Patrick Finn Horve
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Education:

2021 – Present University of Oregon, Eugene, Oregon
Ph.D in Molecular Biology
Supervisor: Dr. Karen Guillemin, PhD

2015 – 2019 University of Oregon, Eugene, Oregon
B.S. in Biology with an emphasis in Molecular, Cellular, and Developmental Biology and minors in Chemistry and Music

Honors, Awards, and Funding:

2026 Pete von Hippel Graduate Scholar Award

2025 – Present NIH Ruth L. Kirschstein NRSA Predoctoral Fellow (F31)

2025 Knight Campus Graduate Mentor, Phil and Penny Knight Campus for Accelerating Scientific Impact

2025 NIH R01DK140447 (NIDDK; PI: K. Guillemin) – contributed preliminary data and figures

2025 NIH R61AT013374 (NCCIH; PI: K. Guillemin) – contributed figures

2025 Horizon Award (Dorothy Jones Diversity & Inclusion Achievement Award), Applied Microbiology International – awarded to the Microbes and Social Equity Working Group; Board of Directors member

2024 Diabetes Research Connection Research Fundee (Declined)

2024 Western Region Islet Study Group, Best Presentations Honorable Mention

2023 Raymond-Stevens Technical Skills Training Awardee

2022 – 2024 NIH T32 Genetics Training Program Appointment, University of Oregon

2022 Borgen Adamson Memorial Scholarship

2021 University of Oregon Innovation Award

2020 NSF #2025483, Understanding the Rules of Life ($325,000; 2020 – 2023), "Collaborative Research: MTM1: Microbial Genomic, Transcriptomic, and Survival Response to Common Built Environment Lighting" – contributed to conception and writing

Research and Professional Experience:

2022 – Present PhD Candidate, Guillemin Laboratory, University of Oregon

2021 – 2022 PhD Student, Guillemin Laboratory, University of Oregon

2019 – 2021 Research Assistant, Biology and the Built Environment Center, University of Oregon

2019 – 2020 Research Technician, Westerfield Laboratory, University of Oregon

2018 – 2019 Undergraduate Research Assistant, Biology and the Built Environment Center, University of Oregon

Teaching:

2026 European Molecular Biology Organization Practical Course Instructor
"Computation and experimental microbiomics"

2022 BI 330: Microbiology, University of Oregon, Graduate Teaching Assistant

2022 BI 331: Microbiology Laboratory, University of Oregon, Graduate Teaching Assistant

2021 BI 322: Cell Biology, University of Oregon, Graduate Teaching Assistant

2022 BI 326: Immunology and Infectious Disease, University of Oregon, Graduate Teaching Assistant

Mentoring:

2025 – 2026 Prerana Thilavalli, Undergraduate Researcher

2024 – 2026 Ella Fliesler, Undergraduate Researcher; 2025 University of Oregon Knight Campus Undergraduate Scholar

Professional Memberships:

2024 – Present Board of Directors, Microbes and Social Equity Working Group

2022 – 2023 Director of Resource Archiving, Microbes and Social Equity Working Group

2019 – Present Member, Microbes and Social Equity Working Group

2018 – Present Member, American Society for Microbiology

Service:

Ongoing Peer reviewer for PLOS ONE, mSystems, and Architectural Engineering and Design Management

Software:

2022 Nucleotide Essentials – A collection of tools for working with DNA sequencing data in Julia

Publications (in reverse chronological order):

1. Olsen Martinez, A., Dietz, L.G., Parhizkar, H., Kaya, D., Northcutt, D., Horve, P.F., Stenson, J., Harry, M., Mickle, D., Jaaf, S., Hachimi, O., Kanalos, C., Martinotti, I., Bowles, G., Fretz, M., Kelly, C., Radniecki, T.S., Van Den Wymelenberg, K. (2025). Air, surface, and wastewater surveillance of SARS-CoV-2; a multimodal evaluation of COVID-19 detection in a built environment. *Journal of Exposure Science & Environmental Epidemiology*.

2. Mhuireach, G.A., Collins, S., Dietz, L., Horve, P.F., Laguerre, A., Northcutt, D., Stenson, J., Van Den Wymelenberg, K., Gall, E., & Fretz, M. (2025). Effects of wetting events on mass timber surface microbial communities and VOC emissions: implications for building operation and occupant well-being. *Frontiers in Microbiomes*, 4, 1395519. https://doi.org/10.3389/frmbi.2025.1395519

3. Massaquoi, M. S., Kong, G. L., Chilin-Fuentes, D., Ngo, J. S., Horve, P. F., Melancon, E., ... & Guillemin, K. (2023). Cell-type-specific responses to the microbiota across all tissues of the larval zebrafish. *Cell Reports*, *42*(2).

4. Unger, K., Dietz, L., Horve, P., Van Den Wymelenberg, K., Lin, A., Kinney, E., & Kea, B. (2022). Evaluating fomite risk of brown paper bags storing personal protective equipment exposed to SARS-CoV-2: A quasi-experimental study. *PloS one*, *17*(8), e0273433.

5. Horve, P. F., Dietz, L. G., Bowles, G., MacCrone, G., Olsen-Martinez, A., Northcutt, D., ... & Van Den Wymelenberg, K. G. (2022). Longitudinal analysis of built environment and aerosol contamination associated with isolated COVID-19 positive individuals. *Scientific Reports*, *12*(1), 7395.

6. Parhizkar, H., Dietz, L., Olsen-Martinez, A., Horve, P.F., Barnatan, L., Northcutt, D. and Van Den Wymelenberg, K.G., 2022. Quantifying environmental mitigation of aerosol viral load in a controlled chamber with participants diagnosed with coronavirus disease 2019. *Clinical Infectious Diseases*, *75*(1), pp.e174–e184.

7. Robinson, J.M., Redvers, N., Camargo, A., Bosch, C.A., Breed, M.F., Brenner, L.A., Carney, M.A., Chauhan, A., Dasari, M., Dietz, L.G. and Friedman, M., 2022. Twenty important research questions in microbial exposure and social equity. *Msystems*, *7*(1), pp.e01240-21.

8. Ishaq SL, Parada FJ, Wolf PG, Bonilla CY, Carney MA, Benezra A, Wissel E, Friedman M, DeAngelis KM, Robinson JM, Fahimipour AK,Manus MB, Grieneisen L, Dietz LG, Pathak A, Chauhan A, Kuthyar S, Stewart JD, Dasari MR, Nonnamaker E, Choudoir M, Horve PF, Zimmerman NB, Kozik AJ, Darling KW,Romero-Olivares AL, Hariharan J, Farmer N, Maki KA, Collier JL, O'Doherty KC, Letourneau J, Kline J, Moses PL, Morar N,2021.Introducing the Microbes and Social Equity Working Group: Considering the Microbial Components of Social, Environmental, and Health Justice. mSystems6:10.1128/msystems.00471-21.https://doi.org/10.1128/msystems.00471-21

9. Horve, P.F., Dietz, L., Northcutt, D., Stenson, J. and Van Den Wymelenberg, K., 2021. Evaluation of a bioaerosol sampler for indoor environmental surveillance of Severe Acute Respiratory Syndrome Coronavirus 2. *PLoS One*, *16*(11), p.e0257689.

10. Mhuireach, G.Á., Dietz, L., Griffiths, W., Horve, P.F., Laguerre, A., Northcutt, D., Vandegrift, R., Gall, E. and Van Den Wymelenberg, K., 2021. Differing effects of four building materials on viable bacterial communities and VOCs. *Developments in the Built Environment*, *7*, p.100055.

11. Horve, P.F., Dietz, L.G., Fretz, M., Constant, D.A., Wilkes, A., Townes, J.M., Martindale, R.G., Messer, W.B. and Van Den Wymelenberg, K.G., 2021. Identification of SARS-CoV-2 RNA in healthcare heating, ventilation, and air conditioning units. *Indoor Air*, *31*(6), pp.1826-1832.

12. Dietz, L., Constant, D.A., Fretz, M., Horve, P.F., Olsen-Martinez, A., Stenson, J., Wilkes, A., Martindale, R.G., Messer, W.B. and Van Den Wymelenberg, K.G., 2021. Exploring Integrated Environmental Viral Surveillance of Indoor Environments: A comparison of surface and bioaerosol environmental sampling in hospital rooms with COVID-19 patients. *medRxiv*, pp.2021-03.

13. Hermesch, A.C., Horve, P.F., Edelman, A., Dietz, L., Constant, D., Fretz, M., Messer, W.B., Martindale, R. and Van Den Wymelenberg, K., 2020. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) environmental contamination and childbirth. *Obstetrics and gynecology*, *136*(4), p.827.

14. Horve, P.F., Dietz, L.G., Ishaq, S.L., Kline, J., Fretz, M. and Van Den Wymelenberg, K.G., 2020. Viable bacterial communities on hospital window components in patient rooms. *PeerJ*, *8*, p.e9580.

15. Dietz, L., Horve, P.F., Coil, D.A., Fretz, M., Eisen, J.A. and Van Den Wymelenberg, K., 2020. 2019 novel coronavirus (COVID-19) pandemic: built environment considerations to reduce

transmission. *Msystems*, *5*(2), pp.e00245-20. Co-first author (Dietz and Horve contributed equally; byline ordered alphabetically).

16. Velazquez, S., Griffiths, W., Dietz, L., Horve, P., Nunez, S., Hu, J., Shen, J., Fretz, M., Bi, C., Xu, Y. and Van Den Wymelenberg, K.G., 2019. From one species to another: A review on the interaction between chemistry and microbiology in relation to cleaning in the built environment. *Indoor Air*, *29*(6), pp.880-894.

17. Horve, P.F., Lloyd, S., Mhuireach, G.A., Dietz, L., Fretz, M., MacCrone, G., Van Den Wymelenberg, K. and Ishaq, S.L., 2020. Building upon current knowledge and techniques of indoor microbiology to construct the next era of theory into microorganisms, health, and the built environment. *Journal of Exposure Science & Environmental Epidemiology*, *30*(2), pp.219-235.

Selected Presentations:

2024 Horve, P.F., Massaquoi, M.S., Sweeney, E.G., Guillemin, K. "Beta-cell Expansion Factor A (BefA) Promotes β-cell Proliferation and Maturation." Selected Speaker, Western Region Islet Study Group, Asilomar, CA. October 2024.

2024 "Image Segmentation with CellPose." University of Oregon Image Analysis Workshop. July 18, 2024.

2022 Horve, P.F., Hampton-Hill, J., Sconce Massaquoi, M., Goers Sweeney, E., Wall, E.S., Guillemin, K. "Bacterial secreted BefA protein disrupts cellular membranes and stimulates pancreatic β-cell expansion." American Society for Microbiology Northwest Branch Meeting, Spokane, WA. November 2022.

2020 "Microbiology and the Built Environment." Yale Occupational and Environmental Medicine Guest Lecture Series (virtual), co-presented with Dr. Kevin Van Den Wymelenberg. November 3, 2020.