

# Hannah Whitehurst

PhD Candidate, University of Chicago

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## EDUCATION

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### Doctor of Philosophy in Ecology and Evolution

scheduled Aug 2023

University of Chicago *Chicago, IL*

Advisor: Professor Joy Bergelson

### Bachelor of Arts, Cum Laude

May 2012

Whittier College *Whittier, CA*

Study abroad, Fergusson College *Pune, India*

2010

## SKILLS

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**Wet lab:** Liquid handler automation, genetic modification of organisms, microbiology, sterile techniques, PCR, qPCR, primer design, Illumina chemistry and instrumentation.

**Computational:** R, python, HPC, Geneious, NGS analysis tools (e.g. BBtools, samtools), data visualization (Shiny, ggplot), Confluence, bash, git

## EXPERIENCE

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### University of Chicago *Chicago, IL*

Aug 2016 – Aug 2023

PhD candidate (MS received 2018)

Developed a model incorporating microbial network data to improve estimations on host-microbe effects. Personally sequenced and analyzed 1000 complex microbiome communities, 6000 amplicon, and 200 whole genomes using Illumina technology. Designed and executed high-throughput wet-lab and computational protocols, including; bacteria isolate collection, DNA extraction, high complexity sequencing primers, liquid handler automation workflows, sample QC, and subsequent statistical analysis.

### New York University *New York, NY*

Aug 2021 – Aug 2022

Lab Manager

Coordinated organization of Bergelson lab move from Chicago to New York City. Managed daily operations of the lab including; purchasing orders, chemical waste management, equipment maintenance, and spending reports. Ported and maintained 135 TB of research data between institutions. Built lab wiki (Confluence) to centralize and organize ongoing research. Assisted with IBC protocols and implemented measures for USDA compliance for natural and transgenic plant and microbe experiments.

### University of Chicago *Chicago, IL*

Aug 2014 – Aug 2016

Research Specialist

Managed sample intake and project tracking for NGS and molecular genetics projects to deliver timely results. Tested thousands of samples using Bioanalyzer and qPCR, providing clients with interpretation and consulting on subsequent sequencing. Ran and maintained the Illumina HiSeq4000 and MiSeq.

### Goby *Chicago, IL*

Sep 2012 – Aug 2014

Project Manager

Managed utility and purchasing data for over 200 properties using Excel, Asana, and Goby's data manager, SeaSuite. Successfully led eight, six-month LEED projects on time and under budget, demonstrating excellent leadership, organization, and communication skills.

## RESEARCH

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- **Presenter**, Microbiome Research Symposium (2023) “Improving microbiome community studies with gyrB”
- Brachi, B., **Whitehurst, H**, Filiault, D., Darne, P., Mentec, M. L., Kerdaffrec, E., Rabanal, F., ... & Bergelson, J. (2022). Plant genetic effects on microbial hubs impact host fitness in repeated field trials. *PNAS*.
- **Whitehurst, H**, Bartoli, C., Roux, F., Bergelson J. (2023) Effectiveness of *gyrB* amplicon in characterizing microbial taxa in *A. thaliana* leaf communities. *In prep*.
- **Whitehurst, H**, Brachi, B., Bergelson J. (2023) Improving GWAS statistical power in microbiome studies using internal references and improved taxonomic identification. *In prep*.
- **Poster**, *International Society of Plant Microbe Interactions*. 2019. “Absolute counts versus relative abundances in characterizing *A. thaliana* leaf bacterial communities”
- **Presenter**, *Southern California Conference on Undergraduate Research*. 2012. “Biodiversity in correlation to pollution along Pune River in Pune, India”
- Tate, A.S. and L. L. Battaglia. 2013. Disassembly and reassembly of coastal communities following experimental storm surge and wrack deposition. *Journal of Vegetation Science* 24: 46-57.

## AWARDS

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| • NSF Graduate Research Fellow (2016-2021)<br>GRFP, award for graduate students | • Whittier Scholar of the Year (2012)<br>Recognition for senior research project |
| • John Greenleaf Merit Scholarship (2008-2012)<br>>\$80,000, merit based        | • Omicron Delta Kappa (2010-2012)<br>Leadership Honor Society                    |

## TEACHING EXPERIENCE

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| Guest lecture, “Introduction to <i>Pseudomonas syringae</i> ”<br><i>University of Illinois Urbana-Champaign   Professor Dr. Rachel Whitaker</i>   | 2021 |
| Molecular Evolution, Teaching Assistant<br><i>University of Chicago   Professor Dr. Martin Kreitman</i>   | 2021 |
| <ul style="list-style-type: none"><li>• Assisted with all classes for ~30 graduate and undergraduate students</li><li>• Held biweekly office hours to assist students with computational labs</li><li>• Led one lecture sharing my research and methods</li></ul> |      |
| Fundamentals of Ecology and Evolutionary Biology, Teaching Assistant<br><i>University of Chicago   Professors Dr. Trevor Price and Dr. Marcus Kronforst</i>   | 2020 |
| <ul style="list-style-type: none"><li>• Led weekly computational labs with ~30 student</li><li>• Held office hours to keep students on task with knowledge benchmarks</li><li>• Graded weekly quizzes and assisted in exam assessments</li></ul>                  |      |

## MENTORSHIP

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| Arushi Ran, Undergraduate Researcher, University of Chicago | 2018-2019 |
| Riley Leff, Undergraduate Researcher, University of Chicago | 2017-2018 |

## VOLUNTEER AND EXTRA CURRICULAR ACTIVITIES

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- Volunteer, “Dignity Diner”, food service for community members (weekly, 2023)
- Teaching Assistant, “Genome Hackers” coding camp for teenage girls in South Chicago (2019)
- Volunteer, “Expanding Your Horizons” science outreach program (2018)
- Volunteer, Presenter “French Science Fair” (2017-2018)
- Volunteer, Graduate Council Representative for Ecology and Evolution (2016-2019)
- Volunteer, public outreach, Peggy Notebaert Nature Museum (weekly, 2015-2016)