Paul J. Huxley

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Research Interests

I am a Postdoctoral Researcher in the Department of Statistics at Virginia Tech. I am interested in ecology across scales - understanding how current patterns of biodiversity reflect environmental conditions as well as historical patterns of evolution. I am particularly interested in ecological responses to changing environments - from life history responses through to population and community dynamics. Currently, I use statistical and mathematical models to better understand and predict patterns of covariation between life history traits in disease vectors and other arthropods.

Education

2016 - 2021	PhD in Life Sciences, Imperial College London *Effects of resource availability on the temperature dependence of mosquito population fitness* Supervisors: Drs Kris Murray, Lauren Cator and Samraat Pawar
2012 - 2015	MSc with Distinction in Biodiversity, Wildlife and Ecosystem Health University of Edinburgh Research project: *Spatiotemporal range expansion of an invasive non-native species of bamboo in Satoyama agricultural systems*
2005 - 2006	Post Graduate Certificate in Business Management Manchester Metropolitan University
2004	Certificate Trinity TESOL, Manchester College of Arts and Technology
1998 - 2002	BA Hons with 2:1 in History and Sociology, Staffordshire University Research project: *Indirect rule in British West African colonies* Received the Ray Jenkins Memorial Award for Outstanding Historical Research

Research Skills

Coding	R (extensive), GitHub (basic), Jupyter Notebooks (basic).
Computational ecology	Statistical and mathematical modeling of biological and ecological data on arthropods in `R` (e.g., matrix projection models, non-linear thermal responses) Used aerial photographs, ERDAS Imagine, ArcGIS and binomial GLMs to map and analyse the spatiotemporal range expansion of a non-native invasive bamboo in Japanese agricultural systems.
Laboratory work	Designed and executed experiments to investigate the effects of resource availability and larval competition on the temperature dependence of population-level fitness in *Aedes aegypti*.
Fieldwork	Conducted field experiments to assist rainforest regeneration projects at the Cape Tribulation Tropical Research Station, Australia.

PUBLICATIONS

Huxley PJ, Murray KA, Pawar S, Cator LJ. 2022. Competition and resource depletion shape the thermal response of population fitness in *Aedes aegypti*. *Commun. Biol.* 5: 66 doi: 10.1038/s42003-022-03030

Huxley PJ, Murray KA, Pawar S, Cator LJ. 2021. The effect of resource limitation on the temperature dependence of mosquito population fitness. *Proc. R. Soc. B.* 288: 20203217. doi: 10.1098/rspb.2020.3217

Shah HA, **Huxley P**, Elmes J, Murray KA. 2019. Agricultural land-uses consistently exacerbate infectious disease risks in Southeast Asia. *Nat. Commun.* 10, 4299. doi:10.1038/s41467-019-12333-z

Huxley PJ, Murray KA, Cator LJ, Pawar, S. Utility of the Euler-Lotka equation for predicting the temperature- and resource-dependence of population fitness in a disease vector. *In preparation*.

PRESENTATIONS

Invited seminars

2022: [External] MRC Unit The Gambia
Talk: Competition and resource depletion shape the thermal response of population fitness in *Aedes aegypti*

2020: [Internal] MRC Centre for Global Infectious Disease Analysis seminar, Imperial College London
Talk: Nutrient limitation modulates the effects of temperature on *Aedes aegypti* fitness.

International conferences

2021: *The Ecological Society of America Annual Meeting* - Virtual
Talk: Competition in depleting resource environments shapes the thermal response of mosquito population fitness

2020: *British Ecological Society Annual Meeting* - Virtual
Poster: The effects of juvenile competition on the temperature-dependence of mosquito population-level fitness.

2020: *The Ecological Society of America Annual Meeting* - Virtual
Talk: The effects of resource limitation on the temperature dependence of mosquito population-level fitness (https://eco.confex.com/eco/2020/meetingapp.cgi/Paper/83557)

2019: *British Ecological Society Annual Meeting* - ICC Belfast
Talk: Nutritional limitation modulates the thermal dependence of fitness in *Aedes aegypti*.

TEACHING

2020 - 2021	Writing Tutor, Department of Computing, Imperial College London, UK
2016 - 2020	Presessional EAP Teacher, Centre for Academic English, Imperial College London, UK
2018 - 2020	Assessment Tutor, School of Public Health, Imperial College London, UK
2010 - 2015	Tutor of English for Academic Purposes, Ritsumeikan Asia Pacific University, Japan

OUTREACH AND PUBLIC ENGAGEMENT

2019 - 2020	Volunteer STEM Tutor for victims of the Grenfell Tower fire
2017 & 2018	Imperial Festival - *Exhibitor*