Elham Azizi Curriculum Vitae

Herbert & Florence Irving Associate Professor of Cancer Data Research, Columbia University
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POSITIONS

- Herbert & Florence Irving Associate Professor of Cancer Data Research, Columbia University, 2025 - present
- Associate Professor (tenure-track), Department of Biomedical Engineering, Columbia University, 2025 - present
- Affiliated Faculty, Department of Computer Science, Columbia University, 2020 - present
- Affiliated Member, Data Science Institute, Columbia University, 2020 - present
- Member, Herbert Irving Comprehensive Cancer Center, Columbia University, 2020 - present
- Herbert & Florence Irving Assistant Professor of Cancer Data Research (in the Irving Institute for Cancer Dynamics), Columbia University, 2020 - 2024
- Assistant Professor (tenure-track), Department of Biomedical Engineering, Columbia University, 2020 - 2024
- Postdoctoral Research Fellow, Memorial Sloan Kettering Cancer Center, Mentor: Dr. Dana Pe'er, 2016 - 2019
- Postdoctoral Research Scientist, Department of Biological Sciences, Columbia University, Dr. Dana Pe'er (moved to MSK), 2014 - 2016
- Research Intern, Microsoft Research, Redmond, WA, Dr. Bill Bolosky. Summer 2014
- Visiting Researcher, Department of Statistics, Harvard University, Cambridge, MA, Dr. Edoardo Airoldi, 2013-2014
- Research Assistant, Department of Biomedical Engineering, Boston University, Boston, MA, Dr. James Galagan. 2010-2014

EDUCATION

- 2010-2014, Ph.D., Bioinformatics, Boston University, Boston MA, USA.
    - Advisor: Dr. James Galagan, Biomedical Engineering, Boston University.
    - Close collaborator: Dr. Edoardo Airoldi, Statistics, Harvard University.
    - Thesis: *Modeling Gene Regulatory Networks through Data Integration.*
- 2009 - 2010, M.S., Electrical Engineering (Machine Learning and Signal Processing), Boston University, Boston MA, USA.
- 2004 - 2008, B.S., Electrical Engineering (Signal Processing), minor in Industrial Engineering, Sharif University of Technology, Tehran, Iran.

HONORS AND AWARDS

- Vilcek Prize for Creative Promise in Biomedical Science (*three annual awardees under the age of 38*), 2025.
- Early-Career Innovator in Science Award in Cancer Immunology, Takeda and the New York Academy of Sciences (*one awardee across the globe*), 2024.
- Allen Distinguished Investigator Award, Allen Institute, 2023.
- NHGRI Award for Supporting Talented Early Career Researchers in Genomics (R01), 2023.
- CZI Science Diversity Leadership Award, Chan Zuckerberg Initiative and the National Academies of Sciences, Engineering, and Medicine, 2022.
- NSF CAREER Award, 2022.
- Provost's Grant for junior faculty contributing to the diversity goals of Columbia University, 2022.
- Columbia Research Initiatives in Science & Engineering (RISE) Award, 2021.
- Irving Endowed Assistant Professorship in Cancer Data Research, Columbia University, 2020.
- Tri-Institutional Breakout Prize for Junior Investigators, Weill Cornell Medicine, Rockefeller University, and Memorial Sloan Kettering Cancer Center, 2019.

- Next Generation in Biomedicine (20 scientists selected worldwide), Broad Institute of MIT and Harvard, 2018.
- NIH NCI Pathway to Independence Award (K99/R00), 2018.
- American Cancer Society Postdoctoral Fellowship, 2017.
- IBM Best Student Paper Award, New England Statistics Symposium (NESS), 2014.
- TEDMED Front Line Scholarship, 2014.
- Best Poster Presentation Awards: 10th Annual Machine Learning Symposium, The New York Academy of Sciences, 2016; Memorial Sloan Kettering Postdoctoral Research Symposium, 2016; Boston Bacterial Meeting, Harvard University, 2013; Bioinformatics Student Symposium, Boston University, 2013.
- Presidential Award for Exceptional Students, Iran, 2004.
- Silver Medal, 16th National Physics Olympiad, Iran, 2003.
- Prize in 11th Intl. Competition of First Step to Nobel Prize in Physics for high school students, Polish Academy of Sciences (first awardee from Iran), 2003.
- Silver Medal, National Khwarizmi Student Research Contest, Iran, 2002.

PUBLICATIONS

Note: ^ indicates corresponding and senior author(s). * equal contributions. Underlining indicates lab trainees.

1. Hong J*, Desai K*, Nguyen TD, Nazaret A, Levy N, Ergen C, Plitas G, **Azizi E^**, AMICI: Attention Mechanism Interpretation of Cell–cell Interactions. ***bioRxiv*** 2025.
2. Perez M*, Hong J*, Zweig A, Azizi E^, Domain-Invariant Feature Learning for Patient-Level Phenotype Prediction from Single-Cell Data, ***AI4Science Workshop at NeurIPS*** 2025.
3. Zweig A, Lin Z, Azizi E and Knowles DA, Towards identifiability of interventional stochastic differential equations, ***arXiv*** 2025.
4. Shi L*, Uzuni A*, Pressler M, Harle DW, Wang XK, Macedo R, Belay K, Gordillo CA, Chakrabarti S, Raps E, Shen X, Fuller JS, Azad T, Huang J, Chainani P, McFaline-Figueroa J, **Azizi E^**, Reshef R^. Multi-modal Immune Profiling of Graft-versus-Host Diseases in Humans. ***bioRxiv*** 2025.
5. Maurer K*, Park CY*, Mani S, Borji M, Raths F, Gouin III KH, Penter L, Jin Y, Zhang JY, Shin C, Brenner JR, Southard J, Krishna S, Lu W, Lyu H, Abbondanza D, Mangum C, Olsen LR, Neuberg DS, Bachireddy P, Glezer EN, Farhi SL, Li S, Livak KL, Ritz J, Coiffeur RJ, Wu CJ^, **Azizi E^**. Coordinated immune networks in leukemia bone marrow microenvironments distinguish response to cellular therapy, ***Science Immunology, 2025.*** (press release).
6. Fan JLF*, Zhang M*, O'Brien W, Myers J, Melms J, Biermann J, D'Souza E, Tagore S, Beltran-Velez N, Hoffer-Hawlik K, Preau A, Arora I, Chatterjee S, Izar B^, **Azizi E^**. Echidna: A Bayesian framework for quantifying gene dosage effect impacting phenotypic plasticity. ***Under revision in Nature Methods. bioRxiv.*** 2024.
7. Nazaret A*, Fan JL*, Lavallée V-P*, Burdziak C, Cornish AE, Kiseliovas V, Masilionis I, Chun J, Bowman RL, Eisman SE, Wang J, Shi L, Levine RL, Mazutis L, Blei D, Pe'er D^, **Azizi E^**, Joint representation and visualization of derailed cell states with Decipher. ***Genome Biology.*** 2025.
8. He S*, Zhu Y*, Tavakol DN*, Ye H, Lao YH, Zhu ZX, Xu C, Chauhan S, Garty G, Tomer R, Vunjak-Novakovic G, Zou J^, **Azizi E^**, Leong KW^. Squidiff: Predicting cellular development and perturbation response with diffusion model. ***Nature Methods***. ***In press.***
9. Frangieh, CJ*, Fan JL*, Melms JC, **Azizi E^**, Izar B^. Decoding cancer biology through clinical single-cell genomics. ***Nature Cancer. In press.***
10. Park C*, Mani S*, Beltran-Velez N, Maurer K, Gohil S, Li S, Huang T, Knowles DA, Wu CJ, **Azizi E^**. A Bayesian framework for inferring dynamic intercellular interactions from time-series single-cell data. ***Genome Research***. 2024. [**Featured as Cover Story**].

11. Nazaret A*^, Hong J*^, **Azizi E**^, Blei D^. Stable Differentiable Causal Discovery**,** ***Proceedings of International Conference in Machine Learning (ICML) 2024*** (top venue in machine learning; acceptance rate: 27%).
12. He S*, Jin Y*, Nazaret A*, Shi L, Chen X, Rampersaud R, Dhillon BS, Valdez I, Friend LE, Fan JL, Park CY, Mintz Y-H, Carrera D, Fang KW, Mehdi K, Rohde M, McFaline-Figueroa JL, Blei D, Leong KW, Rudensky AY^, Plitas G^, **Azizi E**^. Starfysh integrates spatial transcriptomic and histologic data to reveal heterogeneous tumor–immune hubs***. Nature Biotechnology,*** 2024**.** (press release) [Featured in *Nature Reviews Cancer:* Tools of the Trade].
13. Park C*, Mani S*, Beltran-Velez N, Maurer K, Gohil S, Li S, Huang T, Knowles DA, Wu CJ, **Azizi E**^. DIISCO: A Bayesian framework for inferring dynamic intercellular interactions from time-series single-cell data. ***Proceedings of Conference on Research in Computational Molecular Biology (RECOMB)*** 2024 (top venue in computational biology; acceptance rate: 16%).
14. Fan JL*, Nazaret A*, **Azizi E^.** A thousand and one tumors: the promise of AI for cancer biology. ***Nature Methods.*** 2024;21:1403-1406.
15. Boyeau P*, Hong J*, Gayoso A, Kim M, McFaline-Figueroa JL, Jordan MI, **Azizi E**, Ergen C^, Yosef N^, Deep generative modeling of sample-level heterogeneity in single-cell genomics, ***Nature Methods, In press***.
16. Gu J, Iyer A, Wesley B, Taglialatela A, Leuzzi G, Hangai S, Decker A, Gu R, Klickstein N, Shuai Y, Jankovic K, Parker-Burns L, Jin Y, Zhang JY, Hong J, Niu S, Chou J, Landau DA, **Azizi E**, Chan EM, Ciccia A, Gaublomme JT. Mapping multimodal phenotypes to perturbations in cells and tissue with CRISPRmap. ***Nature Biotechnology.*** 2024.
17. Fuller J, Abramov A, Mullin D, Beck J, Lemaitre P, **Azizi E**^. A Deep Learning Framework for Predicting Patient Decannulation on Extracorporeal Membrane Oxygenators: Development and Model Analysis Study. ***JMIR Biomedical Engineering***. 2024.
18. Liu Y, Jin Y, **Azizi E**^, Blumberg AJ^. CellStitch: 3D Cellular Anisotropic Image Segmentation via Optimal Transport. ***BMC Bioinformatics***. 24, 480. 2023.
19. Tavakol DN, Nash TR, Kim Y, He S, Fleischer S, Graney PL, Brown JA, Liberman M, Tamargo M, Harken A, Ferrando AA, Amundson S, Garty G, **Azizi E**, Leong KW, Brenner SJ, Vunjak-Novakovic G. Modeling and countering the effects of cosmic radiation using bioengineered human tissues. ***Biomaterials***. 2023 Aug 11:122267.
20. Wang Y*, Fan JL*, Melms JC*, Amin AD, Georgis Y, Barrera I, Ho P, Tagore S, Abril-Rodriguez G, He S, Jin Y, Biermann J, Hofree M, Caprio L, Berhe S, Khan S, Henick BS, Ribas A, Macosko EZ, Chen F, Taylor AM, Schwartz GK, Carvajal RD, **Azizi E**^, Izar B^, Multi-modal single-cell and whole-genome sequencing of small, frozen clinical specimens. ***Nature Genetics.*** 55, 19-25.2023. (press release).
21. Zhang M, Hoffer-Hawlik K, Izar B, **Azizi E**^. GGeraPHF: Graph Generative Poisson Hierarchical Factorization. ***ICML Workshop on Computational Biology.*** 2023.
22. Lia I, Vaikunthan M, Redenti A, Im J, Danino T, McFaline-Figueroa JL; **Azizi E**^. BacTIME: Computational inference of bacterial interactions with the tumor microenvironment. ***ICML Workshop on Computational Biology***. 2023.
23. Biermann J, Melms JC, Amin AD, Wang Y, Caprio LA, Karz A, Tagore S, Barrera I, Ibarra-Arellano MA, Andreatta M, Fullerton BT, [et al. including Azizi E]. Dissecting the treatment-naive ecosystem of human melanoma brain metastasis. ***Cell***. 2022 Jul 7;185(14):2591-608.
24. Nazaret A*, Fan JL*, Pe'er D, **Azizi E**^, Probabilistic basis decomposition for characterizing temporal dynamics of gene expression, ***ICML Workshop on Computational Biology.*** 2022.
25. He S, Xu C, Lao YH, Chauhan S, Xiao Y, Willner MJ, Jin Y, McElroy S, Rao SB, Gogos JA, Tomer R, **Azizi E**, Xu B, Leong KW. Mapping morphological malformation to genetic dysfunction in blood vessel organoids with 22q11. 2 Deletion Syndrome. ***bioRxiv***. 2021.

26. Bachireddy P*^, **Azizi E***^, Burdziak C, Nguyen VN, Ennis C, Maurer K, Park CY, Choo Z-N, Li S, Gohil, SH, Ruthen NG, Ge Z, Keshin D, Cieri N, Livak K, Kim HT, Neuberg DS, Soiffer RJ, Ritz J, Alyea E, Pe'er D^, Wu CJ^. Mapping the evolution of T cell states during response and resistance to adoptive cellular therapy. ***Cell Reports****, 37, no. 6: 109992, 2021.* (**Featured in top 10 Best of Cell Reports 2021-2022**).
27. Jin Y*, Toberoff A*, **Azizi E^,** Transfer learning framework for cell segmentation with incorporation of geometric features, ***NeuriPS LMRL Workshop,*** *2020.*
28. Alonso-Curbelo D, Ho YJ, Burdziak C, [et al. including **Azizi E**], A gene–environment-induced epigenetic program initiates tumorigenesis. ***Nature****. 2021 Feb;590(7847):642-8.*
29. Price JC, **Azizi E**, Naiche LA, Parvani JG, Shukla P, Kim S, Slack-Davis JK, Pe'er D, Kitajewski JK, Notch3 signaling promotes tumor cell adhesion and progression in a murine epithelial ovarian cancer model, ***Plos one***, 15(6) : e0233962, 2020. PubMed PMID: 32525899.
30. Burdziak C*, **Azizi E***, Prabhakaran S, & Pe'er D, A Nonparametric Multi-view model for Estimating Cell Type-Specific Gene Regulatory Networks. ***arXiv*** *1902.08138, 2019.*
31. Hemmers S, Schizas M, **Azizi E,** Dikiy S, Zhong Y, Feng Y, Altan-Bonnet G, Rudensky AY. IL-2 production by self-reactive CD4 thymocytes scales regulatory T cell generation in the thymus. ***Journal of Experimental Medicine***. 2019 Nov 4;216(11):2466-78.
32. Viny AD, Bowman RL, Liu Y, [et al. including **Azizi E**]. Cohesin members Stag1 and Stag2 display distinct roles in chromatin accessibility and topological control of HSC self-renewal and differentiation. ***Cell Stem Cell***. 2019 Nov 7;25(5):682-96.
33. **Azizi E***, Carr AJ*, Plitas G*, Cornish AE*, Konopacki C, Prabhakaran S, Nainys J, Wu K, Kiseliovas V, Setty M, Choi K, Fromme, R.M., Dao P, McKenney P.T., Wasti, R.C., Kadaveru, K., Mazutis L, Rudensky AY^, Pe'er D^, Single-cell Map of Diverse Immune Phenotypes in the Breast Tumor Microenvironment, ***Cell*** *174 (5): 1293-1308, 2018* (**Featured as Cover Story; over 1900 citations to date**)
34. Diallo AB , Nguifo EM, Dhifli W, **Azizi E**, Prabhakaran S, Tansey W, Selected Papers from the Workshop on Computational Biology: Joint with the International Joint Conference on Artificial Intelligence and the International Conference on Machine Learning, ***Journal of Computational Biology*** 26(6) : 507-508, 2019. PubMed PMID: 31184954
35. **Azizi E***, Prabhakaran* S, Carr A, Pe'er D**,** Bayesian Inference for Single-cell Clustering and Imputing, ***Genomics and Computational Biology*** *3 (1), 46, 2017.*
36. Prabhakaran S*, **Azizi E***, Carr A, Pe'er D, Dirichlet Process Mixture Model for Correcting Technical Variation in Single-Cell Gene Expression Data, ***Proceedings of The 33rd International Conference on Machine Learning (ICML), PMLR*** *48:1070-1079, 2016* (Top venue in machine learning, acceptance rate: 24%; Recipient of Dataminr Poster Presentation Award, NYAS Machine Learning Symposium 2016).
37. Dekhang R, Wu C, Smith KM, Lamb TM, Peterson M, Bredeweg EL, Ibarra O, Emerson JM, Karunarathna N, Lyubetskaya A, **Azizi E**, Hurley JM, Dunlap JC, Galagan JE, Freitag M, Sachs MS, Bell-Pederson D. The Neurospora transcription factor ADV-1 transduces light signals and temporal information to control rhythmic expression of genes involved in cell fusion. ***G3: Genes, Genomes, Genetics***. 2017 Jan 1;7(1):129-42.
38. **E. Azizi**, Modeling gene regulatory networks through data integration, *Ph.D. Thesis*, Boston University, 2014.
39. **Azizi E**, Airoldi EM, Galagan JE, Learning Modular Structures from Network Data and Node Variables, ***Proceedings of the 31st International Conference on Machine Learning (ICML), PMLR*** *32(2):1440-1448, 2014* (Recipient of IBM Best Student Paper Award, NESS 2014) (Extended version).
40. Gomes AL, Abeel T, Peterson M, **Azizi E**, Lyubetskaya A, Carvalho L, Galagan J. Decoding ChIP-seq with a double-binding signal refines binding peaks to single-nucleotides and predicts cooperative interaction. ***Genome research***. 2014 Oct 1;24(10):1686-97.

41. Galagan JE, Minch K*, Peterson M*, Lyubetskaya A*, **Azizi E***, Sweet L*, Gomes A*, Rustad T, Dolganov G, Glotova I, et al., The Mycobacterium tuberculosis regulatory network and hypoxia, ***Nature**. 2013 Jul 11; 499 (7457): 178-183*. doi: 10.1038/nature12337. (Azizi listed as co-second author; advisor listed as first author).
42. **Azizi E**. Joint learning of modular structures from multiple data types. ***NeurIPS workshop on frontiers of network analysis.*** 2013.
43. Kianfar S, **Azizi E**, Kianfar F. A Comparison of Two Estimators for Solutions to Greedy Algorithm in Scheduling Depletable Sources. ***International Conference on Risk Management & Engineering Management***. 2008.
44. **Azizi E**, Mohimani GH, Babaie-Zadeh M. Adaptive Sparse source separation with application to speech signals. ***IEEE International Conference on Signal Processing and Communications*** 2007 Nov 24 (pp. 640-643). IEEE.

TEACHING

- Fall 2025 BMCSE 4480 Statistical Machine Learning in Genomics
- Spring 2025 BMCS 4575 High-dimensional Statistics for Biomedical Data
- Fall 2024 BMCSE 4480 Statistical Machine Learning in Genomics
- Summer 2024 IICD Intensive Workshop: Methods in Single-Cell Data Integration and Optimal Transport
- Spring 2024 BMCSE 4480 Statistical Machine Learning in Genomics
- Spring 2023 BMENE 4480 Statistical Machine Learning in Genomics
- Spring 2022 BMENE 4480 Statistical Machine Learning in Genomics
- Summer 2021: AI4ALL: AI in Genomics
- Fall 2020 BMENE 4480 Statistical Machine Learning in Genomics
- Summer 2020: AI4ALL: AI in Genomics

MENTORSHIP

Note: IICD=Irving Institute for Cancer Dynamics; BME=Biomedical Engineering; CS=Computer Science.

- **Postdoctoral Trainees:**
  - *Current***:** Aaron Zweig (IICD; co-mentored with David Knowles); Lingting Shi (IICD; co-mentored with José McFaline-Figueroa).
  - *Former:* Xueer Chen (IICD; next position: Senior scientist at Bristol Myers Squibb).
- **Doctoral Students:**
  - *Current***:** Yinuo Jin (BME), Justin Hong (CS), Ioana Lia (BME; co-advised with José McFaline-Figueroa); Kevin Hoffer-Hawlik (BME, co-advised with José McFaline-Figueroa), Mingxuan Zhang (CUMC, co-advised with Andrea Califano), Neeha Kothapalli (MD-PhD; co-adivised with Ben Izar), Khushi Desai (CS), Joshua Myers (BME), Sopho Kevlishvili (BME).
  - *Former:* Siyu He (BME; co-advised with Kam Leong; next position: postdoctoral fellow at Stanford). Cameron Y. Park (BME; Next position: Consultant, McKinsey), Linyue Joy Fan (BME; Next position: Postdoctoral Fellow, Genentech), Achille Nazaret (CS, co-advised with David Blei; Next position: Research Scientist, Apple.)
- **Master Students:** *Current***:** Bar Rozenman (BME), Achsah Aruva (BME). *Former:* Khushi Desai (CS), Michael Pressler (BME), Jia Yi (Ady) Zhang (BME), Xumin Shen (BME), Crystal Shin (BME), Shouvik Mani (CS), Lauren Friend (BME).
- **Research interns sponsored from outside Columbia:** Marc Chevrier (France Polytechnique), Lea Bohbot (France Polytechnique), Abdullah Naqvi (CCNY), Tu Duyen Nguyen (France Polytechnique), Anabel Ojeda (Adelphi), Hannah Khanshali (CCNY), Pranik Chainani (Yale).
- **Undergraduate trainees:** *Current***:** Nicholas Djedjos, *Former:* Veronica Woldehanna, Jose Pomarino Nima, Tamjeed Azad, Alex Toberoff, Joshua Fuller, Max David Gupta, Ruxandra Tonea, James Wang, Sopho Kevlishvili, Isha Arora, David Carrera, Noa Kalfus (Barnard), William O'Brien, Siddhant Sanghi, Alyssa King, Emma Losonczy, Jessie Huang, Danielle Maydan, Kaylee Fang.

- **High school research interns:** Princess Della Tsivor, Rachel Africk, Kaleem Mehdi, Madeline Rohde.

INVITED TALKS

1. CSHL Bioengineered Tissue Systems & Models, Sep 2025.
2. JSM Special session on Innovative Statistical Methods & AI for unlocking the power of spatial omics, Aug 2025.
3. Harvard Program in Quantitative Genomics Seminar Series, May 2025.
4. Stanford Center for Cancer Systems Biology Symposium, May 2025.
5. MIT Whitehead Institute, AI: Advancing Foundational Biology, April 2025.
6. CMU-Pitt PhD Program in Computational Biology Seminar, March 2025.
7. AACR-JCA Joint Conference: From Cancer Discovery Science to Therapeutic Innovation, Maui, February 2025.
8. Single Cell and Spatial Biology in Precision Medicine Workshop, Bellairs Research Institute, Barbados, December 2024.
9. American Society of Hematology (ASH) Annual Meeting, San Diego, December 2024.
10. Stanford Cancer Biology Seminar Series, October 2024.
11. Bertinoro Computational Biology meeting: Cancer Heterogeneity and Immune Interactions, Italy, Sep 2024.
12. Cancer Immunotherapy: from bench to bedside and back Nature Conference, DFCI, Boston MA, June 2024.
13. NCI Data Science Seminar Series, May 2024.
14. NCI Spring School on Algorithmic Cancer Biology (SSACB), April 2024
15. Probing Human Disease Using Single-Cell Technologies Fusion Conference, Feb 2024.
16. American Society of Hematology (ASH) Annual Meeting, San Diego, December 2023.
17. The 18th Machine Learning in Computational Biology (MLCB2023), Seattle WA, December 2023 [***Keynote***].
18. MD Anderson Cancer Center's 2023 Leading Edge of Cancer Research Symposium, November 2023.
19. JKTG Foundation Symposium on Metastasis, Spatial Analytics and Combination Therapies, Bethesda MD, October 2023.
20. American Cancer Society Comedy Against Cancer fundraising event, Stamford CT, September 2023.
21. Single Cell Mapping in Development & Cancer Symposium, NYU Langone Department of Pathology, September 2023
22. EMBL-EBI Precision medicine in the era of high-resolution biology & artificial intelligence, Cambridge MA, September 2023.
23. Lipari Summer School: Computational Single-Cell Analysis with application in Biology and Medicine, July 2023.
24. Cell Growth and Proliferation Gordon Research Conference, July 2023.
25. Tumor-Immune Systems Biology Symposium, MSKCC, May 2023.
26. MSKCC Computational Oncology Seminar Series, April 2023.
27. NCI Cancer AI Research: Computational Approaches Addressing Imperfect Data Workshop, April 2023.
28. CSHL Probabilistic Modeling in Genomics, March 2023.
29. Transplantation and Cellular Therapy meeting of ASTCT and CIMTBR, February 2023.
30. Weill Cornell Medicine ICB Seminar Series, October 2022.
31. JSM 2022 Special Session on Statistical methods for single cell genomics and spatial transcriptomics, August 2022.
32. Probing Human Disease Using Single-Cell Technologies Fusion Conference, May 2022
33. University of Pennsylvania Bioengineering Graduate Research Symposium, April 2022, [***Keynote***].
34. Women in Science at Columbia (WISC) Graduate Research Symposium, April 2022, [***Keynote***].
35. Dept. of Bioinformatics and Computational Biology, University of Texas MD Anderson Cancer Center, March 2022.
36. NIAID Data Science Seminar, December 2021.
37. UNC Computational Medicine Seminar, November 2021.

38. Johns Hopkins Biomedical Engineering Seminar Series, November 2021.
39. Redirected Immune Cell Therapies Webinar, The New York Academy of Sciences, September 2021.
40. University of Washington Machine Learning in Computational Biology Seminar Series, May 2021.
41. NYU Biomedical Engineering Colloquium, April 2021.
42. ENAR Invited session on Bulk deconvolution and single-cell data analysis, March 2021.
43. NYU Pathology Department Research Seminar Series, March 2021.
44. 2nd Annual Symposium on Epigenetics, Immunity and Cancer, Universities of Pennsylvania, Columbia and Temple (virtual), Jan 2021.
45. Systems Biology Seminar Series, Boston University, March 2020.
46. Annual Engineering in Medicine Symposium, Columbia University, Feb 2020.
47. RECOMB RSG meeting, Memorial Sloan Kettering, Nov 2019. [***New Investigator Spotlight Speaker***]
48. New York Genome Center Computational Cancer Genomics Evening Lecture, May 2019.
49. Harvard Medical School BWH Center for Data Sciences, Mar 2019.
50. MIT Biology Department & Broad Institute, Feb 2019.
51. Columbia University Biomedical Engineering Department, Feb 2019.
52. Rockefeller University, Feb 2019.
53. Yale School of Medicine Department of Immunobiology, Feb 2019.
54. University of Pennsylvania Departments of Cancer Biology and Pathology, Jan 2019.
55. Symposium of Mathematical Genomics, Columbia University, Jan 2019
56. NYU School of Medicine Institute for Computational Medicine, Jan 2019.
57. Next Generation in Biomedicine Symposium, Broad Institute of MIT and Harvard, Nov 2018.
58. The American Society of Human Genetics (ASHG) Annual Meeting, Characterization of tumor microenvironment in breast carcinoma using scRNA-seq, San Diego, Oct 2018.
59. Keystone Symposia on Translational Systems Immunology, Computational Approaches to Understanding Cellular Heterogeneity in the Tumor-Immune Microenvironment, Snowbird, Jan 2018.
60. Challenges and Synergies in the Analysis of Large-Scale Population-Based Biomedical Data, Bayesian Inference of Cell Type-Specific Gene Regulatory Networks, Oaxaca, Mexico, Nov 2017.
61. Bioconductor Conference BioC 2017: Where Software and Biology Connect, Bayesian Inference for Single-cell Clustering and Imputing, Boston, 2017.
62. 2nd Challenges in Computational Biology: Gene Expression Data Analysis, Bayesian Inference for Single-cell Clustering and Imputing, IMB Mainz, Germany, Dec 2016.
63. ISMB 2012: Special Session on Modeling Infectious Diseases, Reconstructing the Regulatory Network of TB : Deconstruction of the Hypoxic Response, Long Beach, CA.

MEDIA AND PRESS

- Takeda and The New York Academy of Sciences Announce 2024 Innovators in Science Award [Summary Video] [Ceremony] [Press release] [Columbia Story] [Award announcement]
- Chan Zuckerberg Science Diversity Leadership [Link] [Columbia story]
- Starfysh, a Breakthrough Tool Transforming Spatial Gene Expression Analysis [Columbia Article]
- Multimodal Sequencing Achieves High-Quality Results from Small Volumes of Frozen Tumor Specimens [Columbia Article]
- Highlighted in Theory Lab Podcast discussion led by American Cancer Society
- Featured in Columbia Engineering Magazine story on AI in Health and Medicine