

David Y. Shen

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Education

- University College London (UCL)** London, UK
MSci Biodiversity and Conservation - First-class honours September 2017 - June 2021
Courses include: Computational Biology, Animal Biodiversity, Ecological Pattern and Processes, Plant Evolution and Ecology, Dynamic Biological Systems
- University of Queensland** Brisbane, Australia
Study abroad program - GPA 6.33 July 2019 - July 2020
Courses include: Conservation and Wildlife Biology, Macroecology and Biogeography, Landscape Ecology

Skills Summary

- Languages:** Data science and modelling in R, intermediate Python experience, shell scripting
- Scientific computing:** Bash, Slurm job scheduler, Docker containers, Linux, Windows Subsystem for Linux, Cloud computing on Microsoft Azure and Amazon Web Services
- Tools:** RStudio, Terra and Raster R packages for spatial data, QGIS
- Soft Skills:** Project leadership, Event management, Large team collaboration, Independent working, Verbal and written communication
- Other skills:** Competent terrestrial and marine field skills in observational and manipulative experiments

Employment History

- Spatial Scientist** Natural Capital Research, UK
Carbon Modelling Team (Full-time) August 2022 - Present
 - Global carbon models:** I am currently working to build global models of forest carbon, predicted by forest canopy height and aboveground biomass using data from NASA's GEDI satellite
 - Bespoke carbon assessments:** Using landcover data and satellite imagery, I evaluate the carbon storage and sequestration of vegetation for clients to build assessments of natural capital
- Postgraduate Research Associate** Yale University, USA
Spatial Modelling Team (Full-time) August 2021 - July 2022
 - Biodiversity Maps:** I produce high-resolution 1km² species distribution models (SDMs) for North America for over 4000 species to support the US federal government's effort to conserve 30% of US land area by 2030
 - Workflow parallelisation:** I use high performance computing clusters at Yale and a cloud-based architecture on Microsoft Azure to massively parallelise our workflow
 - Independent Research:** I am currently researching how our biodiversity models may reveal insights into the importance of different environmental conditions for species occurrence. I am also exploring how graphical models may be used to incorporate biotic interactions in species occupancy models

Research Experience

- MSci Extended Research Project (Advisor: Prof. Richard Pearson) - UCL:** I modelled current and future distributions of the mopane worm (*Gonimbrasia belina*) with the aim of understanding how climate change influences its ecosystem services. I used Bayesian networks to incorporate biotic interactions into the species distribution models. My models predicts substantially more decline than previously predicted, with major implications for ecosystem services provided by the mopane worm. (September 2021 - Present)
- Field Assistant - UCL:** I helped UCL students with their research projects and assisted the course organisers in running the 1-week course at the Blakeney Point Research Station. I gained management and planning experience and fieldwork skills. (September 2018)
- Research Assistant - Big Wasp Survey - UCL:** I helped taxonomic identification of wasp specimens from across the UK as part of the Big Wasp Survey project. I practised species identification and microscopy skills. (October 2018)

Publications and Conferences

- Research article:** Shen, D.Y., Ferguson-Gow, H., Groner, V., Munyai, T.C., Slotow, R., and Pearson, R.G. *Potential decline in the distribution and food provisioning services of the mopane worm (Gonimbrasia belina) in southern Africa*. (In preparation for submission to Wellcome Open Research).
- Conference Poster:** Shen, D.Y., Groner, V., Ferguson-Gow, H., Munyai, T.C., Slotow, R., and Pearson, R.G. *Potential decline in the distribution and food provisioning services of the mopane worm (Gonimbrasia belina) in southern Africa*. Poster presentation for the British Ecological Society Annual Meeting, December 2021. Runner up for the Student Poster Prize - awarded £100. Poster presentation for the International Biogeography Society Biannual Meeting, June 2022. Best Poster - awarded \$100

Professional Affiliations

- British Ecological Society - Member
- International Biogeography Society - Member

Volunteer Experience

- **Seminar Committee - Yale Center for Biodiversity and Global Change** Yale University, USA
Select speakers and organise seminars for the upcoming spring and summer semesters August 2021 - July 2022
- **Academic Secretary - UCL Biology Society** UCL, UK
Organised seminars, educational workshops, administration and merchandising. September 2020 - June 2021
- **Social Secretary - UCL Karate Club** UCL, UK
Hosted social events, club administration and branding September 2018 - June 2019