Tim CD Lucas

PERSONAL INFORMATION

email	✉ timcdlucas@gmail.com
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website	www.ucl.ac.uk/~ucbptcl
github	www.github.com/timcdlucas
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PUBLICATIONS

2015 **Lucas TCD***, Moorcroft EA*, Freeman R, Rowcliffe MJ, Jones KE. (2015) *A generalised random encounter model for estimating animal density with remote sensor data*. Methods in Ecology and Evolution. doi: 10.1111/2041-210X.12346 [pdf]

2013 Walters CL, Collen A, **Lucas TCD**, Mroz K, Sayer CA and Jones KE. (2013) Challenges of Using Bioacoustics to Globally Monitor Bats. in *Bat Evolution, Ecology, and Conservation*. Springer New York. 479-499.

∗ Co-first authors.

EDUCATION

2012–present **University College London, CoMPLEX**

PhD *Social structure and network epidemiology in bat zoonoses*
Description: I am using *complex networks* to study the epidemiology of bat-borne diseases. As bats carry a number of important *zoonotic diseases*, understanding the spread of these diseases within the bat population and how this affects spillover to humans and livestock is increasingly important. The unusually social nature of bat populations will strongly affect how diseases spread.
Supervisors: Prof. Kate JONES & Dr Hilde WILKINSON-HERBOT

2011–2012 **University College London, CoMPLEX**

MRes *Modelling Biological Complexity* · **Merit**
Description: This was part of a combined MRes/PhD Program. It was an interdisciplinary course applying *quantitative methods* to the life sciences.

2006–2010 **University of Sheffield, Animal & Plant Sciences**

MBioSci *Zoology* · **First**
Description: For my final project I used *wavelet* analysis to study multi-annual *cycles in malaria* incidence in Thailand.

Autumn 2014   Zoön: An R package for reproducible SDMs

Internship

I wrote the first version of an R package for *reproducible* Species Distribution Modelling. The package uses an online repository of user submitted 'modules' to allow the software to keep up with this fast moving field and allow analyses to be completely reproducible. [Github]

Summer 2012   Estimating abundances using acoustic data

Summer Project

I adapted '*ideal gas*' models to acoustic data. I applied the model using R to a pan-European bat survey. We have worked on this project further, validating results with simulations, and the work is now published.

May 2012   Pair approximations in spatial biology

Case Presentation

I compared a number of moment closures for a *pair-approximation* model of tree population growth to lattice simulations written in Mathematica. [pdf]

Dec. 2011   Gaussian processes for bat identification

Case Presentation

I applied a novel *machine learning* method to a library of *bat calls* in Matlab. I compared the effectiveness of this method to standard machine learning methods applied in R. [pdf]

August 2011   Smithsonian Tropical Research Institute

Volunteer Fieldwork

Two months fieldwork in Panamá on two projects: studying *Anolis* dewlap evolution and studying gut length plasticity in Red-eyed tree frogs.

May 2011   Chiloé Silvestre, Chilé

Volunteer Fieldwork

I spent two weeks trapping Darwin's foxes in Chilé to collect samples for geophylogenetics.

August 2010   University of Sheffield

Summer Internship

I studied the evolutionary response of plant communities to climate change with Dr Raj Whitlock. I collected, propagated and analysed plants collected from the field.

August 2009   University of York, YCCSA

TRANSIT Internship

I studied collective foraging behaviour by programming a *complex 3D foraging simulation* in Java with Dr Jamie Wood and Dr John Pritchard at the York Centre for Complex Systems Analysis.

COMPUTER SKILLS

Languages   R (seven years), Python, Matlab, Mathematica, Java.

OS   Comfortable with Windows, Mac or Linux.

Other   Experience in Git/Github, unit testing, LaTeX, web design, markdown, R package development.

OTHER INFORMATION

Meetings   2015 · Presentation at the National Bat Conference [slides]

2015 · Poster at British Parasitological Society Autumn Meeting.

2014 · Presentation at CEH, Wallingford seminar series.

	2014 · Presentation at id2oxford conference. [slides]
	2014 · Poster at the CoMPLEX conference. [pdf]
	2013 · Presentation at BritBats 2 [slides].
	2013 · Invited attendance at ecoVIZ Tansley workshop.
	2013 · Poster at the CoMPLEX conference and id2 conference. [pdf]
Teaching	2015 · Demonstrator for reproducible species distribution modelling workshop run by Quantitative Ecology special interest group at BES.
	2013–2014 · Online tutor for SYSMIC, a course for teaching quantitative skills to biologists.
Peer Review	*Journals Reviewed for:*
	· Methods in Ecology and Evolution
	· National Academy Science Letters

September 16, 2015