E5 NERC Summer Research Experience Placements 2026

Please return to e5dtp.info@ed.ac.uk

A. Supervisor (s) - Name, email and affiliation

I. **Amy Pedersen**, amy.pedersen@ed.ac.uk, **Institute of Ecology and Evolution**

II. **Alexandra Vavrik**, avavrik@ed.ac.uk, **Institute of Ecology and Evolution**

B. Student Mentor (current PhD student) Name, email and affiliation

Rhoslyn Howroyd, r.c.howroyd@sms.ed.ac.uk, E4 DTP NERC

C. Department/School

Institute of Ecology and Evolution, School of Biological Sciences

D. Placement Project Title

Spying on the social lives of wild wood mice

E. Job purpose

The student will join our summer fieldwork team, gaining experience both in the field (live-trapping and collecting data on small mammals) and lab (analysing samples). They will use this large-scale dataset to answer a scientific question around the theme of parasite superspreaders, with flexibility depending on their interests.

F. Host and project outline

Project background:

The spread of parasites within wild populations is heavily driven by the social behaviour of individuals. Traits like space usage or social contacts can underpin an individual's exposure to parasites, susceptibility to infection, and ability to pass parasites on to others. To better understand the mechanisms that drive disease transmission, we must therefore ask ourselves; where and who are the most social animals, and do they disproportionately contribute to p transmission (superspreaders)?

Project question:

In this large-scale field experiment, we utilise tagged wood mice to study social behaviour in a wild host-parasite system. Our field team will collect home range data, boldness scores, and parasite burdens for individuals across the summer months. This will allow us to address the

relationship between social behaviour and transmission.

Timeline:

The student will participate in our research groups field work on wild rodents, learn parasitological analysis, and use our spatial loggers to determine mouse contacts to infer which individuals may be potential superspreaders. There will be a mix of lab work and fieldwork. A lot of time will be spent outdoors, making this ideal for individuals who enjoy being physically active. Field work will run from the middle of May to the end of November. We will conduct fieldwork each week between Tuesday to Thursday, with the rest of the time dedicated to lab-work and statistical analysis. The student will be able to access the previous year's field and lab dataset from the start date to begin their analyses. They will have 4 weeks in the field and 4 weeks in the lab to work on their statistical analysis and for write up.

References:

1. Attuquayefio, D.K., Gorman, M.L., Wolton, R.J., 1986. Home range sizes in the Wood mouse Apodemus sylvaticus: habitat, sex and seasonal differences. Journal of Zoology 210, 45–53. https://doi.org/10.1111/j.1469-7998.1986.tb03619.x
2. Howerton, C.L., Garner, J.P., Mench, J.A., 2012. A system utilizing radio frequency identification (RFID) technology to monitor individual rodent behavior in complex social settings. Journal of Neuroscience Methods 209, 74–78. https://doi.org/10.1016/j.jneumeth.2012.06.001
3. Lopes, P.C., Block, P., König, B., 2016. Infection-induced behavioural changes reduce connectivity and the potential for disease spread in wild mice contact networks. Sci Rep 6, 31790. https://doi.org/10.1038/srep31790
4. Raulo, A., Bürkner, P.-C., Finerty, G.E., Dale, J., Hanski, E., English, H.M., Lamberth, C., Firth, J.A., Coulson, T., Knowles, S.C.L., 2024. Social and environmental transmission spread different sets of gut microbes in wild mice. Nat Ecol Evol 8, 972–985. https://doi.org/10.1038/s41559-024-02381-0

G. Main responsibilities

- (35%): Field work, live-trapping mice and collecting morphometric and parasitological data
- (30%): Helping the team prepare for field work and processing field samples for parasitology and lab analysis
- (25%): Conducting their statistical analyses (with help of mentor)
- (10%): Writing up their report on their placement work
- 8 times during placement: Attend our 1-hour lab meetings, for an opportunity to learn about related research being conducted and meet PIs and other PhD students in related research groups.

Key contacts and relationships

- **Amy Pedersen, PI, amy.pedersen@ed.ac.uk**
- **Alexandra Vavrik, Research Assistant, avavrik@ed.ac.uk**
- **Rhoslyn Howroyd, PhD, r.c.howroyd@sms.ed.ac.uk**

H. Knowledge, skills and experience required for the role

Attribute	Essential	Desirable
Education, Qualifications & Training	• Currently studying a Biological Sciences BSc	• Experience with animal handling (rodents particularly) • Field work experience
Knowledge & Experience	• Basic R Studio skills • Capable of working a physical job; carrying equipment, walking through forest, patrolling the field site	• Advanced R Studio skills • Comfortable working outdoors under various weather conditions (rain, wind, cold, mud)

I. Planning and organising

- Punctuality: field days start at 8am sharp, and are time sensitive to minimise the time animals are in humane traps for.
- Time-management: adjusting time spent on different tasks as needed
- Gathering the kit required for field days following the kit-list, topping supplies up as needed, preparing enough traps to last the week
- Keeping an overview of tasks that need doing and which ones need prioritising
- Communicating: actively communicating in the field, reporting back on tasks completed off of a to-do list, signalling if supplies run low and need re-ordering

J. Problem solving

- Being part of decision-making around splitting tasks, organising a schedule, thinking about efficient ways of working
- Learning how data is collected in the larger project and gaining experience in study design and data management
- Reacting to situations that may arise during fieldwork such as time constraints or uncertainty over the data, in order to find ways to work around them

K. Decision making

- Participating in discussions around the planning and execution of fieldwork, making decisions around team structure and task division
- Using the large-scale dataset to answer a specific question
- Choosing how to best analyse data (incl. any transformations, choice of models etc.)

L. Length and timing of placement

We are reasonably flexible.
8 weeks – start date to be agreed.

M. Budget

The field work is covered by a standard NERC grant. However, if the student is interested in measuring corticosterone as a marker of stress, then we would request ~£300 for an ELISA kit.

N. Location and Equipment

Ashworth Laboratories, King's Buildings, Charlotte Auerbach Rd, Edinburgh EH9 3FL.

The student will have access to our laboratory and all necessary lab equipment to answer their question, as well as access to our field sites between Tuesday and Thursday every week during the placement that are woodlands sites within ~15 miles of Kings Buildings. We have a field car for transport from KB to the field sites.

O. Health & Safety requirements

This role requires a Protection of Vulnerable Groups Scheme (PVG) Registration:

P. Job hazards specific to the role

This role may result in potential exposure to certain hazards as listed below. These will be risk assessed by the school or department, which may require you to participate in, for example, health surveillance or follow other health and safety requirements.
• Working with animals, including farm animals, insects and birds.
• Working with pathogens or pathogen infected materials.

Q. Alternative/adjusted placement (remote placement only).

N/A