

Emily R. Davenport

Assistant Professor – Pennsylvania State University

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<http://davenport-lab.github.io/>  | @emo_davenport 

Education

- 2009 - 2014 Ph.D in Human Genetics
 Certificate in University Teaching
 University of Chicago; Chicago, IL
 Advisor: Yoav Gilad (supported by NIH training grant)
- 2003 - 2007 B.S. in Bacteriology (with comprehensive honors)
 University of Wisconsin – Madison; Madison, WI
- 2005 International Study Program, selected participant
 National University of Ireland, Galway; Galway, Ireland

Academic, Research, and Industry Experience

- 2019 - **Assistant Professor.** Department of Biology, Huck Institutes of the Life Sciences, Institute for Computational and Data Sciences; The Pennsylvania State University; University Park, PA.
- 2018 - 2019 **Visiting Post-doctoral Fellow.** Supervisor: Ruth Ley (supported by NIH NRSA) Department of Microbiome Science, Max Planck Institute for Developmental Biology; Tübingen, Germany.
- 2014 - 2019 **Post-doctoral Fellow.** Advisor: Andrew Clark (supported by NIH NRSA) Department of Molecular Biology and Genetics, Cornell University; Ithaca, NY.
- 2008 - 2009 **Sequence Capture Technician.** Supervisor: Mindy Bennett. Roche NimbleGen; Madison, WI.
- 2007 - 2008 **Forensic Scientist – DNA Analyst.** Supervisor: Sherry Culhane. DNA Unit, Department of Justice - Wisconsin State Crime Lab; Madison, WI.
- 2004 - 2007 **Undergraduate Research Assistant/Independent Research.** Advisor: Steven Barclay Department of Bacteriology, University of Wisconsin – Madison; Madison, WI.
- 2006 **International Research Experience for Students (IRES) in Microbiology Summer Research Program Participant.** Advisor: Sukathida Ubol Department of Microbiology, Mahidol University; Bangkok, Thailand.

Publications – peer reviewed

* denotes equal contribution

Underlined denotes mentee author

Submitted

24. Cappas V, **Davenport ER**, and Sykes D. *The microbiome and volatile organic compounds reflect the state of decomposition in an indoor environment*. bioRxiv: 10.1101/2022.05.18.492585

2023

23. Gancz AS, Farrer AG, Nixon M, Arriola L, Adler C, **Davenport ER**, Gully N, Cooper A, Britton K, Dobney K, Silverman J, Weyrich L. *Ancient dental calculus reveals novel oral microbiome diversity in pre-Industrialized British people*. Nature Microbiology [accepted]
22. Kelliher JM, Rudolph M, Vangay P, Abbas A, Borton MA, Santistevan C, **Davenport ER**, Davenport DW, Erazo NG, Herman C, Karstens L, Kocurek B, Lutz HL, Myers KS, Ockert I, Rodriguez FE, Saunders JK, Smith ML, Vogtmann E, Windsor A, Wood-Charlson EM, Woodley L, Elloe-Fadrosch EA. *Promoting cohort-based learning for community standards in microbiome research*. Nature Microbiology. 2023;8, 751-753

2022

21. Ryu EP and **Davenport ER**. *Host genetic determinants of the microbiome across animals: from C. elegans to cattle*. Annual Reviews of Animal Biosciences. 2022 10:1, 203-226

2021

20. Jeganathan NA, **Davenport ER**, Yochum GS, Koltun WA. *The microbiome in diverticulitis*. Current Opinion in Physiology. 2021;22
19. Amato KR, Arrieta M, Azad M, Bailey MT, Broussard JL, Bruggeling C, Claud EC, Costello EK, **Davenport ER**, Dutilh BE, Swain Ewald HA, Ewald P, Hanlon EC, Julion WA, Keshavarzian A, Maurice CF, Miller GE, Preidis GA, Ségurel L, Singer BH, Subramanian S, Zhao L, Kuzawa CW. *The Human Microbiome and Health Inequities*. PNAS. 2021;118(25)
18. Marderstein AR, **Davenport ER**, Kulm S, Van Hout C, Elemento O, Clark AG. *Leveraging phenotypic variability to identify genetic interactions in human phenotypes*. American Journal of Human Genetics. 2021;108(1)

2020

17. Nichols RG and **Davenport ER**. *The relationship between the gut microbiome and host gene expression: A review*. Human Genetics.140(5), 747-760 DOI: 10.1007/s00439-020-02237-0

2019

16. Gong X, **Davenport ER**, Wang D, Clark AG. *Lack of spatial and temporal genetic structure of *Anguilla japonica* populations*. Conservation Genetics. 2019;20:467
15. Kachoo P*, Eraso JM*, Beres SB, Olsen RJ, Zhu L, Nasser W, Bernard PE, Cantu CC., Ojeda Saavedra M, José Arredondo M, Strobe B, Do H, Kumaraswami M, Vuopio J, Gröndahl-Yli-Hannuksela K, Kristinsson KG, Gottfredsson M, Pesonen M, Pensar J, **Davenport ER**, Clark AG, Corander J, Caugant DA, Gaini S, Magnusses MD, Porter AR, DeLeoFR, and Musser JM. *Integrated analysis of population genomics, transcriptomics and virulence provides novel insights into Streptococcus pyogenes pathogenesis*. Nature Genetics. 2019;51 548-559

2018

14. Jha AR, **Davenport ER**, Gautam Y, Bhandari D, Tandukar S, Ng K, Holmes S, Prasad Gautam G, Bahadur Sherchand J, Bustamante CD, and Sonnenburg JL. *Gut microbiome transition across a life gradient in Himalaya*. PLoS Biology. 2018;16(11):e2005396 (epub 2018 Nov 15)

2017

13. **Davenport ER***, Sanders JG*, Song SJ, Amato KR, Clark AG, and Knight R. *The human microbiome in evolution*. BMC Biology. 2017. 15:127
12. Goodrich JK, **Davenport ER**, Clark AG, and Ley RE. *The relationship between the human genome and microbiome comes into view*. Annual Reviews Genetics. 2017. 51(1)
11. Igartua C, **Davenport ER**, Gilad Y, Nicolae DL, Pinto J, and Ober C. *Host genetic variation in mucosal immunity pathways influences the upper airway microbiome*. Microbiome. 2017 Feb 1;5:16

2016

10. **Davenport ER**, Goodrich JK, Bell JT, Spector TD, Ley RE, Clark AG. *ABO antigen and secretor statuses are not associated with gut microbiota composition in 1,500 twins*. BMC Genomics. 2016 Nov 21;17:941
9. Beaumont M, Goodrich JK, Jackson MA, Yet I, **Davenport ER**, Vieira-Silva S, Debelius J, Pallister T Mangino M, Raes J, Knight R, Clark AG, Ley RE, Spector TD, and Bell JT. *Heritable components*

of the human fecal microbiome are associated with visceral fat. *Genome Biology*. 2016 Sep 26;17:189

8. Goodrich JK, **Davenport ER**, Beaumont M, Jackson MA, Knight R, Spector TD, Bell JT, Clark AG, and Ley RE. *Genetic determinants of the gut microbiome in UK twins*. *Cell Host and Microbe*. 2016: 19(5), 731-743
7. Goodrich JK*, **Davenport ER***, Waters JL*, Clark AG, and Ley RE. *Cross-species comparisons of host genetic associations with the microbiome*. *Science*. 2016: 352(6285), 532-535
6. **Davenport ER**. *Elucidating the role of the host genome in shaping microbiome composition*. *Gut Microbes*. 2016: 7(2), 178-184
5. Blischak JD, **Davenport ER**, and Wilson G. *A quick introduction to version control with Git and GitHub*. *PLoS Computational Biology*. 2016;12(1):e1004668 (epub 2016 Jan 19)

2015

4. **Davenport ER**, Cusanovich DA, Michelini K, Barrerio LB, Ober C, and Gilad Y. *Genome-wide association studies of the human gut microbiota*. *PLoS One*. 2015;10(11):e0140301 (epub 2015 Nov 3)

-----> *An Editor's Pick for the PLoS Microbiology special collection:*

<http://collections.plos.org/microbiology-picks>

-----> *An Editor's Pick for the PLoS Experimental Biology special collection:*

<http://collections.plos.org/experimental-biology>

2014

3. Zhou X, Cain CE, Myrthil M, Lewellen N, Michelini K, **Davenport ER**, Stephens M, Pritchard JK, and Gilad Y. *Epigenetic modifications are associated with inter-species gene expression variation in primates*. *Genome Biology*. 2014 Dec 3;15(12):547
2. **Davenport ER**, Mizrahi-Man O, Michelini K, Barreiro LB, Ober C, and Gilad Y. *Seasonal variation in human gut microbiome composition*. *PLoS One*. 2014;9(3):e90731 (epub 2014 Mar 11)

2013

1. Mizrahi-Man O, **Davenport ER**, and Gilad Y. *Taxonomic classification of bacterial 16S rRNA genes using short sequencing reads: Evaluation of effective study designs*. *PLoS One*. 2013;8(1):e53608 (epub 2013 Jan 7)

Publications – non-peer reviewed

3. [Ryu EP](#) and **Davenport ER**. *Microbiome: Taming the beasts inside*. eLife 2021;10:e67634
2. **Davenport ER**. *Genetic variation shapes murine gut microbiota via immunity*. Trends in Immunology. 2020;41(1)
1. **Davenport ER**. *Tooth be told, genetics influence oral microbiome*. Cell Host & Microbe. 2017;22(3)

Presentations

Invited Plenary Platform Presentations

- 2020 **Davenport, ER**. *Role of host genetics in shaping the gut microbiota*. Gut Microbiome for Health World Summit. Madrid, Spain [note: presented remotely due to COVID-19]

Invited Platform Presentations

- 2023 **Davenport, ER**. Career Development in Quantitative Genetics and Genomics Mentorship Session. Quantitative Genetics and Genomics Gordon Research Seminar. Ventura, CA
- 2023 **Davenport, ER**. *Associations between microbes and host gene expression reveal physiological insights into host-microbiome interactions*. Quantitative Genetics and Genomics Gordon Research Conference. Ventura, CA
- 2022 **Davenport, ER**. Using human genetics to understand the physiological basis of host microbiome interactions. Inflammatory Bowel Disease (IBD) Research Symposium. Pennsylvania State University College of Medicine. Hershey, PA
- 2022 **Davenport, ER**. *Using the microbiome as a proxy for the environment in genome-wide association studies*. Human Genetic Variation and Disease Gordon Research Conference (HGVD GRC). Manchester, NH [*meeting cancelled]
- 2020 **Davenport, ER**. *Using human genetics to understand the physiological basis of host microbiome interactions*. The Vanderbilt Institute for Infection, Immunology, and Inflammation (VI4) Annual Symposium [*virtual due to COVID-19]
- 2020 **Davenport, ER**. *Using human genetics to understand the physiological basis of host microbiome interactions*. Workshop: Cultivating communities: Making sense of host-microbiome interactions through the lens of genetics. The Allied Genetics Conference (TAGC). Washington DC [*virtual due to COVID-19]

- 2019 **Davenport, ER.** *Causes and consequences of human gut microbiome variation.* One Health Workshop. Pennsylvania State University. State College, PA
- 2019 **Davenport, ER,** Spector TD, Ley RE, and Clark AG. *Simultaneously modeling host genetics and microbiome impact on immune-related traits.* Pennsylvania State University Bioinformatics and Genomics Annual Retreat. State College, PA
- 2018 **Davenport, ER,** Spector TD, Ley RE, and Clark AG. *Simultaneously modeling host genetics and microbiome composition reveals the heritability and proportion of variance explained due to the microbiome for immune-related traits.* Probabilistic Modeling in Genomics (ProbGen). Cold Spring Harbor Labs, NY
* Co-chair of "Cancer, the microbiome, and beyond" session
- 2017 **Davenport ER.** *Role of host genetics in shaping the gut microbiota.* The Human Capital and Economic Opportunity (HCEO) Working Group Conference on The Gut Microbiome in Human Biology and Health: New Opportunities for the Study of Health Disparities. Chicago, IL
- 2017 **Davenport ER.** *The role of host genetics in determining human gut microbiome composition.* The American Association of Physical Anthropologists Annual Meeting. Wiley Invited Podium Symposium - Humans as Holobionts: The Microbiome as a Biological System in Human Evolution. New Orleans, LA.
- 2016 **Davenport ER.** *The role of host genetics in determining human gut microbiome composition.* The 2016 Nordic-North American Symposium on Antimicrobial Resistance and Molecular Population Genomics in Houston, TX.

Platform Presentations

- 2023 **Davenport ER,** Spector TD, Ley RE, and Clark AG. *Using the microbiome as a proxy for host environmental influences in genome-wide association studies.* Microverse Symposium in Jena, Germany
- 2022 **Davenport ER,** Spector TD, Ley RE, and Clark AG. *Using the microbiome as a proxy for host environmental influences in genome-wide association studies.* CSHL Microbiome in Cold Spring Harbor, NY.
- 2017 **Davenport ER,** Spector TD, Ley RE, and Clark AG. *Co-occurrence network modeling reveals disease-specific configurations of microbiome community structure across 2,500 twins.* American Society of Human Genetics Annual Meeting (ASHG) in Orlando, FL.
- 2017 **Davenport ER,** Spector TD, Ley RE, and Clark AG. *Modeling human gut microbiome community structure across healthy and diseased states in 2,500 twins.* Society of Molecular Biology and Evolution Annual Meeting (SMBE) in Austin, TX.

- 2017 **Davenport ER**, Spector TD, Ley RE, and Clark AG. *Modeling human gut microbiome community structure across healthy and diseased states in 2,500 twins*. Biology of Genomes (BoG) in Cold Spring Harbor, NY.
- 2012 **Davenport ER**, Mizrahi-Man O, Barreiro LB, Ober C, and Gilad Y. *Examining the roles of diet, age, and sex on the composition of the human fecal microbiome*. University of Chicago Molecular Biosciences Cluster Retreat in Galena, IL.

Poster presentations

- 2023 **Davenport ER**, Kirven K, and Tran H. SCiMS: Sex calling from metagenomic samples. American Society of Human Genetics Annual Meeting (ASHG) in Washington, DC.
- 2015 **Davenport ER**, Goodrich JK, Bell JT, Spector TD, Ley RE, and Clark AG. *ABO antigen and secretor status are not associated with gut microbiota composition*. American Society of Human Genetics Annual Meeting (ASHG) in Baltimore, MD.
- 2014 **Davenport ER**, Mizrahi-Man O, Michelini K, Barreiro LB, Ober C, and Gilad Y. *poopQTLs: Genome-wide associations of the human gut microbiota*. Society for Molecular Biology and Evolution Annual Meeting (SMBE) in San Juan, PR.
- 2013 **Davenport ER**, Mizrahi-Man O, Michelini K, Barreiro LB, Ober C, and Gilad Y. *Temporal variation in human gut microbiome composition in the Hutterites*. American Society of Human Genetics Annual Meeting (ASHG) in Boston, MA.
- 2013 **Davenport ER**, Mizrahi-Man O, Michelini K, Barreiro LB, Ober C, and Gilad Y. *Examining the temporal stability of the fecal microbiome in an isolated, founder population*. Cell Symposium: the Microbiome and Host Health in Lisbon, Portugal.
- 2012 **Davenport ER**, Mizrahi-Man O, Barreiro LB, Ober C, and Gilad Y. *Examining the roles of diet, age, and sex on the composition of the human fecal microbiome*. American Society of Human Genetics Annual Meeting (ASHG) in San Francisco, CA.
- 2012 **Davenport ER**, Mizrahi-Man O, Barreiro LB, Ober C, and Gilad Y. *Examining the genetic basis of interindividual variation in the human fecal microbiome*. International Human Microbiome Conference in Paris, France.
- 2011 Yao T, **Davenport ER**, Poroyko V, Liu D, Lemanske R, Gern J, Ober C, Jackson D, Gilad Y, Pinto J. *The nasal microbiome and development of asthma in a birth cohort*. Biology of Genomes (BoG) in Cold Spring Harbor, NY.

Invited Seminars

- 2023 Department of Biology, Brigham Young University
Department of Biology, University of Utah

Department of Biology, West Chester University
 Rutgers University Microbiome Program, Rutgers University
 Balance of the Microverse Cluster of Excellence, Friedrich Schiller University Jena, Germany
 MCIBS Graduate Program Retreat, Pennsylvania State University
 Center of Genetic Epidemiology, University of Southern California

2022 ProK Seminar Series, University of Pennsylvania
 Your Researcher Live, Researcher (online)

2021 MCIBS Graduate Program Retreat, Pennsylvania State University
 UGA Interdepartmental Health Disparities Working Group, University of Georgia
 Department of Biology, Trinity University
 Department of Human Genetics, University of Chicago
 Department of Cellular and Molecular Medicine, University of Arizona
 Gut Interest Group, Penn State University College of Medicine
 Microbiome Seminar Series, Penn State Microbiome Center, PSU

2020 Department of Public Health Sciences, Penn State College of Medicine
 Department of Biology, Vanderbilt University [cancelled because of COVID-19]
 Department of Human Genetics, UCLA [cancelled because of COVID-19]
 Department of Human Genetics, University of Chicago [cancelled because of COVID-19]

2019 Penn State Microbiome Center Exchange, Penn State College of Medicine
 Department of Biology, Duke University
 Department of Nutrition, Pennsylvania State University
 Department of Biology, University of New Mexico
 Department of Biology, Marquette University
 Department of Biology, Auburn University
 Department of Biology, Pennsylvania State University

2018 Max Planck Institute for Developmental Biology
 Department of Biology, Bucknell University
 Department of Biology, Barnard College
 Department of Biology, Smith College

2017 Department of Biology, Wake Forest University

2016 The Huck Institutes of the Life Sciences, Pennsylvania State University

2013 Department of Biology, Chicago State University

Funding

Current

- 2022 – 2027 **R35 NIGMS/NIH (Award #R35GM146980)** (\$1,938,350)
Characterizing human-microbiome interactions via molecular and functional genomic approaches
 Role: PI
 Supplement awarded (2023): **3R35GM146980-02S1** (\$105,819)
- 2022 – 2023 **Interdisciplinary Innovation Fellowship**, Microbiome Center, Penn State (\$5000)

Trainee-led

- 2021 – 2023 **T32 (Award #T32GM102057)**
 Computation, Bioinformatics, and Statistics (CBIOS) Training Program
 Appointee: Nicholas Locatelli, Biology PhD Program
 Role: Co-mentor; Primary Mentor: Iliana Baums
- 2021 – 2023 **T32 (Award #T32GM102057)**
 Computation, Bioinformatics, and Statistics (CBIOS) Training Program
 Appointee: Erica Ryu, Biology PhD Program
 Role: Mentor
- 2020 – 2023 **USDA NIFA (Award #2020-67034-31764)** (\$165,000)
Investigating the effects of chronic, dietary, and environmentally relevant doses of chlorpyrifos on the gut microbiome of mice
 PI: Robert Nichols
 Role: Co-sponsor. Sponsor: Andrew Patterson

Completed

- 2023 **Microbiome Center Shared Resource Proposal**; total: \$30,000
 Microbiome Center, Penn State
Unique dual indexes to drive microbiome sequencing at PSU
 PIs: Jordan Bisanz, Justin Silverman, Erika Ganda, and Emily Davenport
- 2022 **USDA Conference Grant (Award #2022-67019-36985)**; total: \$50,000
Changing Microbiomes: A symposium hosted by the Microbiome Center at the Pennsylvania State University

PI: Liana Burghardt
Role: Co-investigator

- 2022 **DOE Conference Grant (Award #DE-SC0022552)**; total: \$10,000
Changing Microbiomes: A symposium hosted by the Microbiome Center at the Pennsylvania State University
PI: Estelle Couradeau
Role: Co-investigator
- 2016 – 2019 **F31 NIDDK/NIH (Award #F32DK109595)**; total: \$173,089
NIH Ruth L. Kirschstein National Research Service Award (NRSA)
Modeling human gut microbiome community structure in healthy and disease states
Role: PI
- 2017 Genetics Society of America (GSA) DeLill Nasser Travel Award for Professional Development in Genetics; total: \$1,000
- 2014 University of Chicago Biological Sciences Division Travel Award; total: \$1,000
- 2010 – 2012 NIH Genetics and Regulation Training Grant T32 appointee (University of Chicago – 2 years of stipend support and tuition)
- 2011 University of Chicago Digestive Diseases Research Core Center (DDRCC) Pilot and Feasibility award (written by ER Davenport to support dissertation research, submitted by Y. Gilad); total: \$20,000

Teaching Experience

University Courses – Instructor of Record

- 2020 – Penn State University, Department of Biology, *BIOL439: Practical Bioinformatics* (~25 students)
- 2020 – Penn State University, Department of Biology, *PSU16: First Year Seminar* (~30 students)

Teaching Assistantships

- 2014 University of Chicago, Biological Sciences Division: *HGEN 47300: Genomics and Systems Biology* (Taught 6 lectures)
- 2011 University of Chicago, Biological Sciences Division: *HGEN 47000: Human Genetics I*
- 2011 University of Chicago, Biological Sciences Division: *HGEN 47300: Genomics and Systems Biology*
- 2010 University of Chicago, Biological Sciences Division: *MGCB 31400: Genetic Analysis of Model Organisms*

Guest Lectures

| | |
|------------|---|
| 2020; 2022 | Penn State University, Anthropology ANTH497: <i>Microbial Insights into Anthropology – “Microbiome studies in the Hutterites”</i> |
| 2016 | Cornell University, Molecular Biology and Genetics: BIOMG 4870: <i>Human Genomics – “Cystic Fibrosis and PKU”</i> |
| 2016 | Cornell University, Biological Sciences: BIOMI 3210: <i>Human Microbes and Health – “Microbiome studies in the Hutterites”</i> |
| 2016 | Pennsylvania State University, Biochemistry and Molecular Biology: BMB 484: <i>Functional Genomics – “Introduction to Population Genetics”</i> |
| 2015 | Cornell University, Molecular Biology and Genetics: BIOMG 4870: <i>Human Genomics – “Linkage disequilibrium mapping, or Genome-wide Association Studies (GWAS)”</i> |
| 2011 | University of Chicago, Biological Sciences Division: HGEN 47000: <i>Human Genetics I – “Human genome structure and variation”</i> |

Workshops

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|--------|--|
| 2020 – | Instructor – “Microbiome Center Kick-Start Workshop”, Penn State, Huck Institutes of the Life Sciences, Microbiome Center |
| 2023 | Instructor – “Git and GitHub”, Penn State, Huck Institutes of the Life Sciences, Microbiome Center |
| 2022 | Instructor – “NMDC Metadata Standards Workshop”, Changing Microbiomes Symposium, Penn State |
| 2021 | Instructor – “Git and GitHub”, Penn State, Huck Institutes of the Life Sciences, Microbiome Center |
| 2019 | Instructor – “Introduction to Statistics with R”, Max Planck Institute for Developmental Biology; Tübingen, Germany |
| 2016 | Instructor – “Learn about Git and Github”, Cornell University, CPGSA |
| 2016 | Instructor – “Introduction to R”, University of Chicago, Biological Sciences Division |

Software Carpentry Workshops [content I taught]

| | |
|------|---|
| 2017 | Lead Instructor , TGen, Phoenix, AZ (June) [R and version control with Git] |
| 2016 | Instructor , University of Chicago, Biological Sciences Division (September) [review of shell and R, writing reproducible reports, and version control with Git] |
| 2016 | Lead Instructor , Cornell University, Department of Molecular Biology and Genetics (August) [version control with Git] |
| 2015 | Instructor , University of Chicago, Biological Sciences Division (September) [review of shell and R, writing reproducible reports, and version control with Git] |
| 2015 | Instructor , Pennsylvania State University (June) [shell and version control with Git] |

2014 **Instructor**, University of Chicago, Biological Sciences Division (September) [version control with Git]
 2014 **Lead Instructor**, University of Toronto (July) [version control with Git]
 2013 **Instructor**, University of Chicago, Biological Sciences Division (September) [shell]
 2013 **Instructor**, University of Chicago. (June) [shell]

Data Carpentry Workshops [content I taught]

2016 **Instructor**, Cornell University (June) [reproducible reports with Rmarkdown and R programming]
 2015 **Instructor**, Cornell University (January) [automating repetitive tasks with command line shell]

Mentorship and Advising

Undergraduate Student Advising (Primary Advisor)

| Years | Name | Institution | Program |
|-------------|-------------------|-------------|---|
| 2023 – | Patricia Brocious | PSU | Shreyer Honor's College; Biology |
| 2023 – | Steven Kadavil | PSU | Computer Science |
| 2023 – | Evan Lloyd | PSU | Biology |
| 2021 – | Meera Gupta | PSU | Accelerated Premedical-Medical Program ---> Awarded an Eberly College of Science Research Award (2022) |
| 2022 – 2023 | Shivani Kumar | PSU | Biology |
| 2021 – 2023 | Aureo Zanon | PSU | Biology and Statistics, minor in Math ---> Awarded an Erickson Discovery Grant (2022) |
| 2022 | Mansi Chandra | Juniata | Bioinformatics |
| 2022 | Shanisha McGuire | PSU | Biochemistry and Molecular Biology |
| 2021 | Kyrah Williams | PSU | Biology, Millennium Scholar |
| 2021 – 2022 | Jovial Joseph | PSU | Accelerated Premedical-Medical Program ---> Awarded an Eberly College of Science Research Award (2021) |
| 2021 | Yiyan Zhang | PSU | Statistics – Biostats, Math – Systems Analysis |
| 2021 | Sean O'Rourke | PSU | Biology – Neuroscience |
| 2018 | Adon Chowdhury | Cornell | Biometry and Statistics |
| 2017 – 2018 | Trang Dau | Cornell | Human Biology, Health, & Society |
| 2015 – 2017 | Monica Guardado | PSU | Biology ---> Awarded an American Society of Microbiology (ASM) Research Capstone Fellowship (2017) |

Graduate Student Advising (Primary Advisor)

| Years | Name | Institution | Program |
|--------|--------------------|-------------|--|
| 2022 – | Nicholas Locatelli | PSU | Biology *co-advised with Iliana Baums ---> NIH T32 CBIOS Training Grant Appointee (2021 - 2022) ---> Awarded the Dr. John Randall Shuman Troxell Memorial Scholarship in Biology (2023) |
| 2022 – | Naomi Huntley | PSU | Biology ---> Awarded the Microbiome Center Data Analysis Leadership Fund (2022) |
| 2022 – | Polina Tikhonova | PSU | Bioinformatics and Genomics |
| 2020 – | Erica Ryu | PSU | Biology ---> Awarded the Dr. John Randall Shuman Troxell Memorial Scholarship in Biology (2022) ---> Awarded the J. Ben and Helen D. Hill Memorial Fund Award (2022) ---> Awarded an NSF GRFP Honorable Mention (2021) ---> NIH T32 CBIOS Training Grant Appointee (2021 - 2022) |

Postdoc and Scientist Advising (Primary Advisor)

| Years | Name | Type | Institution | Program |
|-------------|----------------|--------------------------|-------------|--|
| 2023 – | Robert Nichols | Asst. Research Professor | Penn State | Biology |
| 2020 – 2023 | Robert Nichols | Postdoc | Penn State | Biology ---> Awarded a USDA NIFA Postdoctoral Fellowship (2020) |
| 2020 – 2022 | Nur Shahir | Postdoc | Penn State | Biology |
| 2016 – 2017 | Xiaoling Gong | Scientist | Cornell | MBG |

Rotation Advisor

| Year | Program | Name(s) |
|------|--|---|
| 2023 | Molecular, Cellular, & Integrative Biosciences Biology | Hanh Tran, Jiwoo Kim Stephanie Won |
| 2022 | Biology | Naomi Huntley, Nicholas Locatelli |
| 2021 | Bioinformatics and Genomics Biology Molecular, Cellular, & Integrative Biosciences Biochemistry, Microbiology, and Molec. Biology | Kobie Kirven, Polina Tikhonova Annamaria Calderon Cassandra Whitmoyer Anh Pham |
| 2020 | Bioinformatics and Genomics | Kyle McGovern |
| 2019 | Biology | Erica Ryu |

Other

| Year | Name | Position |
|------|--------------|--|
| 2023 | Bineyam Taye | Visiting Professor from Colgate University |

Dissertation Committee Member

| Defended | Deg. | Name | University | Department/Program |
|-------------|-------|---------------------|--|-----------------------------------|
| In progress | Ph.D. | Tayyaba Alvi | The Leibniz Institute on Aging – (FLI) | Leibnitz Graduate School on Aging |
| In progress | Ph.D. | Shreya Ramachandran | University of Chicago | Human Genetics |
| In progress | Ph.D. | Scott Eckert | Penn State | Bioinfo. and Genomics |
| In progress | M.S. | Julia Stewart | Penn State | Biology |
| In progress | Ph.D. | Sterling Wright | Penn State | Anthropology |
| In progress | Ph.D. | Lan-Nhi Phung | Penn State | Biology |
| In progress | Ph.D. | Jennifer Harris | Penn State | Ecology |
| In progress | Ph.D. | Susan Tian | Penn State | BMMB |
| 2023 | Ph.D. | Jeremy Sutherland | Penn State | Bioinfo. and Genomics |
| 2022 | M.S. | Miranda DePriest | Penn State | Plant Path. and Env. Micro. |
| 2022 | MPS | Veronica Capps | Penn State | Forensic Science |
| 2022 | Ph.D. | Lixiang Zhang | Penn State | Statistics |
| N/A | Ph.D. | Katrin Peterson | Penn State | BMMB |
| N/A | M.S. | Nellie Heitzman | Bucknell University | Biology |

Qualifying Exam Committee Member

| Year | Program | Students |
|------|-----------------------------|---------------------------------|
| 2023 | Bioinformatics and Genomics | Salaar Khan |
| 2022 | Bioinformatics and Genomics | Avantika Diwadkar |
| 2021 | Bioinformatics and Genomics | Corrine Smolen |
| | MCIBS | Sofia Kenney |
| 2020 | Bioinformatics and Genomics | Jeremy Sutherland, Shaopeng Liu |

Academic Honors

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|------|--|
| 2007 | Graduated with comprehensive honors: honors in Bacteriology and the liberal arts (University of Wisconsin – Madison) |
| 2004 | Dean's List (University of Wisconsin – Madison) |
| 2003 | William F. Vilas Scholarship (University of Wisconsin – Madison) |

Professional Development

| | |
|-------------|---|
| 2021 | Safer People Safer Places Transgender and Gender Inclusion 101 – Penn State University |
| 2020 | Becoming an Active Witness who Hears, Sees, Feels, and Does active bystander training – Penn State University |
| 2019 | Mentoring Matters Workshop – Eberly College of Science, Penn State University |
| 2017 – 2018 | Cornell Center for Teaching Excellence GET SET teaching and learning workshops completed: <ul style="list-style-type: none">- An Integrated Course Design Approach to Planning Your Class- Tips on Writing a Strong Teaching Philosophy Statement- Integrating Technology into Your Classroom- Developing Service-Learning in the Disciplines- Flipping the Classroom as a TA- Using Your Research Experience to Improve Your Teaching- Holding Effective Office Hours- Teaching and Mentoring Across Differences- Leading a Discussion in an Online Classroom |
| 2017 | Assessing Learning and Teaching certificate – Cornell University Center for Teaching Innovation. Workshops included: <ul style="list-style-type: none">- Designing Learning Outcomes for Your Course- Utilizing Classroom Assessment Techniques to Evaluate Student Learning- Developing Rubrics for Effective Grading |
| 2017 | Creating an Engaging Classroom certificate – Cornell University Center for Teaching Innovation <ul style="list-style-type: none">- Building a Collaborative Learning Environment- Using Theater Techniques to Enhance Your Teaching- Engaging Students in Quantitative Courses |
| 2016 | The Practice of Inclusive Teaching in STEM certificate – Cornell University Center for Teaching Excellence |
| 2016 | Building Mentoring Skills for an Academic Career certificate program – Cornell University Center for the Integration of Teaching and Learning (CU-CIRTL) |
| 2015 - 2016 | Postdoc Leadership Certificate Program – Cornell University |
| 2014 | Certificate in University Teaching – University of Chicago Center for Teaching and Learning |
| 2013 | Software Carpentry Instructor training – Software Carpentry |

Professional Affiliations

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| 2017 – | Genetics Society of America (GSA) |
| 2014 – | Society for Molecular Biology and Evolution (SMBE) |
| 2012 – | American Society of Human Genetics (ASHG) |
| 2017, 2022 – | American Society for Microbiology (ASM) |
| 2019 – 2022 | Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) |
| 2017 | American Association of Physical Anthropologists (AAPA) |
| 2016 – 2019 | National Postdoc Association (NPA) |
| 2011 – 2018 | American Association for the Advancement of Science (AAAS) |

Outreach

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| Speaker | (2023) “Unlocking the Hidden Universe Within: Exploring the Astonishing World of the Human Microbiome”; Foxdale Village Retirement Community |
| Speaker | (2022) Investigating Careers and Networking (iCAN) Speaker Series-“Establishing your Academic Research Career”; Johns Hopkins University |
| Interview | (2022) Penn State’s Center for Human Evolution and Diversity Tracking traits podcast: <i>A Geneticists Approach to Human Microbiomes</i> : https://trackingtraits.buzzsprout.com/1762618/11778386-a-geneticist-s-approach-to-human-microbiomes?t=0 |
| Panelist | (2021) Microbiome Center Consortium Seminar Series NMDC Ambassadors Forum |
| Advocate | (2021) American Society of Human Genetics Hill Day advocate |
| Interview | (2020) Eberly College of Science “Hey! I Got a Question About That” podcast on the microbiome: https://www.youtube.com/watch?v=960zTLUD7VU&t=881s |
| Advocate | (2019) Rally for Medical Research Hill Day advocate, representing American Society of Human Genetics |
| Reviewer | (2015 -) American Society of Human Genetics (ASHG) DNA Day Essay Judge |
| Member | (2015 - 2018) Genetics Education and Outreach Network (GEON) |

Leadership and Service

Departmental

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| 2023 – | Member – Biology Climate and Diversity Committee, Department of Biology, PSU |
| 2020 – | Member - Biology Seminar Series Organizing Committee, Department of Biology, |

PSU

- 2020 - 2023 **Member** - Biology Graduate Admissions Committee, Department of Biology, PSU
- 2010 - 2013 **Representative** - Molecular Biosciences organizational committee: student Representative from the Department of Human Genetics on orientation week, annual molecular biosciences retreat, and recruitment organizing committees, Department of Human Genetics, University of Chicago

Institutional

- 2023 **Member** – MCIBS Qualifying Exam Committee
- 2021 – 2022 **Member** – Institute for Computational and Data Sciences (ICDS) Coordinating Committee
- 2021 – 2022 **Co-chair** – “Changing Microbiomes” Conference Organizing Committee
- 2021 **Member** – Microbiome Center Director Search Advisory committee, Huck Institutes of the Life Sciences, PSU
- 2021 **Invited Panelist** - “First Years as Faculty in STEM” GRADUCon, University of Chicago
- 2020 – 2021 **Grant reviewer** - Penn State and University at Buffalo Clinical and Translational Science Pilot Award Program
- 2018 **Member** - Consensual Relationships Policy Committee – Postdoc representative, Cornell University. See <http://theuniversityfaculty.cornell.edu/news/consensual-relationships-policy-committee/> for details.
- 2017 – 2018 **Cofounder & Organizer** - Postdoc Fellow Invited Lecture in Research and Career Development series. Department of Molecular Biology, Cornell University
- 2016 – 2018 **Member** - Cornell University Postdoctoral Advisory Council
- 2016 – 2017 **Reviewer** - Sigma Xi Grants-In-Aid of Research, Cornell University

National/International

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| 2015 – | Reviewer - | Cell Host & Microbe | Genome Biology |
| | Annals of Applied Statistics | Cell Reports | Genome Research |
| | American Journal of Primatology | Communications Biology | Genomics, Proteomics, and Bioinformatics |
| | Applied and Environmental Microbiology (AEM) | Critical Reviews in Microbiology | Gut Microbes |
| | BMC Genomics | Diabetologia | Journal of Allergy and Clinical Immunology (JACI) |
| | Cell | eLife | Journal of Evolutionary Biology |
| | | Environmental Microbiology | |
| | | Genes | |

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| JoVE | Nature Microbiology | Science |
| Microbial Ecology | npj Biofilms and Microbiomes | Scientific Reports |
| Microbiome | | Thorax |
| Microorganisms | PLoS Genetics | Trends in Genetics |
| mSystems | PLoS ONE | Trends in Immunology |
| Nature Communications | PNAS | |

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| 2023 | Member – NIH MRAF study section |
| 2023 | Member – National Microbiome Data Collaborative (NMDC) Ambassador Selection Committee |
| 2022 – 2025 | Member – Genetics Society of America DeLill Nasser Award Selection Committee |
| 2022 | Grant Reviewer – Swiss National Science Foundation |
| 2021 | Grant Reviewer – NIH GCAT study section, Early Career Reviewer Program |
| 2021 – 2022 | Ambassador – National Microbiome Data Collaborative (NMDC) |
| 2020 – 2021 | Co-chair - American Society of Human Genetics (ASHG) Career Development Committee (CDC) |
| 2019 – 2021 | Abstract Reviewer - SACNAS research presentation abstracts (Life Sciences) |
| 2019 – 2021 | Abstract Reviewer - SACNAS Travel Scholarships (Life Sciences) |
| 2019 – | Board Member - Cards Against Humanity Science Ambassador Scholarship Program |
| 2018 – | Member - Federation of American Societies for Experimental Biology (FASEB) Training & Career Opportunities Subcommittee |
| 2015 – | Judge – ASHG DNA Day Essay Contest |
| 2020 – 2022 | Grant Reviewer - National Science Foundation (NSF) |
| 2018, 2020 | Grant Reviewer - Wellcome Trust Investigator Award in Science |
| 2020 | Moderator - The Allied Genetics Conference (TAGC) platform session: Disease Models and Aging (Mammal) *TAGC 2020 was held virtually due to COVID-19 |
| 2019 | Incoming Chair - American Society of Human Genetics (ASHG) Training and Development Committee |
| 2019 | Moderator - American Society of Human Genetics (ASHG) Annual Meeting platform session: Gene Expression Variation Across Diverse Global Populations |
| 2019 | Abstract Reviewer - ASHG Annual Meeting abstracts (Bioinformatics and Computational Approaches) |
| 2017 – 2019 | Member - American Society of Human Genetics (ASHG) Training and Development (TDC) Committee |
| 2017 | Moderator - Academic Career Panel at the American Society of Human Genetics Annual Meeting (ASHG) |
| 2011, 2012, 2014 | Judge - Annual Chicago Public Schools Student Science fair |
| 2011 - 2014 | Judge - Annual Chicago Area Undergraduate Research Symposium (CAURS) |