

# CURRICULUM VITAE

**Freida A. Blostein**

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## Positions

**Postdoctoral research fellow** Genetic Medicine, Vanderbilt University Medical Center, Nashville, Tennessee. March 2023-Present

**Postdoctoral research fellow** Institute for Social Research, University of Michigan, Ann Arbor, Michigan. January 2023-March 2023

## Education

**Doctorate of Philosophy**, Epidemiologic science, University of Michigan, Ann Arbor, Michigan. September 2018 - December 2022.

Dissertation: Salivary omics measurements as biomarkers in epidemiological analyses.

Advisors: Kelly M. Bakulski & Betsy Foxman.

*University of Michigan ProQuest Distinguished Dissertation Award*

**Masters of Public Health**, Epidemiology, University of Michigan, Ann Arbor, Michigan. September 2016 - May 2018.

**Bachelors of Science**, Major: Evolutionary Anthropology, Minor: Applied Statistics, University of Michigan, Ann Arbor, Michigan. September 2012 - May 2016.

## Publications

\*denotes equal contribution of authors

1. Byrd, M, Davis, E, **Blostein, F**, Bhaumik, D, Shaffer, JR, McNeil, DW, Marazita, ML, & Foxman, B. (2024). Risk of postpartum dental caries: Survival analysis of black/african american and white women in appalachia. *Womens Health Rep (New Rochelle)*, 5, 108–119. <https://doi.org/10.1089/whr.2023.0056>
2. Kresge\*, HA, **Blostein\*, F**, Goleva, S, Albiñana, C, Revez, JA, Wray, NR, Vilhjálmsón, BJ, Zhu, Z, McGrath, JJ, & Davis, LK. (2024). Phenomewide association study of health outcomes associated with the genetic correlates of 25 hydroxyvitamin d concentration and vitamin d binding protein concentration. *Twin Res Hum Genet*, 1–11. <https://doi.org/10.1017/thg.2024.19>
3. Antonello, G, **Blostein, F**, Bhaumik, D, Davis, E, Gögele, M, Melotti, R, Pramstaller, P, Pattaro, C, Segata, N, Foxman, B, & Fuchsberger, C. (2023). Smoking and salivary microbiota: A cross-sectional analysis of an italian alpine population. *Scientific Reports*, 13, 18904. <https://doi.org/10.1038/s41598-023-42474-7>
4. Bakulski, KM, **Blostein, F**, & London, SJ. (2023). Linking prenatal environmental exposures to lifetime health with epigenome-wide association studies: State-of-the-science review and future recommendations. *Environmental Health Perspectives*, 131, 126001. doi: 10.1289/EHP12956

5. Benjamin, WJ, Wang, K, Zarins, K, Bellile, E, **Blostein, F**, Argirion, I, Taylor, JMG, D'Silva, NJ, Chinn, SB, Rifkin, S, Sartor, MA, & Rozek, LS. (2023). Oral microbiome community composition in head and neck squamous cell carcinoma. *Cancers*, 15. <https://doi.org/10.3390/cancers15092549>
6. **Blostein, F**, Zou, T, Bhaumik, D, Salzman, E, Bakulski, KM, Shaffer, JR, Marazita, ML, & Foxman, B. (2023). Bacterial community modifies host genetics effect on early childhood caries. *Journal of Dental Research*, 102, 1098–1105. <https://doi.org/10.1177/00220345231175356>
7. Bhaumik, D, Salzman, E, Davis, E, **Blostein, F**, Li, G, Neiswanger, K, Weyant, RJ, Crout, R, McNeil, DW, Marazita, ML, & Foxman, B. (2022). Plaque microbiome in caries-active and caries-free teeth by dentition. *JDR Clinical & Translational Research*. <https://doi.org/10.1177/23800844221121260>
8. **Blostein, F**, Fisher, J, Dou, J, Schneper, L, Ware, EB, Notterman, DA, Mitchell, C, & Bakulski, KM. (2022). Polymethylation scores for prenatal maternal smoke exposure persist until age 15 and are detected in saliva in the fragile families and child wellbeing cohort. *Epigenetics*, 17, 2223–2240. <https://doi.org/10.1080/15592294.2022.2112815>
9. **Blostein, F**, Bhaumik, D, Davis, E, Salzman, E, Shedden, K, Duhaime, M, Bakulski, KM, McNeil, DW, Marazita, ML, & Foxman, B. (2022). Evaluating the ecological hypothesis: Early life salivary microbiome assembly predicts dental caries in a longitudinal case-control study. *Microbiome*, 10, 240. <https://doi.org/10.1186/s40168-022-01442-5>
10. **Blostein, F**, Foote, S, Salzman, E, McNeil, DW, Marazita, ML, Martin, ET, & Foxman, B. (2021). Associations between salivary bacteriome diversity and salivary human herpesvirus detection in early childhood: A prospective cohort study. *Journal of the Pediatric Infectious Diseases Society*. <https://doi.org/10.1093/jpids/piab044>
11. **Blostein, F**, & Foxman, B. (2021). Insights into epidemiologic assessments of the microbiome and challenges in identifying microbiome relationships with adverse pregnancy outcomes. *Current Epidemiology Reports*, 8, 143–150. <https://doi.org/10.1007/s40471-021-00263-8>
12. Davis, E, Martinez, G, **Blostein, F**, Marshall, T, Jones, AD, Jansen, E, McNeil, DW, Neiswanger, K, Marazita, ML, & Foxman, B. (2021). Dietary patterns and risk of a new carious lesion postpartum: A cohort study. *Journal of Dental Research*, 220345211039478. <https://doi.org/10.1177/00220345211039478>
13. **Blostein, F**, Jansen, EC, Jones, AD, Marshall, TA, & Foxman, B. (2020). Dietary patterns associated with dental caries in adults in the united states. *Community Dentistry and Oral Epidemiology*, 48, 119–129. <https://doi.org/10.1111/cdoe.12509>
14. **Blostein, F**, Gelaye, B, Sanchez, SE, Williams, MA, & Foxman, B. (2020). Vaginal microbiome diversity and preterm birth: Results of a nested case-control study in peru. *Annals of Epidemiology*, 41, 28–34. <https://doi.org/10.1016/j.annepidem.2019.11.004>
15. Collingwood, A, **Blostein, F**, Seekatz, AM, Wobus, CE, Woods, RJ, Foxman, B, & Bachman, MA. (2020). Epidemiological and Microbiome Associations Between Klebsiella pneumoniae and Vancomycin-Resistant Enterococcus Colonization in Intensive Care Unit Patients. *Open Forum Infectious Diseases*, 7. <https://doi.org/10.1093/ofid/ofaa012>
16. Manohar\*, J, Hatt\*, S, DeMarzo\*, BB, **Blostein\*, F**, Cronenwett, AEW, Wu, J, Lee, KH, & Foxman, B. (2020). Profiles of the bacterial community in short-term indwelling urinary catheters by duration of catheterization and subsequent urinary tract infection. *American Journal of Infection Control*, 48, 178–183. <https://doi.org/10.1016/j.ajic.2019.08.005>
17. Ramadugu\*, K, **Blostein\*, F**, Bhaumik, D, Jiang, W, Davis, E, Salzman, E, Srinivasan, U, Marrs, CF, Neiswanger, K, McNeil, DW, Marazita, ML, & Foxman, B. (2020). Co-occurrence of yeast, streptococci, dental decay, and gingivitis in the post-partum period: results of a longitudinal study. *Journal of Oral Microbiology*, 12, 1746494. <https://doi.org/10.1080/20002297.2020.1746494>
18. Townsend, T, **Blostein, F**, Doan, T, Madson-Olson, S, Galecki, P, & Hutton, DW. (2020). Cost-effectiveness analysis of alternative naloxone distribution strategies: First responder and lay distribution in the united states. *The International Journal on Drug Policy*, 75, 102536. <https://doi.org/10.1016/j.drugpo.2019.07.031>
19. **Blostein, F**, Assari, S, & Caldwell, CH. (2017). Gender and ethnic differences in the association between body image dissatisfaction and binge eating disorder among blacks. *Journal of Racial and Ethnic Health Disparities*, 4, 529–538. <https://doi.org/10.1007/s40615-016-0255-7>
20. **Blostein, F**, Levin-Sparenberg, E, Wagner, J, & Foxman, B. (2017). Recurrent vulvovaginal candidiasis. *Annals of Epidemiology*, 27, 575–582.e3. <https://doi.org/10.1016/j.annepidem.2017.08.010>

## In Review

1. Higgins Tejera, C, Ware, EB, Hicken, MT, Kobayashi, MT, Wang, H, Adkins-Jackson, PB, **Blostein, F**, Zawistowski, M, Mukherjee, B, Bakulski, KM. The Mediating Role of Systemic Inflammation and Moderating Role of Race/Ethnicity in Racialized Disparities in Incident Dementia: A Decomposition Analysis. (2023). doi: <https://doi.org/10.1101/2023.03.22.23287593> *In review*
2. Wang, H, Bakulski, KM, **Blostein, F**, Porath, BR, Higgins Tejera, C, Ware, EB. Depressive symptoms are associated with DNA methylation age acceleration in a cross-sectional analysis of adults over age 50 in the United States. (2023). doi: <https://doi.org/10.1101/2023.04.24.23289052> *In review*

## Grant support

Pilot award. Blostein (PI). 01/01/2022-05/30/2023  
Integrated Training in Microbial Systems Mini Grant, Total annual direct cost: \$10,000  
**Testing the role of metabolic interactions and processes in the formation of cariogenic oral microbiomes**  
Role: Principal Investigator.

NIH F31 DE029992. Blostein (PI). 09/01/2020-08/31/2023.  
NIDCR, Total annual direct cost: \$36,360  
**Environmental and Genetic Factors Contributing to the Development of the Early-Life Oral Microbiome and its Influence on Early Childhood Caries**  
Role: Principal Investigator.

## Awards & Honors

**2023** Vanderbilt Genomic Medicine Training Program Postdoctoral Fellow (T32 HG008341)

**2022** University of Michigan ProQuest Distinguished Dissertation Award

**2022** Rackham Graduate School National Travel Award

**2021** AAAS/Science Program for Excellence: 1-year Sponsored American Academy for the Advancement of Science Membership.

**2019** Science Communication Fellow, University of Michigan Natural History Museum

**2018-2020** Genome Science Training Program, National Human Genome Research Institute Predoctoral Fellow (T32 HG00040)

**2018-2022** Integrated Training in Microbial Systems Fellowship

**2018** Rackham Graduate School International Travel Award

**2018** Summa Cum Laude, University of Michigan School of Public Health

**2017** Epidemiology Department Travel Award

**2017** Top Poster, University of Michigan, School of Public Health, Department of Epidemiology Poster Session

**2016-2018** School of Public Health Dean's Scholarship

**2016** Summa Cum Laude, University of Michigan

**2015** Phi Beta Kappa

**2014, 2015, 2016** James B. Angell Scholar, University of Michigan

**2013, 2014, 2015** University Honors, University of Michigan

**2012-2016** Sydney J and Irene Shipman Scholarship Awardee

## Teaching

All teaching conducted at the University of Michigan, Ann Arbor, Michigan

### Instructor

**Machine Learning for Epidemiological Analysis in the Era of Big Data (EPID 708)**; 2020 & 2021. 20-30 graduate-level students/session, 1 section/year, summer session. Title: Teaching assistant.

**Advanced Methods in Epidemiology (EPID 824)**; 2020-2021. 1-2 graduate-level students/session, 1 section/year, fall and winter semester. Title: Departmental tutor.

**Programming in R for Epidemiologists Summer Session in Epidemiology**; 2019. 1 graduate-level student/session, 1 section/year, summer session. Title: Departmental tutor.

**Reproductive Health (NURSING 352)**; 2016-2017. 80-100 undergraduate-level students/semester, 1 section/year, fall and winter semester. Title: Instructional aide.

**Undergraduate Research Opportunity Program (UC 280)**; 2014-2016. 25-35 undergraduate-level students/semester, 2 sections/year, fall and winter semester. Title: Peer advisor.

**First Year Writing Seminar (RCCORE 100)**; 2013-2014. 25-30 undergraduate-level students/section, 1 section/year, fall semester. Title: Teaching assistant.

### Guest lecturing

**Molecular Epidemiology (EPID 582)**; 2021. 15-25 graduate-level students/session.

**Epidemiologic Data Analysis Using R (EPID 674)**; 2020. 15-20 graduate-level students/session.

**Biological Basis of Human Disease (EPID 512)** 2020. 50-85 graduate-level students/session.

## Presentations

### Oral presentations

**July 2023** Electronic health reported-sex as a modifier of type 2 diabetes comorbidities and genetic associations. Center for Precision Medicine, Vanderbilt University Medical Center. Seminar.

**July 2022** Early life assembly of the salivary microbiome is associated with maternal microbiome and future dental caries. Beneficial Microbes. Oral presentation.

**March 2022** Does Mothers' Oral Microbiome Seed Children's Microbiome Increasing Caries Risk? American Association for Dental, Oral, and Craniofacial Research Annual Meeting. Lightning talk.

**October 2021** Polymethylation Scores for Prenatal Maternal Smoke Exposure Persist Until Age 15 and are Detected in Saliva. International Genetics Epidemiology Society Annual Meeting. Poster/Lightning talk.

**September 2020** Epidemiology: A career for the mathematically minded. University of Michigan Dearborn Undergraduate Mathematics Club.

**July 2019** A tale of two clusterings: Comparison of clustering techniques in longitudinally collected salivary samples. University of Michigan Microbiome Seminar.

**October 2017** Improving naloxone distribution in the opioid epidemic: a cost-effectiveness analysis of naloxone distribution comparing first responders and laypeople. 39th Annual Meeting of the Society for Medical Decision Making.

**April 2016** Creating research opportunities with community-based organizations in Detroit, MI. 30th Annual Meeting for Undergraduate Research.

## Posters

**April 2024** Sex differences in type 2 diabetes and type 2 diabetes genetic risk comorbidity burdens: A phenome and laboratory-wide study. National Human Genome Research Institute Annual Trainee Meeting.

**October 2023** Sex differences in genetic architecture of clinical laboratory tests: A lab wide analysis in the electronic health record. Annual Meeting of the American Society of Human Genetics.

**July 2021** Triangulating the early childhood caries salivary microbiome: a longitudinal case-control study. International Association of Dental Research Annual Meeting.

**October 2020** Do dental plaque and salivary microbiomes have independent associations with early childhood caries? A case-control study. Exploring Human Host-Microbiome Interactions in Health and Disease 2020.

**October 2020** Triangulation of the early childhood caries microbiome using three techniques for high-dimensional microbial data analysis. Cold Spring Harbor Laboratory Microbiome Virtual Meeting 2020.

**November 2018** Herpes virus acquisition in infancy: association with the salivary microbiome? The International Conference on Molecular Epidemiology and Evolutionary Genetics of Infectious Disease.

**July 2018** Dietary patterns predict dental decay in the U.S.: Results from a nationally representative survey. International Association of Dental Research 2018.

**July 2018** Candida albicans and caries in post-partum Appalachian women. Poster. International Association of Dental Research 2018.

**March 2015** Beyond a white woman's disease: Gender and ethnic differences in binge eating disorder among blacks. 14th Annual Michigan Epidemiology Conference.

## Skills

**Computer** R, Python, SAS, LATEX, Bash, Microsoft Office

**Language** Spanish – Proficient

## Service & Science Communication

**Statistics in the Community volunteer** 2021-2022 Served as a team analyst for Statistics in the Community, a community outreach program where graduate students provide free expertise on data organization, analysis and interpretation to non-profit governmental and community organizations.

**Women in Science and Engineering Student Programming Board** 2021-2022 Served as a student liaison for the Women in Science and Engineering program at the University of Michigan. Designed and hosted a microbiology- and epidemiology-themed session for approximately 20 middle-school students at a summer science camp hosted by Women in Science and Engineering.

**Podcast Host** Developed, wrote and produced a 3 episode miniseries entitled Get the Dirt on 'Crobecast: an ITiMS podcast on microbial systems, which explored the soil crisis in the United States, and the science behind soil revitalization. Available on Apple Podcasts, Spotify & more...

**Peer Editor** Acts as a pre-submission peer reviewer of scientific manuscripts prepared by health researchers from low- and middle-income countries in order to develop competitive manuscripts for submission to a peer-reviewed journal. Through the Pre-publication Support Service.

**Volunteer Tutor** 2018-2020 Tutored elementary – high school aged children in math, science, reading and writing through 826Michigan.

## Ad Hoc Reviewer

*American Journal of Epidemiology*

*BMC Oral Health*

*Pediatric Infectious Disease Journal*

*Scientific Reports*

**Professional Memberships**

American Society for Human Genetics

International Genetic Epidemiology Society

Data Visualization Society

Society for Epidemiologic Research

International Association for Dental Research 2018-2021

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