

Matthew G. Jones, PhD Candidate

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Education

[†] Indicates expected

2017–2022 [†] Ph.D., Bioinformatics, University of California, San Francisco

Thesis Title: Following tumor progression step-by-step with CRISPR/Cas9-based single-cell lineage tracing technologies and improved computational methods

Research Advisors: Jonathan Weissman and Nir Yosef

2013–2017 B.A., Computer Science, University of California, Berkeley

Research Advisors: Rasmus Nielsen, Russ Corbett-Detig, & Nir Yosef

Publications

Journal Articles

- (1) Yang D*, **Jones MG***, ..., Yosef N, Jacks T, Weissman JS. [Lineage tracing reveals the phylogenomics, plasticity, and paths of tumor evolution](#). *Cell*. 2022
- (2) **Jones MG***, Rosen Y*, Yosef N. [Interactive, integrated analysis of single-cell transcriptomic and phylogenetic data with PhyloVision](#). *Cell Reports Methods*. 2022.
- (3) Gong W*, Granados A*, Hu J*, **Jones MG***, Raz O*, Salvador-Martinez I*, Zhang H*, ..., Meyer P. [Benchmarked approaches for cell lineage reconstructions of in vitro dividing cells and in silico models of Caenorhabditis elegans and Mus musculus developmental trees](#). *Cell Systems*. 2021.
- (4) Quinn JJQ*, **Jones MG***, Okimoto RA, Nanjo S, Chan MM, Yosef N, Bivona TG, Weissman JS. [Single-cell lineages reveal the rates, routes, and drivers of metastasis in cancer xenografts](#). *Science*. 2021
- (5) **Jones MG***, Khodaverdian A*, Quinn JJ*, Chan MM, Hussmann JA, Wang R, Xu C, Weissman JS, Yosef N. [Inference of Single Cell Phylogenies from Lineage Tracing Data with Cassiopeia](#). *Genome Biology*. 2020
- (6) Newberry RW, ..., **Jones MG**, ..., DeGrado WF, Kampmann M. [Robust Sequence Determinants of \$\alpha\$ -Synuclein Toxicity in Yeast Implicate Membrane Binding](#). *ACS Chem. Biol.*. 2020
- (7) DeTomaso D*, **Jones MG***, Subramaniam M, Ashuach T, Ye JC, Yosef N. [Functional Interpretation of Single-Cell Similarity Maps](#). *Nature Communications*. 2019

- (8) Chan MM*, Smith ZD*, Grosswendt S, Kretzmer H, Norman T, Adamson B, Jost M, Quinn JJ, Yang D, **Jones MG**, Khodaverdian A, Yosef N, Meissner A, Weissman JS. [Molecular recording of mammalian embryogenesis](#). *Nature*. 2019
- (9) Corbett-Detig, R. and **Jones, M.** [SELAM: Simulation of Epistasis and Local adaptation during Admixture with Mate choice](#). *Bioinformatics*. 2016

*** denotes equal contribution**

Refereed Workshop Papers

- (1) Ouardini K, Lopez R, **Jones MG**, Prillo S, Zhang R, Jordan MI, Yosef N. [Reconstructing unobserved cellular states from paired single-cell lineage tracing and transcriptomics data](#). ICML Workshop in Computational Biology. 2021.

Teaching Assistant

2020	CS176: Algorithms for Computational Biology	University of California, Berkeley
2020	BP205B: Dynamical Systems Modeling	University of California, San Francisco
2019	BP205B: Dynamical Systems Modeling	University of California, San Francisco
2018	CS176: Algorithms for Computational Biology	University of California, Berkeley

Funding, Awards & Honors

2019-2022	UCSF Discovery Fellowship
2020	Allen Institute Cell Lineage Reconstruction DREAM Challenge Best Performer
2019	Quantitative Biology Consortium Retreat Best Poster
2018	Quantitative Biology Consortium Retreat Best Poster

Presentations

Invited Talks

2022	Stanford Biostatistics Workshop, seminar
2022	UCSF Single Cell Interest Group, seminar
2022	Cell Circuits and Epigenomics @ Broad Institute, seminar

2021 Greenleaf Lab @ Stanford, group meeting
 2021 Cellular & Tissue Genomics @ Genentech, seminar
 2021 Wysocka Lab @ Stanford, group meeting
 2021 Chang Lab @ Stanford, group meeting
 2021 Weinberg Lab @ MIT, journal club
 2021 Royer Group @ Biohub & Wagner Group @ UCSF, group meeting
 2021 AI/ML @ Genentech, seminar
 2021 NIH Single Cell Users Group, seminar
 2021 Yale Center for Biomedical Data Science, seminar
 2020 UC Berkeley Computational Biology Skills Seminar, seminar
 2019 UC Berkeley Computational Biology Skills Seminar, seminar

Contributed Talks

2021 NIH Centers of Excellence in Genomic Science (CEGS) Annual Meeting
 2021 Society for Molecular Biology and Evolution (SMBE) Annual Meeting
 2021 The Cancer Target Discovery and Development Alliance NIH Site Visit
 2021 CZI Biohub Seed Networks Computational Biology Meeting
 2020 Hindsight 2020 - The Allen Institute Developmental Recording Symposium
 2020 CZI Seed Network 2020 Annual Meeting
 2020 Center for Genomic Editing and Recording (CGER) Retreat
 2019 UC Berkeley Computational and Genomic Biology Retreat
 2019 Quantitative Biology Consortium Retreat

Posters

2019 Quantitative Biology Consortium Retreat
 2019 Chan-Zuckerberg Biohub Confab
 2019 Next Generation Genomics
 2018 Quantitative Biology Consortium Retreat

Industry Experience

2020	Google Health Genomics, research intern
2016	United States Medical Affairs @ Genentech, intern

Appointments

2020	Weizmann Institute - Rehovot, Israel (Hosts: Ido Amit & Nir Yosef)
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Professional Activities

2020-2021	UC Berkeley Computational Biology Skills Seminar, coordinator
2019	UC Berkeley Computational Biology Skills Seminar, participant
2018-2019	Northern California Computational Biology Student Symposium, coordinator
2019	UCSF Integrative Program in Quantitative Biology (IPQB) Bootcamp, coordinator
2018	UCSF Integrative Program in Quantitative Biology (IPQB) Bootcamp, Bioinformatics Module Leader

Supervision

2021-2022	Kevin An, Undergraduate	UC Berkeley
2021-2022	Ivan Kristanto, Undergraduate	UC Berkeley
2020-2022	Sohit Miglani, Junior Specialist	UC San Francisco
2019-2022	Richard Zhang, Research Engineer	UC Berkeley
2020-2021	Khalil Ouardini, MSc Student	ENS Cachan, MVA
2019-2021	Yanay Rosen, Undergraduate	UC Berkeley
2019-2021	Robert Wang, Undergraduate	UC Berkeley

Software

Cassiopeia	Analysis tools for single-cell lineage tracing data.
VISION	Functional annotation of scRNA-seq data.
SELAM	Simulation framework for large-scale population admixture.

References

Available on request.