

CALEB LAREAU

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INTRODUCTION

I am a scientist with expertise in single-cell genomics, immunotherapy, and computational biology. My laboratory synthesizes massive-scale computational and experimental genomics methods to study how immune cells in our bodies adapt, expand, differentiate, and evolve over an individual's lifetime from mutations and exposures to pathogens. We seek to extrapolate these insights into safer and more efficacious treatments for cancer and other complex diseases.

CURRENT APPOINTMENT

Assistant Member, Program in Computational and Systems Biology 2023 - Present
Memorial Sloan Kettering Cancer Center (New York, NY)

EDUCATION AND TRAINING

Postdoctoral Fellowship, Departments of Pathology and Genetics 2023
Stanford University (Palo Alto, CA)

Doctor of Philosophy, Biological and Biomedical Sciences 2020
Harvard University (Cambridge, MA)

Master of Arts, Biostatistics 2017
Harvard University (Cambridge, MA)

Bachelor of Science, *summa cum laude*, Biochemistry and Mathematics 2015
University of Tulsa (Tulsa, OK)

AWARDS AND HONORS

Society for Immunotherapy of Cancer - Sparkathon Young Investigator Award 2023

Memorial Sloan Kettering Emerging Leader in Computational Oncology 2023

Gladstone Institutes Distinguished Achievement in Science Award (Genomic Immunology) 2023

National Human Genome Research Institute - Pathway to Independence Award (K99/R00) 2022

STAT Wunderkind 2022

Forbes 30 Under 30 - Science 2022

Parker Institute for Cancer Immunotherapy - Parker Scholar 2021

Broad Institute Next Generation in Biomedicine 2021

10x Genomics Featured Scientist in Innovator Series 2021

Stanford Science Fellowship 2020

Deutsche Forschungsgemeinschaft Mercator Fellowship 2020

Ruth L. Kirschstein National Research Service Award Individual Predoctoral Fellowship (F31) 2018

Harvard University Certificate of Distinction in Teaching 2017

National Science Foundation Graduate Research Fellowship (NSF-GRFP) 2015

Phi Kappa Phi Walter and Adelheid Hohenstein Fellow 2015

Pi Kappa Alpha Robertson Most Outstanding Undergraduate Student 2014

Jess Choteau Outstanding Senior 2014

Deutscher Akademischer Austauschdienst RISE Scholar 2013, 2014

Barry M. Goldwater Scholar 2013

University of Tulsa Presidential Scholar 2011

Oklahoma Medical Research Foundation Sir Alexander Fleming Scholar 2011

PUBLICATIONS

* Denotes equal contributions; ‡ Denotes corresponding author(s)

CORRESPONDING AUTHOR

1. **C.A. Lareau**[‡], *et al.* (2023) Latent human herpesvirus 6 is reactivated in CAR T cells. *Nature*. DOI: 10.1038/s41586-023-06704-2.
2. **C.A. Lareau**[‡], *et al.* (2023) Single-cell multi-omics reveals dynamics of purifying selection of pathogenic mitochondrial DNA across human immune cells. *Nature Genetics*. DOI: 10.1038/s41588-023-01433-8.
3. **C.A. Lareau**[‡], *et al.* (2023) Mitochondrial single cell ATAC-seq for high-throughput multi-omic detection of mitochondrial genotypes and chromatin accessibility. *Nature Protocols*. DOI: 10.1038/s41596-022-00795-3.
4. **C.A. Lareau**[‡], K.R. Parker[‡], A.T. Satpathy[‡]. (2021) Charting the tumor antigen maps drawn by single-cell genomics. *Cancer Cell*. DOI: 10.1016/j.ccell.2021.11.005.
5. **C.A. Lareau**^{*‡}, L.S. Ludwig^{*‡}, C. Muus, *et al.* (2021) Massively parallel single-cell mitochondrial DNA genotyping and chromatin profiling. *Nature Biotechnology*. DOI: 10.1038/s41587-020-0645-6.
6. **C.A. Lareau**[‡], S. Ma, F.M. Duarte, J.D. Buenrostro[‡]. (2020) Inference and effects of barcode multiplets in droplet-based single-cell assays. *Nature Communications*. DOI: 10.1038/s41467-020-14667-5.

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7. L.S. Ludwig^{*}, **C.A. Lareau**^{*}, *et al.* (2022) A Congenital Anemia Dissociates the Pleiotropic Functions of Master Transcription Factor GATA1. *Blood*. DOI: 10.1182/blood.2021013753.
8. J. Wang^{*}, **C.A. Lareau**^{*}, *et al.* (2021) Single-Cell Multiomics Defines Tolerogenic Extrathymic Aire-Expressing Populations with Unique Homology to Thymic Epithelium. *Science Immunology*. DOI: 10.1126/sciimmunol.abl5053.
9. E. Mimitou^{*}, **C.A. Lareau**^{*}, K.Y. Chen^{*} *et al.* (2021) Scalable, multimodal profiling of chromatin accessibility, RNA, and protein levels in single cells. *Nature Biotechnology*. DOI: 10.1038/s41587-021-00927-2
10. N. Schmidt^{*}, **C.A. Lareau**^{*}, H. Keshishian^{*} *et al.* (2021) A direct RNA-protein interaction atlas of the SARS-CoV-2 RNA in infected human cells. *Nature Microbiology*. DOI: 10.1101/2020.07.15.204404.
11. M. A. Walker^{*}, **C.A. Lareau**^{*}, L.S. Ludwig^{*}, *et al.* (2020) Purifying Selection against Pathogenic Mitochondrial DNA in Human T cells. *New England Journal of Medicine*. DOI: 10.1056/NEJMoa2001265.
12. D. Vuckovic^{*}, E. Bao^{*}, P. Akbari^{*}, **C.A. Lareau**^{*}, *et al.* (2020) The Polygenic and Monogenic Basis of Blood Traits and Diseases. *Cell*. DOI: 10.1101/2020.02.02.20020065.
13. **C.A. Lareau**^{*}, F.M. Duarte^{*}, J.G. Chew^{*}, *et al.* (2019) Droplet-based combinatorial indexing for massive-scale single-cell chromatin accessibility. *Nature Biotechnology*. DOI: 10.1038/s41587-019-0147-6.
14. L.S. Ludwig^{*}, **C.A. Lareau**^{*}, J.C. Ulirsch^{*}, *et al.* (2019) Lineage tracing in humans enabled by mitochondrial mutations and single cell genomics. *Cell*. DOI: 10.1016/j.cell.2019.01.022.
15. **C.A. Lareau**, L.S. Ludwig, V.G. Sankaran. (2019) Longitudinal assessment of clonal mosaicism in human hematopoiesis via mitochondrial mutation tracking. *Blood Advances*. DOI: 10.1182/bloodadvances.2019001196.
16. J.C. Ulirsch^{*}, **C.A. Lareau**^{*}, E.L. Bao^{*}, *et al.* (2019) Interrogation of human hematopoiesis at single-cell and single-variant resolution. *Nature Genetics*. DOI: 10.1038/s41588-019-0362-6.
17. E.L. Bao^{*}, **C.A. Lareau**^{*}, C. Brugnara, I.R. Fulcher, *et al.* (2019) Heritability of fetal hemoglobin, white cell count, and other clinical traits from a sickle cell disease family cohort. *American Journal of Hematology*. DOI: 10.1002/ajh.25421.

18. L.S. Ludwig,* **C.A. Lareau,* et al.** (2019) Transcriptional States and Chromatin Accessibility Underlying Human Erythropoiesis. *Cell Reports*. DOI: 10.1016/j.celrep.2019.05.046.
19. **C.A. Lareau,* K. Clement,* J.Y. Hsu,* et al.** (2018) Response to "Unexpected mutations after CRISPR-Cas9 editing *in vivo*." *Nature Methods*. DOI: 10.1038/nmeth.4541.
20. **C.A. Lareau** and M.J. Aryee. (2018) hichipper: A preprocessing pipeline for assessing library quality and DNA loops from HiChIP data. *Nature Methods*. DOI: 10.1038/nmeth.4583.
21. **C.A. Lareau, C.F. DeWeese et al.** (2017) Polygenic risk assessment reveals pleiotropy between sarcoidosis and inflammatory disorders in the context of genetic ancestry. *Genes and Immunity*. DOI: 10.1038/gene.2017.3
22. **C.A. Lareau** and M.J. Aryee. (2017) diffloop: a novel computational framework for identifying and functionalizing differential topological features in DNA. *Bioinformatics*. DOI: 10.1093/bioinformatics/btx623.
23. **C.A. Lareau, B.C. White, et al.** (2016) An interaction quantitative trait loci tool implicates epistatic functional variants in an apoptosis pathway in smallpox vaccine eQTL data. *Genes and Immunity*. DOI: 10.1038/gene.2016.15.
24. **C.A. Lareau, B.C. White, C.G. Montgomery, and B.A. McKinney.** (2015) Common Variants Modulate Differential Correlation Structures in Gene Expression Data. *Frontiers in Genetics*. DOI: 10.3389/fgene.2015.00312.
25. **C.A. Lareau, I.A. Adrianto, et al.** (2015) Fine mapping of Chromosome 15q25 in Sarcoidosis Implicates Zinc Finger Protein 592 in Patients with Neurological Involvement. *Annals of Translational and Clinical Neurology*. DOI: 10.1002/acn3.229.
26. **C.A. Lareau, B.C. White, A.L. Oberg, and B.A. McKinney.** (2015) Differential co-expression network centrality and machine learning feature selection for identifying susceptibility hubs in networks with scale-free structure. *BioData Mining*, DOI: 10.1186/s13040-015-0040-x.
27. N.A. Davis,* **C.A. Lareau,* et al.** (2013) Encore: Genetic association interaction network centrality pipeline and application to SLE exome data. *Genetic Epidemiology*. DOI: 10.1002/gepi.21739.

INVITED COMMENTARY

28. **C.A. Lareau[‡]**. (2023). Resolving subtle cell states in sparse single-cell data. *Nature Biotechnology* DOI: 10.1038/s41587-023-01797-6.
29. **C.A. Lareau[‡]**, C. Romagnani, L. Ludwig. (2022) Lineage tracing, hematopoietic stem cell and immune cell dynamics. *Frontiers in Immunology* DOI: 10.3389/fimmu.2022.1062415.
30. **C.A. Lareau** and A.T. Satpathy. (2020) An old BATF's new T-ricks. *Nature Immunology*. DOI: 10.1038/s41590-020-0796-0.

BOOK CHAPTERS

31. E.P. Mimitou[‡], P. Smibert[‡], and **C.A. Lareau[‡]** (2022) Massively parallel profiling of accessible chromatin and proteins with ASAP-seq. *Methods in Molecular Biology - Chromatin Accessibility: Methods and Protocols*. DOI: 10.1007/978-1-0716-2899-7_13.
32. L.S. Ludwig and **C.A. Lareau[‡]** (2022) Concomitant sequencing of accessible chromatin and mitochondrial genomes in single cells using mtscATAC-seq. *Methods in Molecular Biology - Chromatin Accessibility: Methods and Protocols*. DOI: 10.1007/978-1-0716-2899-7_14.
33. **C.A. Lareau, et al.** (2019) Preprocessing and computational analysis of single-cell epigenomic datasets. *Methods in Molecular Biology - Computational Methods for Single-Cell Data Analysis*. DOI: 10.1007/978-1-4939-9057-3.

34. **C.A. Lareau** and B.A. McKinney. (2015) Network Theory for Data-Driven Epistasis Networks. *Methods in Molecular Biology– Epistasis: Methods and Protocols*, DOI: 10.1007/978-1-4939-2155-3.

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35. N Schmidt, S. Ganskih, Y. Wei, A. Gabel, S. Zielinski, H. Keshishian, **C.A. Lareau**, *et al.* (2023). The host protein SND1 binds SARS-CoV-2 negative-sense RNA and promotes nascent viral RNA synthesis. *Cell*. DOI: 10.1016/j.cell.2023.09.002
36. A.M Tousley, M.C. Rotiroti, L Labanieh, L.W. Rysavy, W. Kim, **C.A. Lareau**, *et al.* (2023). Co-opting T cell proximal signaling molecules enables Boolean logic-gated CAR T cell control. *Nature*. DOI: 10.1038/s41586-023-05778-2.
37. R. Fonseca, T. Burn, L. Gandolfo, S. Devi, S. Park, A. Obers, M Evrard, S. N. Christo, F. A. Buquicchio, **C.A. Lareau**, *et al.* (2022). Runx3 drives a tissue residency program that is absent in CD4+ T cells. *Nature Immunology*. DOI: 10.1038/s41590-022-01273-4.
38. T. Ruckert, **C.A. Lareau**, *et al.* (2022) Clonal expansion and epigenetic inheritance of long-lasting NK cell memory. *Nature Immunology*. DOI: 10.1038/s41590-022-01327-7.
39. T. Miller, **C.A. Lareau**, *et al.* (2022) Mitochondrial variant enrichment from high-throughput single-cell RNA-seq resolves clonal populations. *Nature Biotechnology*. DOI: 10.1101/2021.03.08.434450v1.
40. L. Penter, E. ten Hacken, J. Southard, **C.A. Lareau**, *et al.* (2022) Mitochondrial DNA mutations as natural barcodes for lineage tracing of murine tumor models. *Cancer Research*. DOI: 10.1158/0008-5472.CAN-22-0275.
41. J. Rosenberg, J. Peters, T. Hughes, **C.A. Lareau** *et al.* (2022) JAK-inhibition in a patient with a STAT1 gain-of-function variant reveals dysregulation as a common feature of aplastic anemia. *Med*. DOI: 10.1016/j.medj.2021.12.003.
42. S. Bucktrout, N. Banovich, L. Butterfield, C. Cimen-Bozkus, J. Giles, Z. Good, D. Goodman, V. Jonsson, **C.A. Lareau**, *et al.* (2022) Advancing T cell-based cancer therapy with single-cell technologies. *Nature Medicine*. DOI: 10.1038/s41591-022-01986-x.
43. V.K. Kartha, F.M. Duarte, Y. Hu, S. Ma, J.G. Chew, **C.A. Lareau**, *et al.* (2022) Functional Inference of Gene Regulation using Single-Cell Multi-Omics. *Cell Genomics*. DOI: 10.1016/j.xgen.2022.100166.
44. R. Kedmi, T. Najar, K. Mesa, A. Grayson, L. Kroehling, Y. Hao, S. Hao, M. Pokrovskii, M. Xu, J. Talbot, J. Wang, J. Germino, **C.A. Lareau**, *et al.* (2022). Microbiota-instructed regulatory T cell differentiation is mediated by a distinct ROR γ t+ antigen presenting cell subset. *Nature*. DOI: 10.1038/s41586-022-05089-y.
45. E. Panditharatna, J. Marques, T. Wang, M. Trissal, I. Liu, L. Jiang, A. Beck, A. Groves, N. Dharia, D. Li, S. Hoffman, G. Kugener, M. Shaw, H. Mire, O. Hack, J. Dempster, **C.A. Lareau**, *et al.* (2022) BAF complex maintains glioma stem cells in pediatric H3K27M-glioma. *Cancer Discovery*. DOI: 10.1158/2159-8290.CD-21-1491.
46. T. Zhao, Z Chiang, J. Morriss, L. LaFave, E.M. Murray, I. Del Priore, K. Meli, **C.A. Lareau** *et al.* (2022). Spatial genomics enables multi-modal study of clonal heterogeneity in tissues. *Nature*. DOI: 10.1038/s41586-021-04217-4.
47. R. Ajore, A. Niroula, M. Pertesi, C. Cafaro, M. Thodberg, M. Went, E. Bao, L. Duran-Lozano, A. de Lapuente Portilla, T. Olafsdottir, N. Ugidos-Damboriena, O. Magnusson, M. Samur, **C.A. Lareau**, *et al.* (2022) Functional dissection of inherited non-coding variation influencing multiple myeloma risk. *Nature Communications*. DOI: 10.1038/s41467-021-27666.
48. T. Stuart, A. Srivastava, S. Madad, **C.A. Lareau**, R. Satija. (2021) Multimodal single-cell chromatin analysis with Signac. *Nature Methods*. DOI: 10.1101/2020.11.09.373613.
49. E. Fiskin, **C.A. Lareau**, *et al.* (2021) Single-cell multimodal profiling of proteins and chromatin accessibility using PHAGE-ATAC. *Nature Biotechnology*. DOI: 10.1038/s41587-021-01065-5.

50. H. King, K. Wells, Z. Shipony, A. Kathiria, L. Wager, **C.A. Lareau**, *et al.* (2021) Integrated single-cell transcriptomics and epigenomics reveals strong germinal center-associated etiology of autoimmune risk loci. *Science Immunology*. DOI: 10.1126/sciimmunol.abh3768.
51. L. Penter, S. Gohil, **C.A. Lareau**, *et al.* (2021) Longitudinal single-cell dynamics of chromatin accessibility and mitochondrial mutations in chronic lymphocytic leukemia mirror disease history. *Cancer Discovery*. DOI: 10.1158/2159-8290.CD-21-0276.
52. R. Kawakami, Y. Kitagawa, K. Chen, M. Arai, D. Ohara, Y. Nakamura, K. Yasuda, M. Osaki, N. Mikami, **C.A. Lareau**, *et al.* (2021) Distinct Foxp3 enhancer elements coordinate development, maintenance, and function of regulatory T cells. *Immunity*. DOI: 10.1016/j.immuni.2021.04.005
53. B. Adane, G. Alexe, B Seong, D. Lu, E. Hwang, D. Hsinz, **C.A. Lareau**, *et al.* (2021) STAG2 Loss Rewires Oncogenic and Developmental Programs to Promote Metastasis in Ewing Sarcoma. *Cancer Cell*. DOI: 10.1016/j.ccell.2021.05.007
54. S. Ma, B. Zhang, L. LaFave, Z. Chiang, Y. Hu, J. Ding, A. Brack, V. Kartha, T. Law, **C.A. Lareau**, *et al.* (2020) Chromatin potential identified by shared single cell profiling of RNA and chromatin. *Cell*. DOI: 10.1016/j.cell.2020.09.056.
55. E. Bao, S. Nandakumar, X. Liao, A. Bick, J. Karjalainen, M. Tabaka, O.I. Gan, A. Havulinna, T. Kiiskinen, **C.A. Lareau**, *et al.* (2020) Genetic predisposition to myeloproliferative neoplasms implicates hematopoietic stem cell biology. *Nature*. DOI: 10.1038/s41586-020-2786-7.
56. M. Chen, L. Raffield, A. Mousas, S. Sakaue, J. Huffman, T. Jiang, P. Akbari, D. Vuckovic, E. Bao, A. Moscati, X. Zhong, R. Manansala, V. Laplante, M. Chen, K. Lo, H Qian, **C.A. Lareau**, *et al.* (2020) Trans-ethnic and ancestry-specific blood-cell genetics in 746,667 individuals from 5 global populations. *Cell*. DOI: 10.1016/j.cell.2020.06.045.
57. S. Johnstone, A. Reyes, Y. Qi, E. Hegazi, K. Pelka, J. Chen, L. Zou, Y. Drier, V. Hecht, N. Shores, **C.A. Lareau**, *et al.* (2020) A topological atlas reveals layers of genome reorganization in colorectal cancer. *Cell*. DOI: 10.1016/j.cell.2020.07.030.
58. L. Garman, R. Pelikan, A. Rasmussen, **C.A. Lareau**, *et al.* (2020) Single cell transcriptomics implicate novel T cell and monocyte immune dysregulation in sarcoidosis. *Frontiers in Immunology*. DOI: 10.3389/fimmu.2020.567342.
59. J. Grünwald, R. Zhao, **C.A. Lareau**, *et al.* (2020) A dual-deaminase CRISPR base editor enables concurrent adenine and cytosine editing. *Nature Biotechnology*. DOI: 10.1038/s41587-020-0535-y.
60. L.M. LaFave, V.K. Kartha, S. Ma, K. Meli, I. Del Priore, **C.A. Lareau**, *et al.* (2020) Epigenetic state transitions characterize tumor progression in lung adenocarcinoma. *Cancer Cell*. DOI: 10.1016/j.ccell.2020.06.006.
61. A.L. Basak, M. Munschauer, **C.A. Lareau**, *et al.* (2020) Control of human hemoglobin switching by LIN28B-mediated regulation of BCL11A translation. *Nature Genetics*. DOI: 10.1038/s41588-019-0568-7.
62. J. Ray, C. de Boer, C. Fulco, **C.A. Lareau**, *et al.* (2020) Prioritizing disease and trait causal variants at the TNFAIP3 locus using functional and genomic features. *Nature Communications*. DOI: 10.1038/s41467-020-15022-4.
63. ImmGen Consortium, 149 authors including **C.A. Lareau**. (2020) ImmGen at 15. *Nature Immunology*. DOI: 10.1038/s41590-020-0687-4.
64. H. Yoshida, **C.A. Lareau**, R.N. Ramirez, S.A. Rose, *et al.* (2019) The cis-regulatory atlas of the mouse immune system. *Cell*. DOI: 10.1016/j.cell.2018.12.036.
65. J. Grünwald, R. Zhao, S. Garcia,* S. Iyer,* **C.A. Lareau**,* *et al.* (2019) Transcriptome-wide off-target RNA editing induced by CRISPR-guided DNA base editors. *Nature*. DOI: 10.1038/s41586-019-1161-z.
66. H. Chen, **C.A. Lareau**, T. Andreani, *et al.* (2019) Assessment of computational methods for the analysis of single-cell ATAC-seq data. *Genome Biology*. DOI: 10.1186/s13059-019-1854-5.

67. H. Chen, L. Albergante, J.Y. Hsu, **C.A. Lareau**, *et al.* (2019) STREAM: Single-cell Trajectories Reconstruction, Exploration And Mapping of omics data. *Nature Communications*. DOI: 10.1038/s41467-019-09670-4.
68. J. Grünewald, R. Zhao, S. Iyer,* **C.A. Lareau**,* S. Garcia,* *et al.* (2019) CRISPR adenine and cytosine base editors with reduced RNA off-target activities. *Nature Biotechnology*. DOI: 10.1038/s41587-019-0236-6.
69. C. Fulco, J. Nasser, T. Jones, G. Munson, D. Bergman, V. Subramanian, S. Grossman, R. Anyoha, B. Doughty, T. Patwardhan, T. Nguyen, M. Kane, E. Perez, N. Durand, **C.A. Lareau**, *et al.* (2019) Activity-by-Contact model of enhancer-promoter regulation from thousands of CRISPR perturbations. *Nature Genetics*. DOI: 10.1038/s41588-019-0538-0.
70. S.K. Nandakumar, S.K. McFarland, L.M. Mateyka,* **C.A. Lareau**,* *et al.* (2019) Gene-centric functional dissection of human genetic variation uncovers regulators of hematopoiesis. *eLife*: DOI: 10.7554/eLife.44080.
71. J. Pan, Z. McKenzie, A. D'Avino, N. Mashtalir, **C.A. Lareau**, *et al.* (2019) The ATPase module of mammalian SWI/SNF family complexes mediates subcomplex identity and catalytic activity-independent genomic targeting. *Nature Genetics*. DOI: 10.1038/s41588-019-0363-5.
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73. J.D. Buenrostro, M.R. Corces, **C.A. Lareau**, *et al.* (2018) Integrated Single-Cell Analysis Maps the Continuous Regulatory Landscape of Human Hematopoietic Differentiation. *Cell*. DOI: 10.1016/j.cell.2018.03.074.
74. R.C. Pelikan, J.A. Kelly, Y. Fu, **C.A. Lareau**, *et al.* (2018) Enhancer histone-QTLs are enriched on autoimmune risk haplotypes and influence gene expression. *Nature Communications*, DOI: 10.1038/s41467-018-05328-9.
75. H. Finucane, Y. Reshef, V. Anttila, K. Slowikowski, A. Gusev, A. Byrnes, S. Gazal, P.-R. Loh, **C.A. Lareau**, *et al.* (2018) Heritability enrichment of specifically expressed genes identifies disease-relevant tissues and cell types. *Nature Genetics*. DOI: 10.1038/s41588-018-0081-4.
76. B. Michel, A. D'Avino, S. Cassel, N. Mashtalir, Z. McKenzie, M. McBride, A. Valencia, Q. Zhou, M. Bocker, L. Soares, J. Pan, D. Remillard, **C.A. Lareau**, *et al.* (2018) A non-canonical SWI/SNF complex is a synthetic lethal target in cancers driven by BAF complex perturbation. *Nature Cell Biology*. DOI: 10.1038/s41556-018-0221-1.
77. A.T. Satpathy, N. Saligrama, J.D. Buenrostro, Y. Wei, B. Wu, A.J. Rubin, J.M. Granja, **C.A. Lareau**, *et al.* (2018) Transcript-indexed ATAC-seq reveals paired single-cell T cell receptor identity and chromatin accessibility for precision immune profiling. *Nature Medicine*. DOI: 10.1038/S41591-018-0008-8.
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79. T. Carrillo-Roa, C. Labermier, P. Weber, D.P. Herzog, **C.A. Lareau**, *et al.* (2017) Common Genes Associated With Antidepressant Response In Mouse And Man Identify Key Role Of Glucocorticoid Receptor Sensitivity. *PLoS Biology*. DOI: 10.1371/journal.pbio.2002690.
80. R.J.H. Ryan, J. Petrovic, D.M. Rausch, Y. Zhou, **C.A. Lareau** *et al.* (2017) AB Cell Regulome Links Notch to Downstream Oncogenic Pathways in Small B Cell Lymphomas. *Cell Reports*. DOI: 10.1016/j.celrep.2017.09.066.
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82. B.A. McKinney, **C.A. Lareau**, *et al.* (2016) The Integration of Epistasis Network and Functional Interactions in a GWAS Implicates RXR Pathway Genes in the Immune Response to Smallpox Vaccine. *PLoS One*. DOI: 10.1371/journal.pone.0158016.

PRE-PRINTS

83. **C.A. Lareau**[‡], *et al.* (2023) Codon affinity in mitochondrial DNA shapes evolutionary and somatic fitness. *bioRxiv*. DOI: 10.1101/2023.04.23.537997v1.
84. K. Nuno, A. Azizi, T. Kohnke, **C.A. Lareau**, *et al.* (2023) Convergent Epigenetic Evolution Drives Relapse in Acute Myeloid Leukemia. *bioRxiv*. DOI: 10.1101/2023.10.10.561642.
85. E. Fiskin, G. Eraslan, B. Alora-Palli, J.M. Leyva-Castillo, S. Kim, H. Choe, **C.A. Lareau**, *et al.* (2023) Multi-modal skin atlas associates a multicellular immune-stromal community with altered cornification and T cell expansion in atopic dermatitis. *bioRxiv*. DOI: 10.1101/2023.10.29.563503.
86. IGVF Consortium, including **C.A. Lareau**. (2023) The Impact of Genomic Variation on Function (IGVF) Consortium. *aRxiv*. DOI: 10.48550/arXiv.2307.13708.
87. K. Hiam-Galvez, R. Debarge, **C.A. Lareau**, *et al.* (2022) Transient dendritic cell activation diversifies the T cell response to acute infection. *bioRxiv*. DOI: 10.1101/2021.09.26.461821v1.
88. C. Liu, H. Nagashima, P. Wang, A. Lim, S. Signorella, W. Montgomery, N. Fernando, V. Bass, L. Reich, Z. Tang, O. Harrison, C. Yao, H. Sun, S. Brooks, J. Kan, V. Nagarajan, R. Phillips, Y. Mikami, **C.A. Lareau**, *et al.* (2023) CTCF-mediated topologically associated domains delineates super-enhancer territories and selective cytokine expression at the Mdm1-Il22-Ifng. *Cell Press Sneak Peek*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4271102.

PATENTS

GRANTED

1. **PCT/US2019/036583**; Lineage tracing using mitochondrial genome mutations and single-cell genomics
2. **PCT/US2021/035951**; Methods of detecting mitochondrial disease
3. **PCT/US2021/032702**; Lineage inference from single-cell transcriptomics

PENDING

4. **PPA 63/314,980**; Massively integrated analysis of single cell RNA sequencing data
5. **PPA 63/353,715**; Methods of genetically modifying cells for altered codon-anti-codon interactions
6. **PPA 63/397,515**; Methods of assessing *in vitro* therapeutic T cells for latent and reactivated human herpesvirus 6B
7. **PPA 63/397,519**; Methods of assessing therapeutic T cells for latent and reactivated human herpesvirus 6B

TEACHING EXPERIENCE

Weill Cornell Medicine

Faculty Moderator, Computational Biology and Medicine journal Club

Fall 2023

Stanford University

Course Head; Cell, Gene, and Immune Therapies

Spring 2023

Lecturer; Single-cell Immunogenomics

Spring 2022, 2023

Lecturer; Introduction to Applied Computational Tools in Immunology

Winter 2022, 2023

Harvard University

Teaching Associate; Introduction to Computational Biology and Bioinformatics

Spring 2017, 2020

Teaching Associate; Introduction to Statistical Genetics

Fall 2016, 2017

Cold Spring Harbor Laboratory

Lecturer; Advanced Sequencing Technologies

Fall 2019

University of Tulsa

Teaching Associate; Molecular Modeling
Teaching Associate; Energy Technology for the Future

Spring 2014, 2015
Spring 2013

ACADEMIC SERVICE

SCIENTIFIC MENTORSHIP

Stanford Institutes of Medicine Summer Research Program (2022-2023)
Stanford undergraduate and graduate students in: Genetics, Computer Science, and Immunology research (2020-2023)
MIT undergraduate research (2016-2020)

OUTREACH

Public Journal Club Presenter (2022-2023)
Project SHORT Mentor (2020-2023)
Speaker, Gateway High School and Fremont High School, High School Career Day (2020-2023)
Mentor, Research Science Institute, MIT (2016-2019)
Volunteer computer science instructor, Will Rogers High School, Tulsa, OK (2014-2015)

GUEST EDITOR

Frontiers in Immunology

AD HOC PEER REVIEW - GRANTS

UK Medical Research Council, European Research Council (ERC), Dutch Research Council (NWO), Italian Science Fund, Austrian Science Fund, *National Science Foundation*: Graduate Research Fellowship

AD HOC PEER REVIEW - JOURNALS

Cell, Science, Nature Biotechnology, Nature Genetics, Nature Methods, Nature Communications, Science Advances, Bioinformatics, BMC Biology, BMC Bioinformatics, Nature Protocols, Cancers, Communications Biology, Nucleic Acids Research, The R Journal, BioData Mining, BMC Medical Genomics, BMJ Open, Molecular Cancer Frontiers in Cell and Development Biology, Frontiers in Immunology, Frontiers in Medicine, Life Science Alliance

PROFESSIONAL MEMBERSHIP

Member, Society for Immunotherapy of Cancer
Trainee Member, American Society of Human Genetics; American Association for Cancer Research
Developer, Bioconductor Project
Supporting Member, R and Python Software Foundations

INVITED TALKS AND PRESENTATIONS (2021-)

Gordon Research Conference- Single-cell cancer biology , Hooksett, NH	June 2024
Innovations in Single Cell Omics , Barcelona, Spain	May 2024
PEGS - Antibody and Protein Engineering , Boston, MA	May 2024
2nd Annual Probing Human Disease Using Single-Cell Technologies , Cancun, Mexico	February 2024
Google Deepmind Invited Seminar Series , London, UK	November 2023
Society for Immunotherapy of Cancer , Chicago, IL	September 2023
Human Cell Atlas, General Meeting , Toronto, ON, Canada	July 2023

Memorial Sloan Kettering Institute, Emerging Leader Symposium , New York, NY	May 2023
Dana Farber Cancer Institute, Medical Oncology Seminar Series , Boston, MA	March 2023
Genentech, Distinguished Scientific Speaker Seminar Series , San Francisco, CA	February 2023
UCSF, Microbiology and Immunology Seminar , San Francisco, CA	February 2023
Sloan Kettering Institute, Computational and Systems Biology Seminar , New York, NY	February 2023
Fred Hutchinson Cancer Center, Translational Data Science Center Seminar , Seattle, WA	January 2023
Northwestern University, Biochemistry and Molecular Genetics Seminar , Chicago, IL	January 2023
University of Pennsylvania, Department of Pediatrics Seminar , Philadelphia, PA	January 2023
Massachusetts General Hospital, Department of Pathology Seminar Series , Boston, MA	January 2023
New York University, Department of Pathology Seminar Seminar Series , New York, NY	December 2022
Stanford University EpiBio Seminar Series , Stanford, CA	December 2022
Parker Institute for Cancer Immunotherapy, Winter Meeting , Santa Rosa, CA	November 2022
Stanford Cancer Institute Cell Therapy Seminar Series , Stanford, CA	October 2022
Max Planck Systems Immunology Seminar Series , Wurzburg, Germany	September 2022
Immunotherapy of Cancer Conference, Annual Meeting , Munich, Germany	September 2022
Stanford Center for Human Systems Immunology SAB Meeting , Stanford, CA	September 2022
Stanford Alzheimer's Disease Research Center Seminar Series , Stanford, CA	September 2022
Impact of Genomic Variation on Function Seminar Series , Bethesda, MD	June 2022
Probing Human Disease Using Single-Cell Technologies, Annual Meeting , Cancun, Mexico	May 2022
Parker Institute for Cancer Immunotherapy, Annual Meeting , Sonoma, CA	April 2022
Dana Farber Center for Functional Cancer Epigenetics Seminar Series , Boston, MA	April 2022
Immunai Visiting Scientist Seminar Series , New York, NY	January 2022
Broad Institute Next Generation Faculty Symposium , Cambridge, MA	November 2021
UCSF Single-cell Seminar Series San Francisco, CA	July 2021
10x Genomics Global Cancer Symposium , Pleasanton, CA	April 2021
Max Delbruck Medical Systems Biology Lecture , Berlin, Germany	April 2021
UCSF Diabetes Center Seminar , San Francisco, CA	February 2021