** ..., Jesse Gillis, and David Jackson. Single-cell RNA sequencing of developing maize ears facilitates functional analysis and trait candidate gene discovery. *Developmental Cell*, 2021

Jason A Carter, Bharati Matta, Jenna Battaglia, Carter Somerville, **Harris, Benjamin D**, Margaret LaPan, Gurinder S Atwal, and Betsy J Barnes. Identification of pan-cancer/testis genes and validation of therapeutic targeting in triple-negative breast cancer: Lin28a-and siglece-based vaccination induces anti-tumor immunity and inhibits metastasis. *JITC*, 2023

Selected Presentations

2022 **The Epi-R technology produces a polyclonal TIL product with diverse tumor reactive clones that have stem-like qualities and anti-tumor function**, *Poster*, Society for Immunotherapy of Cancer.

2020 **Multiscale Co-Expression in the Brain**, *Oral Presentation*, Intelligent Systems for Molecular Biology Network Biology COSI.

2020 **Multiscale Co-Expression in the Brain**, *Poster*, Biology of Genomes.

2019 **Methods and Statistics for Differential Co-expression in scRNAseq**, *Poster*, Single Cell Analysis.

Outreach and Service

2021 **Research Mentor**, *CSHL Undergraduate Research Program*.

2019, 2021 **Lecturer**, *CSHL Undergraduate Research Program Programming Bootcamp*.

2020-2021 **Co-organizer**, *Programming Skills Seminar Series*, CSHL Quantitative Biology.

2019 **Graduate School Programming Bootcamp**, *CSHL*, 2 Lectures Taught.

Other Publications

Toby P. Aicher, Dániel L. Barabási, **Harris, Benjamin D.**, Ajay Nadig, and Kaitlin L. Williams. Ten simple rules for getting the most out of a summer laboratory internship. *PLOS Computational Biology*, 2017

Mritunjay Pandey, Jian-Hua Zhang, Santosh K. Mishra, Poorni R. Adikaram, Mark A. **Harris, Benjamin**, ..., and William F. Simonds. A central role for R7bp in the regulation of itch sensation. *PAIN*, 2017

Jian-Hua Zhang, Mritunjay Pandey, John F. Kahler, Anna Loshakov, **Harris, Benjamin**, Pradeep K. Dagur, Yin-Yuan Mo, and William F. Simonds. Improving the specificity and efficacy of CRISPR/CAS9 and gRNA through target specific DNA reporter. *Journal of Biotechnology*, 2014