# Azwad R. Iqbal

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## 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** — *Ithaca, NY*

Ph.D. Natural Resources and the Environment — *2021 - 2026 (expected)*

- Advisor: Nina Overgaard Therkildsen

**Princeton University** — *Princeton, NJ*

B.A. Ecology and Evolutionary Biology — *2015 - 2019*

- *Summa Cum Laude*
- Minor in Environmental Studies

## Research Experience

**McBride Lab, Princeton University** — *Princeton, NJ*

Research Specialist — *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** — *Princeton, NJ*

Senior Thesis Research — *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** — *Princeton, NJ*

Lab Technician — *January - December 2018*

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

**Pringle Lab, Nyika National Park** — *Malawi*

Field Technician — *June - August 2017*

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

**Pringle Lab, Mpala Research Centre** — *Laikipia, Kenya*

Field Technician — *July - September 2016*

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

## Publications

1. Velotta,† J. P., **Iqbal,**† **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., Thiberge, 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

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| 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

2023 *Teaching Assistant* - NTRES 6100: Collaborative and Reproducible Data Science in R
2022 *Teaching Assistant* - NTRES 2100: Introductory Field Biology
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:** R, Python, Snakemake, bash, SLURM, git/GitHub

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

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