

Dr Deon Roos

Lecturer in Applied Statistics, University of Aberdeen

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Lecturer in Applied Statistics at the University of Aberdeen, with a path into statistics that ran through zoology and ecology. My research builds statistical models for messy, real-world data, spanning population dynamics, spatio-temporal ecology, and disease surveillance in government and policy settings. I teach statistics from undergraduate to PhD level and write free, open resources for biologists, with a focus on understanding methods rather than following recipes.

EDUCATION

PhD Ecology

EMPLOYMENT

Fellowships

APHA

Lecturer

2016

2018

2020

2022

2024

NOW

Employment

Lecturer in Applied Statistics

Jan 2024 – Present

University of Aberdeen, Aberdeen, Scotland

- Leading and collaborating on interdisciplinary research in applied statistics with real-world impact.
- Teaching statistical theory and methods across undergraduate to PhD levels.
- Assisting research projects through the application of collaborator-specified statistical approaches.

Senior Statistical Ecologist

May 2022 – Jan 2024

Animal & Plant Health Agency, Sand Hutton, England

- Developed bespoke statistical pipelines for policy-driven research, translating model outputs into recommendations for non-specialist stakeholders across government.
- Ran computationally intensive model jobs on AWS EC2 within a secure government data environment.
- Mentored analysts across multidisciplinary teams and led statistical direction on projects spanning ecology, disease surveillance, and regulatory policy.

Teaching Fellow

Dec 2021 – May 2022

University of Aberdeen, Aberdeen, Scotland

- Coordinated and delivered a highly rated, fully online undergraduate statistics course with strong student engagement.

Research Fellow

Jun 2021 – Feb 2022

University of Aberdeen, Aberdeen, Scotland

- Conducted international ecological research, including study design and simulation modelling for species management.

Teaching Fellow

Dec 2020 – May 2021

University of Aberdeen, Aberdeen, Scotland

- Course coordinator for an undergraduate statistics course.

Education

PhD Ecology

2016 – 2021

University of Aberdeen, Aberdeen, Scotland

- Thesis: rodent pest population dynamics.
- Publications: Roos et al. (2019) and Roos et al. (2022).

BSc (Hons) Zoology

2012 – 2016

University of Aberdeen, Aberdeen, Scotland

- Graduated First Class.
- Thesis: water vole ecosystem engineering.

Publications

- 2026 Karolin Hijazi, Sara Sharaf, Susanth Alapati, Hadeel Abbood, **Deon Roos**, Claudia Trappetti, Marco R. Oggioni. Whole-body decolonisation policies and *Staphylococcus aureus* bacteraemia rates in acute hospitals in England: a national cross-sectional survey. *Journal of Hospital Infection*. doi:10.1016/j.jhin.2026.07.010
- 2025 Sara Sharaf, Timothy Lawes, **Deon Roos**, Ijeoma Okoliegbé, Susanth Alapati, Antonio Ribeiro, Istifanus Nkene, Daniele Ghezzi, Stuart J Reid, Victoria Austin, Dolapo Ayansina, Becky Wilson, Tanzeel Rehman, Benjamin J Parcell, Ian Mellor, Charis A Marwick, Marco Oggioni, Karolin Hijazi. Universal versus targeted chlorhexidine and mupirocin decolonisation and clinical and molecular epidemiology of *Staphylococcus epidermidis* bloodstream infections in patients in intensive care in Scotland, UK. *The Lancet Microbe*. doi:10.1016/j.lanmic.2025.101118
- 2025 Cristiano Tiberi, Sarah Beatham, Julia Coats, Izzy Rochester, **Deon Roos**, Riccardo Primi, Andrea Vitali, Giovanna Massei. An assessment of whether age, sex, and reproductive status affect bait uptake by grey squirrels. *Journal of Wildlife Management*. doi:10.1002/jwmg.22687
- 2024 Tiago Crispim-Mendes, **Deon Roos**, Clara Mendes Ferreira, Joana Paupério, João Paulo Silva, Sérgio Godinho, Paulo Célio Alves, António Mira, Pedro Beja, Xavier Lambin, Ricardo Pita. Patch spatial attributes and time to disturbance affect the emergence of source local populations within ephemeral habitats. *Ecological Modelling*. doi:10.1016/j.ecolmodel.2024.110839
- 2024 Ijeoma Nnenna Okoliegbé, Sara Aly Abdelfatah Sharaf, Susanth Alapati, **Deon Roos**, Antonio Ribeiro, Istifanus Nkene, Daniele Ghezzi, Stuart Reid, Victoria Austin, Dolapo Ayansina, Rebecca Wilson, Tanzeel Ur-Rehman, Benjamin J Parcell, Ian Mellor, Charis A. Marwick, Marco Oggioni, Karolin Hijazi. Effects of universal versus targeted chlorhexidine skin decolonisation on the clinical and molecular epidemiology of *Staphylococcus epidermidis* bloodstream infections in intensive care. *SSRN Preprints with The Lancet*. doi:10.2139/ssrn.4910337
- 2024 J. Colomer, G. Massei, **D. Roos**, C. Rosell, J. D. Rodríguez-Teijeiro. What drives wild boar density and population growth in Mediterranean environments?. *Science of the Total Environment*. doi:10.1016/j.scitotenv.2024.172739
- 2022 **Deon Roos**, Constantino Caminero-Saldaña, David Elston, François Mougeot, María Carmen García-Ariza, Beatriz Arroyo, Juan José Luque-Larena, Francisco Javier Rojo Revilla, Xavier Lambin. From pattern to process? Dual travelling waves, with contrasting propagation speeds, best describe a self-organised spatio-temporal pattern in population growth of a cyclic rodent. *Ecology Letters*. doi:10.1111/ele.14074
- 2021 James Slingsby, Beth E. Scott, Louise Kregting, Jason McIlvenny, Jared Wilson, Ana Couto, **Deon Roos**, Marion Yanez, Benjamin J. Williamson. Surface Characterisation of Kolk-Boils within Tidal Stream Environments Using UAV Imagery. *Journal of Marine Science and Engineering*. doi:10.3390/jmse9050484
- 2019 **Roos, D.**, Caminero Saldaña, C., Arroyo, B., Mougeot, F., Luque-Larena, J.J., Lambin, X.. Unintentional effects of environmentally-friendly farming practices: Arising conflicts between zero-tillage and a crop pest, the common vole (*Microtus arvalis*). *Agriculture, Ecosystems and Environment*. doi:10.1016/j.agee.2018.11.013

Teaching

BI3010: Statistical Analysis of Biological Data

2020 – Present

University of Aberdeen. Third-year undergraduate; course coordinator, around 150 students.

- From linear models through to generalised linear models, taught for genuine understanding rather than recipe-following, with R and ggplot2 throughout.

PGR: Generalised Linear Models

2021 – Present

University of Aberdeen. Postgraduate and PhD; free and open to any institution.

- A free course on the theory and application of GLMs, open to students from any university and discipline; part of a wider series covering R and linear models.

PU5058: Introduction to Health Data Science

University of Aberdeen. Postgraduate; guest lecturer.

- The theory underlying effective data visualisation.

An Introduction to R

Open-access textbook, author. Free and online at intro2r.com.

Skills

Programming

R, RShiny, Python, HTML, CSS, JavaScript

Statistical methods	Causal inference, Bayesian inference, spatio-temporal modelling, hierarchical modelling, hidden Markov models, non-linear modelling, simulation-based inference, study design
Ecological modelling	Population dynamics, occupancy modelling, mark-recapture, integrated population models
NLP & text analysis	Structural topic models, natural language processing
Data infrastructure	Production Shiny deployment, automated pipelines in R, scheduled task automation, SQLite, AWS EC2
Data visualisation	ggplot2, gganimate, plotly, leaflet, tidyverse, base R
Reproducible research	RMarkdown, Quarto, LaTeX, Git, GitHub Pages
Teaching & communication	Course coordination, accessible teaching of complex methods, PhD supervision, grant writing, textbook authorship
Languages	English (fluent), Afrikaans (fluent), Spanish (basic)

Awards & funding

- 2019 **Best Student Presentation**, *University of Aberdeen*
Travelling waves as a form of spatio-temporal asynchrony.
- 2019 **Best Presentation**, *Iberian Vole Workshop, Porto*
Spatio-temporal asynchrony in a cyclic vole species.
- 2017 **Sir Maitland Mackie Scholarship**, *University of Aberdeen*
Funding for agricultural research.
- 2016 **Outstanding BSc Zoology Student**, *University of Aberdeen*
- 2016 **People's Trust Internship**, *PTES*
Funded research position following BSc thesis.
- 2015 **Carnegie Summer Scholarship**
Supported BSc data collection.