

Abby Williams

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I am an evolutionary biologist interested in genomic responses to environmental change. I am a first year PhD student in the Department of Biology at the University of Oxford. My research investigates the genomics of hybridization and extinction in birds, using both museum specimens and contemporary samples.

Education

DPhil in Biology

University of Oxford, 2024-2028 (expected)

Thesis title: Evolution and extinction of island birds.

BA Natural Sciences (Zoology)

University of Cambridge, 2020-2023

Grade: First class

Thesis projects:

- Environmental factors favouring hybridization in an invasive pest moth (supervised by Gabriela Montejo-Kovacevich and Chris Jiggins)
- Testing the thermal melanism hypothesis in *Anartia* butterflies (supervised by Esme Ashe-Jepson and Andrew Balmford)

Research Experience

Research Assistant at the Cambridge Center for Carbon Credits, UK

January 2024-September 2024

- Quantified tropical deforestation using satellite data
- Wrote R, Python and shell scripts to analyse satellite imagery and estimate the number of carbon credits generated by forest conservation projects
- Communicated these findings through journal articles, reports and presentations

Research Assistant at the Smithsonian Tropical Research Institute, Panama

July 2023 - December 2023

- Worked as part of a team investigating wing patterning genes in *Heliconius* butterflies
- Identified candidate genes, carried out CRISPR and RNAi knockouts and verified this using sequencing data
- Developed an independent project on *Parides* butterflies, using RNAseq to identify wing patterning candidates

Undergraduate Researcher at Cold Spring Harbor Laboratory, USA

June 2022-August 2022

- Investigated neural pathways facilitating an unusual vocal behaviour in the singing mouse *Scotinomys teguina*
- Analysed sequence data from a novel neuron labelling technique, MAPseq

Teaching and Outreach

The Brilliant Club tutor, Henry Box School

March 2025-June 2025

Outreach Ambassador, Clare College, University of Cambridge, UK

October 2022-June 2023

Tutor at Katharina Clarke Tuition, Leicester, UK

September 2019-March 2020

Classroom Assistant at Kumon Oadby, Leicester, UK

September 2018-March 2020

Publications

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- High-quality genomes for *Parides sesostris* and *Parides erithalion*: a promising butterfly model for structural coloration studies (in prep). Camino L., Lopez Y., **Williams A.**, Arias C., McMillan O.
 - Independent statistical methods address overcrediting problems in REDD+ (under review). Swinfield T., **Williams A.**, Coomes D., Dales M., Ferris P., Guizar-Coutino A., Hartup J., Jaffer S., Jones J. P. G., Lam M. O. K., Keshav S., Madhavapeddy A., Toye-Scott E., West T.A.P., Balmford A.

Skills

- Programming languages: R, Python, bash, JavaScript
- High-performance computing
- Github and version control
- GIS: QGIS, Google Earth Engine
- Fieldwork: Mist netting, bird ringing, butterfly collection