

Dylan Kotliar
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Education

MD	Harvard University and MIT, Health Sciences & Technology <i>Cum Laude</i>	2012-2022
PhD	Harvard University, Systems Biology	2014-2020
BA	Columbia University, Columbia College <i>Summa Cum Laude. Major: Biology, Minor: Economics</i>	2008-2012

Post graduate medical education

Residency - Internal Medicine, Brigham and Women's Hospital 2022-Present

Research experience

Post-doctoral researcher - Advisor: Soumya Raychaudhuri, Harvard University 2021-Present

- Identifying gene expression and TCR profiles of antigen-responsive T-cells
- Building a compendium of T-cell gene expression programs across diseases

Graduate student - Advisor: Pardis Sabeti, Harvard University 2014-2020

- Conducted GWAS of susceptibility to Lassa Fever and Ebola virus disease
- Single-cell RNA-seq of immune cells in a macaque model of Ebola infection
- Developed computational methods for exploring single-cell RNA-Seq data

Rotation student - Advisors: Nir Hacohen and Cathy Wu, Harvard University 2012-2014

- Analysis of gene expression and mutations in chronic lymphocytic leukemia (CLL)
- Modeling CLL mutations in primary B lymphocytes
- Phylogenetic reconstruction of tumor evolution in CLL

Undergraduate researcher - Advisor: Dana Pe'er, Columbia University 2008-2012

- Inferred regulatory networks in Ovarian and breast cancer from microarray data
- Implemented statistical analyses for exploring and visualizing gene expression

First author publications

A genome-wide association study identifies host genetic variants associated with susceptibility to Lassa Fever. **Kotliar D***, Raju S*, Tabrizi S*, Odia I*, ... Grant DS, Garry R, Barnes K, Happi C, Sabeti PC. **In review at Nature Microbiology**

Sciviewer enables interactive visual interrogation of single-cell RNA-Seq data from the Python programming environment. **Kotliar D**, Colubri A. **Bioinformatics. 2021**

Single-Cell Profiling of Ebola Virus Disease In Vivo Reveals Viral and Host Dynamics. **Kotliar D***, Lin AE*, Logue J, Hughes TK, ... Hensley LE, McIlwain DR, Shalek AK, Sabeti PC, Bennett RS. **Cell. 2020**

Identifying gene expression programs of cell-type identity and cellular activity with single-cell RNA-Seq. **Kotliar D***, Veres A*, Nagy MA, Tabrizi S, Hodis E, Melton DA, Sabeti PC. **eLIFE. 2019**

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Medical education in the United States: do residents feel prepared? Chen CA*, **Kotliar D***, Drolet BC.*. **Perspectives on Medical Education. 2015**

Additional publications

The Origins and Future of Sentinel: An Early-Warning System for Pandemic Preemption and Response. Botti-Lodovico Y, Nair P., ... **Kotliar D**, ... Sabeti PC, Happi C. **Viruses. 2021**

Identification of Common CD8+ T Cell Epitopes from Lassa Fever Survivors in Nigeria and Sierra Leone. Sakabe, S., ... **Kotliar, D.**, ... Oldstone, M.B.A., and Sullivan, B.M. **J. Virology. 2020**

High crossreactivity of human T cell responses between Lassa virus lineages. Sullivan BM, Sakabe S, ... **Kotliar D**, ... Schieffelin JS, and Oldstone MBA. **PLoS Pathog. 2020**

Detecting genome-wide directional effects of transcription factor binding on polygenic disease risk. Reshef YA, Finucane HK, Kelley DR, Gusev A, **Kotliar D**, ... Price AL. **Nature Genetics. 2018**

Field validation of recombinant antigen immunoassays for diagnosis of Lassa fever. Boisen ML, Hartnett JN, ... **Kotliar D**, ... Branco LM, Garry RF. **Science Reports. 2018**

Analysis of CD8+ T cell response during the 2013–2016 Ebola epidemic in West Africa. Sakabe S, Sullivan BM, ... **Kotliar D**, ... Oldstone MBA. **Proc. Natl. Acad. Sci. 2018**

Genomic Analysis of Lassa Virus during an Increase in Cases in Nigeria in 2018. Siddle KJ, Eromon P, ... **Kotliar D**, ... Sabeti PC, and Happi CT. **New England J. Med. 2018**

Integrated single-cell genetic and transcriptional analysis suggests novel drivers of chronic lymphocytic leukemia. Wang L, ... **Kotliar D**, ... Wu, CJ. **Genome Research. 2017**

Direct Identification of Hundreds of Expression-Modulating Variants using a Multiplexed Reporter Assay. Tewhey R, **Kotliar D**, ... Sabeti PC. **Cell. 2016**

Transcriptomic Characterization of SF3B1 Mutation Reveals Its Pleiotropic Effects in Chronic Lymphocytic Leukemia. Wang L, ... **Kotliar D**, ... Wu CJ. **Cancer Cell. 2016**

Locally disordered methylation forms the basis of intratumor methylome variation in chronic lymphocytic leukemia... Landau DA, ... **Kotliar D**, ... Wu CJ. **Cancer Cell. 2014**

Integration of genomic data enables selective discovery of breast cancer drivers. Sanchez-Garcia F, Villagrasa P, Matsui J, **Kotliar D**, ... Pe'er D. **Cell. 2014**

An Integrated Approach to Uncover Drivers of Cancer. Akavia UD, Litvin O, Kim J, Sanchez-Garcia F, **Kotliar D**, ... Pe'er D. **Cell. 2010**

Business experience

Nextgen Jane - Bioinformatics consultant

2016-2020

- Identified biomarkers of endometriosis and ovarian cancer in menstrual blood
- Implemented cloud computing infrastructure for data analysis
- Implemented cloud-based somatic mutation calling pipeline for ovarian cancer

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Teaching experience

- Supervisor for Harvard undergraduate thesis research** 2016-2017
- Culminated in a thesis on maximizing power for host GWAS of infectious diseases
- Teaching Assistant, Harvard University, CS109 - Data Science** Fall 2015
- Lead recitations and office hours covering advanced topics in machine learning
- Teaching Assistant, Columbia University, W4115 - Game Theory** Spring 2012
- Lead recitations and offices hours for undergraduate course in game theory

Additional professional activities

- Steering committee, Broad Institute Models Inferences and Algorithms Seminar** 2017-Present
- Co-organizer of a weekly 2-hour seminar series on computational methods in biology
- Learning Meaningful Representation of Life Workshop Co-organizer NEURIPS** December 2019
- Lead interactive session of >300 participants
- Crimson Care Collaborative – Senior clinician** 2015-2016
- Student clinician in a primary care clinic at Massachusetts General Hospital
- Resident tutor, Leverett House, Harvard** 2013-2015
- Residential advisor and pre-professional advisor for pre-medical students
 - Wrote medical school committee letters for ~5 students per year
- Volunteer and Project Coordinator for Health Leads** 2009-2011
- Volunteered at Harlem Hospital referring clients to social services
 - Recruited and supervised new volunteers, organized weekly reflection sessions
 - Worked on program development with full time employees.
- Associate Editor, Columbia Undergraduate Science Journal** 2009-2012
- Incorporated reviews from several undergraduate editors into final decisions

Selected talks and presentations

- K nearest neighbor graphs in high-dimensional data analysis** 3/29/2022
Models Inferences and Algorithms seminar – Broad Institute, Cambridge, MA
- Single-cell profiling of Ebola virus infection** 10/18/2021
MD-PhD/LHB Grand Rounds – Harvard Medical School, Boston, MA
- Identifying Cell-type and Activity Expression Programs in scRNA-Seq: Applications to Ebola Virus Infection** 10/6/2020
Broad Single-cell Working Group – Broad Institute, Cambridge, MA
- Single-cell Profiling of Ebola Virus Infection *In Vivo* Reveals Viral and Host Transcriptional Dynamics** 9/14/2020
Supergroup – Broad Institute, Cambridge, MA

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Single-cell Profiling of Ebola Virus Infection <i>In Vivo</i> Reveals Viral And Host Transcriptional Dynamics – Integrated Research Facility Scientific Review Board Meeting – Fort Detrick, Frederick, MD	12/11/2020
Single-cell Profiling Defines Viral and Host Transcriptional Dynamics in EVD – Food and Drug Administration Ebola Virus Workshop - University of Liverpool, Liverpool, United Kingdom	9/16/2019
Updates on PREVAIL VI: Host Genetics of Susceptibility to Ebola Virus Disease – Integrated Research Facility Lunch Seminar – Integrated Research Facility, Fort Detrick, Frederick, MD	8/1/2019
Identifying Cell-type and Activity Programs with Consensus Non-Negative Factorization of scRNA-Seq – Cancer Genomics Seminar, Stanley Center Psychiatric Genetics Seminar, Cell Circuits and Epigenomics Seminar, Medical and Population Genetics Seminar, Ragon Bioinformatics Seminar, Broad Institute, Cambridge, MA	1/17/2019 2/4/2019 2/5/2019 3/7/2019 7/31/2019
Identifying Gene Expression Programs of Cell-type Identity and Cellular Activity with scRNA-Seq – Models Inferences and Algorithms seminar – Broad Institute, Cambridge, MA	11/14/2018
Host Genetics of Susceptibility to Ebola and Lassa Virus Infection – Viral Hemorrhagic Fevers Consortium Annual Meeting – Scripps Institute, San Diego, CA	9/10/2018

Selected hobbies

Bass player for local Boston band True Faith - https://truefaithx.bandcamp.com	2020-Present
<ul style="list-style-type: none">• Co-writer and performer for 2 EPs and 1 LP	

Awards and honors

Graduate Cum Laude, Harvard Medical School	2022
Abstract Achievement Award for Amer. Soc. Of Hematology Conference	2013
Medical Scientist Training Program for MD/PhD at Harvard Medical School	2012
Graduate Summa Cum Laude, Columbia University	2012
Inaugural Recipient of Bridges and Sturtevant prize in Biological Sciences	2012
Phi Beta Kappa Honors Society	2012
Project Health Summer Fellow	2010
Summer Undergraduate Research Fellowship, Columbia University	2009
Dean's List, Columbia University	2008-2012
National Merit Scholarship Finalist	2008
National AP Scholar – For receiving grades of 5 on all 10 AP Exams taken	2008
Katherine Gorrie Internship Award, Stonybrook Watershed, for excellence as an environmental educator	2008
Prix d'Excellence, Princeton University Dept of French	2007
Ranked 10th in the nation in Le Grand Concours, Annual Association of Teachers of French	2007