

# Azwad R. Iqbal

[✉ ari22@cornell.edu](mailto:ari22@cornell.edu) | [🏡 azwadiqbal.github.io](https://azwadiqbal.github.io) | [🔗 azwadiqbal](https://www.linkedin.com/in/azwad-iqbal/) | [📸 azwadiqbal](https://www.instagram.com/azwadiqbal/) | [@azwadiqbal](https://twitter.com/azwadiqbal)

## Professional Summary

---

I am a broadly trained population geneticist and evolutionary biologist with an interest in rapid evolution and the conservation of wild species. My research leverages cutting-edge genomic techniques, bioinformatics, and fieldwork to understand the evolutionary consequences of anthropogenic change.

## Education

---

### Cornell University

PH.D. NATURAL RESOURCES AND THE ENVIRONMENT

- Advisor: Nina Overgaard Therkildsen

Ithaca, NY

2021 - 2026 (expected)

### Princeton University

B.A. ECOLOGY AND EVOLUTIONARY BIOLOGY

- *Summa Cum Laude*
- Minor in Environmental Studies

Princeton, NJ

2015 - 2019

## Research Experience

---

### McBride Lab, Princeton University

RESEARCH SPECIALIST

Princeton, NJ

May 2019 - July 2021

- Research specialist studying the neural and genomic basis for mosquito host preference using neural imaging, behavioral assays, transgenic line maintenance, whole-genome sequencing, and tagmentation mapping protocols

### Pringle Lab, Princeton University

SENIOR THESIS RESEARCH

Princeton, NJ

June 2018 - April 2019

- Conducted lab and field work in Nyika National Park, Malawi for plant specimen collection to construct local DNA barcode database and reconstruct herbivore trophic networks

### Ayroles Lab, Lewis-Sigler Institute for Integrative Genomics

LAB TECHNICIAN

Princeton, NJ

January - December 2018

- Lead technician for project examining genetic basis of speciation between *D. sechelia* and *D. simulans*

### Pringle Lab, Nyika National Park

FIELD TECHNICIAN

Malawi

June - August 2017

- Student intern collecting animal fecal samples for large mammalian herbivore diet and resource partitioning project

### Pringle Lab, Mpala Research Centre

FIELD TECHNICIAN

Laikipia, Kenya

July - September 2016

- Student intern conducting field experiments on induced plant defenses of *Barleria* species

## Publications

---

1. Velotta, <sup>†</sup>J. P., <sup>†</sup>Iqbal, <sup>†</sup>Azwad R., Glenn, E. S., Franckowiak, R. P., Formenti, G., Mountcastle, J., Balacco, J., Tracey, A., Sims, Y., Howe, K., Fedrigo, O., Jarvis, E. D., & Therkildsen, N. O. (2024). A complete assembly and annotation of the american shad genome yields insights into the origins of diadromy. *Genome Biology and Evolution*, 17(1). <https://doi.org/10.1093/gbe/evae276>
2. Dimens, P. V., Franckowiak, R. P., **Iqbal, Azwad**, Grenier, J. K., Munn, P. R., & Therkildsen, N. O. (2024). Harpy: A pipeline for processing haplotagging linked-read data. *Bioinformatics Advances*, 5(1). <https://doi.org/10.1093/bioadv/vbaf133>
3. Pansu, J., Hutchinson, M. C., Anderson, T. M., Beest, M. te, Begg, C. M., Begg, K. S., Bonin, A., Chama, L., Chamaillé-Jammes, S., Coissac, E., Cromsigt, J. P. G. M., Demmel, M. Y., Donaldson, J. E., Guyton, J. A., Hansen, C. B., Imakando, C. I., **Iqbal, Azwad**, Kalima, D. F., Kerley, G. I. H., ... Pringle, R. M. (2022). The generality of cryptic dietary niche differences in diverse large-herbivore assemblages. *Proceedings of the National Academy of Sciences*, 119(35). <https://doi.org/10.1073/pnas.2204400119>
4. Zhao, Z., Zung, J. L., Hinze, A., Kriete, A. L., **Iqbal, Azwad**, Younger, M. A., Matthews, B. J., Merhof, D., Thibierge, S., Ignell, R., Strauch, M., & McBride, C. S. (2022). Mosquito brains encode unique features of human odour to drive host seeking. *Nature*, 605(7911), 706–712. <https://doi.org/10.1038/s41586-022-04675-4>

## **Presentations**

---

- 2024 The Population Genomics of Invasion: Founder effects, local adaptation, and chromosomal inversions shape the rapid evolution of invasive American shad. *Evolution 2024, Montreal, QB, Canada*
- 2023 The Population Genomics of Invasion: Insights into the Pacific Coast Invasion of American shad. *Great Lakes Annual Meeting of Evolutionary Genomics, Ithaca, NY*
- 2022 Investigating the genomic basis of rapid adaptation in the American Shad. *American Fisheries Society Annual Meeting, Spokane, WA*
- 2022 Investigating the genomic basis of rapid adaptation in an invasive migratory fish. *Evolution 2022, Cleveland, OH*
- 2019 Plant-Herbivore Interactions and Resource Partitioning in the Nyika Plateau, Malawi. *Princeton Environmental Institute Discovery Day, Princeton, NJ*

## **Funding & Grants**

---

2025	Cornell Atkinson Center Sustainable Biodiversity Fund	\$2,970
2025	American Museum of Natural History Theodore Roosevelt Memorial Fund Grant	\$2,400
2024	Cornell Center for Vertebrate Genomics Scholar Award	\$12,000
2023	American Philosophical Society Lewis and Clark Fund	\$3,000
2023	Society for the Study of Evolution (SSE) R.C. Lewontin Early Award	\$2,500
2023	National Science Foundation Graduate Research Fellowship (GRFP)	\$159,000
2021	Cornell University Fellowship	\$33,032
2021	Cornell Atkinson Center Sustainable Biodiversity Fund	\$6,930

## **Honors & Awards**

---

- 2024 Cornell Center for Vertebrate Genomics Scholar
- 2022 Best Proposal-stage Presentation - Cornell Department of Natural Resources Symposium
- 2021 NSF Graduate Research Fellowship Program (GRFP) Honorable Mention
- 2019 Sigma Xi Book Award for Outstanding Research - Princeton Department of Ecology & Evolutionary Biology
- 2019 Senior Thesis Prize in Ecology - Princeton Department of Ecology & Evolutionary Biology
- 2019 Gates Cambridge Finalist - Biological Sciences

## **Teaching**

---

- 2025 Guest Lecture - NTRES 2830: DNA, Genes and Genetic Diversity
- 2023 Teaching Assistant - NTRES 6100: Collaborative and Reproducible Data Science in R
- 2022 Teaching Assistant - NTRES 2100: Introductory Field Biology
- 2021 Guest Lecture - NTRES 3400: Molecular Tools for Ecology, Conservation, and Natural Resource Management
- 2019 Co-Instructor - St. Paul's School Advanced Studies Program (Ecology)

## **Leadership & Service**

---

- 2022-24 Co-facilitator - Cornell EvoGroup Seminar Series
- 2023 Volunteer - Cornell Expand Your Horizons
- 2022-23 General Council Member - Cornell Department of Natural Resources DEI Advisory Council
- 2022 Co-Instructor - Cornell Graduate Student School Outreach Program (GRASSHOPR)

## **Skills**

---

### **Computational:**

Programming Languages: R, Python, Snakemake, bash

Software: SLURM, bwa, samtools/bcftools, ANGSD, GATK, git/GitHub

**Laboratory:** Gel electrophoresis, PCR, gDNA extraction (archival and contemporary tissues), NGS library preparation

**Language:** English (Fluent), Bengali (Conversational), Hindi (Elementary), Spanish (Elementary)