

Christopher S. McGinnis, PhD

BIOMEDICAL INNOVATIONS BUILDING, 240 PASTEUR DR • STANFORD UNIVERSITY
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EDUCATION (School, Program, City, Date)

UC San Francisco	PhD	San Francisco, CA	Sep 2016—2021
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- Tetrad Graduate Program, focus in Biochemistry and Molecular Biology
- Dissertation: “Improving single-cell genomics scalability and data interpretability for applications in single-cell chemical transcriptomics.” Advised by Drs. Zev Gartner, Michael Keiser, and Max Krummel.

Wesleyan University	BA	Middletown, CT	Sep 2010—May 2014
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- Majors: Biology, Science in Society Program (SISP), Molecular Biology & Biochemistry (MB&B)
- GPA: 3.75/4.0, Dean's list: Spring (2012, 2013, 2014), Fall (2013)
- SISP Capstone: “Drugs, Diagnostics, and Databases: How the pharmaceutical industry influences personalized medicine.” Advised by Dr. Anna Geltzer.

RESEARCH (Position, Lab, Institution, Date)

1. Postdoctoral Scholar	Ansu Satpathy Lab	Stanford University	Nov 2021—Present
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- Focus: Cancer immunology, single-cell genomics, metastasis

2. Postdoctoral Scholar	Zev Gartner Lab	UCSF	Sep 2021—Oct 2021
PhD Candidate			Sep 2017—2021

- Focus: Single-cell genomics technology development, high-throughput single-cell chemical transcriptomics

3. Research Associate	Leroy Hood Lab	Institute for Systems Biology	July 2014—May 2016
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- Focus: Single-cell analysis of cardiomyocyte differentiation, single-cell genomics technology development

4. Research Assistant	Anne Burke Lab	Wesleyan University	Jan 2011—May 2013
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- Focus: Evolutionary developmental biology, embryology, laboratory organization/basics

5. Research Assistant	Andrew Arnold Lab	UCONN Medical School	May—Aug 2013
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- Focus: Parathyroid cancer, laser capture microdissection

TEACHING (Title, Institution, Course, Date)

1. Biochemistry Instructor	UCSF	Biochemistry	Summers 2017—2019
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- Course was designed to prepare UCSF post-baccalaureate students to take the MCAT biochemistry section.
- Responsibilities included lesson prep for 2-3 weekly two-hour classes, writing/grading quizzes, and holding weekly office hours for one-on-one meetings with students.

2. Teaching Assistant	UCSF	Macromolecules (BIOCHEM 200A)	Sep—Dec 2017
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3. Teaching Assistant	Wesleyan University	Genetics & Genomics (BIOL 210) Principles of Biology (BIOL 181)	Sept 2012—May 2014
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PUBLICATIONS (in press)

1. Zwick RK, Kasperek P*, Palikuqi B*, Viragova S*, Weichselbaum L*, **McGinnis CS***, et al. "Epithelial zonation along the mouse and human small intestine defines five discrete metabolic domains." *Nature Cell Biology* (2023). *In press*.
2. Murrow LM, Weber RJ, Caruso JA, **McGinnis CS**, et al. "Mapping hormone-regulated cell-cell interaction networks in the human breast at single-cell resolution." *Cell Systems*. 13(9):1-21. 2022.
3. Su-Feher L*, Rubin AN*, [...], **McGinnis CS**, et al. "Single cell enhancer activity distinguishes GABAergic and cholinergic lineages in embryonic mouse basal ganglia." *PNAS*. 119(15):e2108760119. 2022.
4. Yang D*, Jones MG*, [...], **McGinnis CS**, et al. "Lineage tracing reveals the phylogenetics, plasticity, and paths of tumor evolution." *Cell*. 85(11):1905-1923.e25. 2022.
5. Thibodeau A*, Eroglu A*, **McGinnis CS**, et al. "AMULET: A novel read count-based method for effective multiplet detection from single nucleus ATAC-seq data." *Genome Biology*, 22:252. 2021.
6. Popova G, [...], **McGinnis CS**, et al. "Human microglia states are conserved across experimental models and regulate neural stem cell responses in chimeric organoids." *Cell Stem Cell*, 28(12):2153-2166.e6. 2021.
7. **McGinnis CS**, et al. "No detectable alloreactive transcriptional responses under standard sample preparation conditions during donor-multiplexed single-cell RNA sequencing of peripheral blood mononuclear cells." *BMC Biology*, 19(1):10. 2021.
8. Hu KH, Eichorst JP, **McGinnis CS**, et al. "ZipSeq: Barcoding for real-time mapping of single cell transcriptomes." *Nature Methods*, 17(8):833-43. 2020.
9. **McGinnis CS***, Patterson DP*, et al. "MULTI-seq: Scalable sample multiplexing for single-cell RNA sequencing using lipid tagged indices." *Nature Methods*, 16(7):619-26. 2019.
10. **McGinnis CS**, Murrow LM, Gartner ZJ. "DoubletFinder: Doublet detection in single-cell RNA sequencing data using artificial nearest neighbors." *Cell Systems*, 8(4):329-337.e4. 2019.
11. Bargaje R*, Trachana K*, Shelton M, **McGinnis CS**, et al. "Cell population structure prior to bifurcation predicts efficiency of directed differentiation in human induced pluripotent cells." *PNAS*, 114(9):2271-6. 2017.

PUBLICATIONS (in review/preparation)

1. **McGinnis CS**, Miao Z, Reticker-Flynn NE, Winker J, Satpathy AT. "The temporal progression of immune remodeling during metastasis." *bioRxiv*: [bioRxiv: biorxiv.org/content/10.1101/2023.05.04.539153](https://doi.org/10.1101/2023.05.04.539153)v1. 2023. *In review*.
2. Jiang J*, Chen S*, Tsou T, **McGinnis CS**, et al. "D-SPIN constructs gene regulatory network models from multiplexed scRNA-seq data revealing organizing principles of cellular perturbation response." *bioRxiv*: [bioRxiv: biorxiv.org/content/10.1101/2023.04.19.537364](https://doi.org/10.1101/2023.04.19.537364)v1. 2023. *In review*.
3. Winkler J, Tan W, Diadhiou CMM, **McGinnis CS**, et al. "Dissecting the contributions of tumor heterogeneity on metastasis at single-cell resolution." *bioRxiv*: [bioRxiv: biorxiv.org/content/10.1101/2022.08.04.502697](https://doi.org/10.1101/2022.08.04.502697)v1. 2022. *In review*.
5. Hyucke TR, [...], **McGinnis CS**, et al. "Patterning and folding of intestinal villi by active mesenchymal dewetting." *bioRxiv*: [bioRxiv: biorxiv.org/content/10.1101/2023.06.25.546328](https://doi.org/10.1101/2023.06.25.546328)v1. 2023. *In review*.
6. Conrad DN*, **McGinnis CS***, Chow ED, Gartner ZJ. "MULTI-ATAC-seq: Scalable sample multiplexing for single-nucleus ATAC sequencing using lipid tagged indices." 2023. *In preparation*.

INVITED ORAL PRESENTATIONS (Host, City, Date)

1. Medical University of Vienna Cancer Research Seminar Series	Vienna, Austria	Sep 2023
2. Keystone Symposium: Metastasis	Vancouver, BC	May 2023
3. Wesleyan University Biochemistry Seminar Series	Middletown, CT	Oct 2022
4. Cold Spring Harbor Laboratory Conference: Systems Immunology	Virtual	Apr 2021
5. Bay Area RNA Club Annual Meeting	San Francisco, CA	Dec 2020
6. Illumina Single-Cell Sequencing Virtual Symposium – Bay Area	Virtual	Oct 2020
7. Brotman Baty Institute Single-Cell Symposium	Seattle, WA	June 2019
8. Keystone Symposium: Single Cell Biology	Breckenridge, CO	Jan 2019
9. Bay Area RNA Club Annual Meeting	San Francisco, CA	Dec 2018

SELECT POSTER PRESENTATIONS (Host, City, Date)

1. Stanford University Pathology Retreat (won best poster award)	Palo Alto, CA	Oct 2022
2. Cancer Immunotherapy Conference (CICON) 2022	New York, NY	Sep 2022
3. Keystone Single Cell eSymposia	Virtual	March 2020
4. Algorithms and Models for Single-Cell Genomics Workshop	Irvine, CA	June 2019

PEER REVIEW

Served as peer reviewer on topics including bioinformatics, single-cell genomics biotechnology development, and cancer immunology for the following journals: *Nature Methods*, *Nature Genetics*, *Nature Communications*, *Genome Biology*, *F1000 Research Bioinformatics*, *Communications Biology*, and *BMJ Open Respiratory Research*.

MENTORSHIP

1. **Winnie Yao** (Life science research professional, Ansu Satpathy Lab, Stanford) Apr 2023—current
 - Project: Implementing an *ex vivo* culturing platform for PyMT lung tissue fragments.
2. **Zhuang (Max) Miao** (PhD student, Ansu Satpathy Lab, Stanford) Jan 2022—current
 - Project: Interrogating the regulatory machinery of CD8 T cell exhaustion using pooled CRISPR screens and single-cell genomics.
3. **Gabby Rabadam** (BioE rotation student; current: Zev Gartner Lab, UCSF) May 2020—Aug 2020
 - Project: Exploring the utility of non-negative matrix factorization and RNA velocity analyses for inferring intercellular communication in scRNA-seq data.
4. **Dan Foyt** (BioE rotation student; current: Bo Huang Lab, UCSF) Sep 2019—Dec 2019
 - Project: Integrating MULTI-seq and PDMS microarrays for single-cell spatial transcriptomics.
5. **Danny Conrad** (Tetrad rotation student; current: Zev Gartner Lab, UCSF) Feb 2018—May 2018
 - Project: Optimizing MULTI-seq for single-nucleus transcriptomics.

FUNDING/AWARDS (Individual)

1. **Parker Institute for Cancer Immunotherapy Scholar Award**. 2023-2025. Funds: \$210,627.
Project Title: Interrogating Immunomodulation for Anti-Metastatic Therapy.
2. **Cancer Research Institute Irvington Postdoctoral Fellowship Award**. 2022-2025. Funds: \$186,000.
Project Title: Interrogating Immunomodulation for Anti-Metastatic Therapy.
3. **NCI Ruth L. Kirschstein NRSA for Individual Predoctoral Fellows (F31) Award**, 2021-2023. Funds: \$36,252.
Project Title: Interrogating Immunomodulation for Anti-Metastatic Therapy. Impact Score: 25; Percentile: 13+.
4. **Harold M. Weintraub Graduate Student Award** (nominated), 2021.
5. **ARCS Foundation Scholar**, 2019-2020. Funds: \$17,417.
Project Title: Combating Hirschsprung's Disease with Highly Multiplexed Single-Cell Transcriptomics.
6. **NSF GRFP** (honorable mention), 2016.
Project Title: Using single-cell transcriptomics and light-responsive synthetic circuits to study cancer chemoresistance.
7. **UCSF Matilda Edlund Scholarship (finalist)**, 2016.

FUNDING/AWARDS (Co-writer)

1. **Society for Laboratory Automation and Screening Innovation Award**, 2021. Funds: \$10,000.
Project Title: Defining the Breadth and Specificity of Drug Response in Heterogeneous Immune Cell Populations.
2. **NCI R33**, 2021-2024. Funds: \$295,794 ADC.
Project Title: Universal Sample Multiplexing for Single Cell Analysis.
3. **NIH/NIGMS R01**, 2019-2023. Funds: \$197,500 ADC.
Project Title: Multiplexing massively parallel single cell transcriptional analysis across time, space, and conditions.
4. **Mary Anne Koda-Kimble Seed Award for Innovation**, 2019. Funds: \$27,000.
Project Title: Next-Generation Drug Screening with Highly Multiplexed Single-Cell RNA Sequencing.
5. **UCSF Catalyst Award**, 2019. Funds: \$25,000.
Project Title: Next-Generation Drug Screening with Highly Multiplexed Single-Cell RNA Sequencing.

PATENTS

1. **PCT/US2019/040898**; Lipid-modified oligonucleotides and methods of using the same. **(co-inventor)**

REFERENCES

Zev Gartner, PhD UC San Francisco zev.gartner@ucsf.edu	Ansu Satpathy, MD, PhD Stanford University satpathy@stanford.edu	Matt Thomson, PhD Caltech mthomson@caltech.edu	Eric Chow, PhD UC San Francisco eric.chow@ucsf.edu	Nadia Roan, PhD Gladstone Institutes nadia.roan@gladstone.ucsf.edu
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