Matthew G. Jones

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Education

[†] *Indicates expected*

2017–2021 [†] Ph.D., Bioinformatics, University of California, San Francisco

Thesis Title: Computational tools for single-cell lineage tracing & applications to cancer biology

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

Preprints

(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. *BioRxiv*. 2021.

Journal Articles

(1) 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* (In press). 2021.

(2) 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

(3) **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

(4) Newberry RW, ..., **Jones MG**, ..., DeGrado WF, Kampmann M. Robust Sequence Determinants of α-Synuclein Toxicity in Yeast Implicate Membrane Binding. *ACS Chem. Biol.*. 2020

(5) DeTomaso D*, **Jones MG***, Subramaniam M, Ashuach T, Ye JC, Yosef N. Functional Interpretation of Single-Cell Similarity Maps. *Nature Communications*. 2019

(6) 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

(7) Corbett-Detig, R. and **Jones, M**. SELAM: Simulation of Epistasis and Local adaptation during Admixture with Mate choice. *Bioinformatics*. 2016

* denotes equal contribution

Teaching Assistant

2020	CS176: Algorithms for Computational Biology	University of California, Berkeley
2020	BP205B: Dynamical Systems Modeling	University of California, San Francisco
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Funding, Awards & Honors

2019-2021	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

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   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)

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

2020-2019	Khalil Ouardini, MSc Student	ENS Cachan, MVA
2019-2021	Yanay Rosen, Undergraduate	UC Berkeley
2019-2021	Richard Zhang, Research Engineer	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.