Dr Sam Paplauskas

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RESEARCH INTERESTS

I am a dedicated evolutionary ecologist and ecological geneticist specializing in the environmental and genetic drivers of species interactions. My research focuses on predator–prey and host–parasite systems, using a combination of fieldwork, laboratory experiments, and quantitative analyses to understand how these interactions evolve across environmental gradients and respond to climate-driven seasonal change.

EDUCATION

PhD in Ecology and Evolution (2018–2024)
IAPETUS Doctoral Training Partnership, University of Stirling, UK

- **Thesis:** *Predicting Epidemic Size and Disease Evolution in Response to Environmental Change*
- Supervisors: Dr Stuart Auld; Prof. Matthew Tinsley
- Leave of absence: 2021–2022 (COVID-19)

MSci in Biological Sciences (First Class Honours) (2013–2017)
University of Sheffield, UK

RESEARCH EXPERIENCE

JSPS Postdoctoral Fellow (Aug 2025 – Jan 2026)

Bioscience Education and Research Center, Utsunomiya University, Japan

- Awarded a competitive **Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellowship**
- Investigating **host defensive traits and competence** using **CRISPR-Cas9-mediated microinjection** in *Daphnia*
- Experience directly relevant to **mechanistic links between host phenotype, infection outcomes, and population-level disease dynamics**

Postdoctoral Fellow (Apr 2025 – May 2025)

Centre for Design and Innovation, Utsunomiya University, Japan

- Awarded a one-year postdoctoral fellowship (transitioned to JSPS)
- Developed independent research on **eco-evolutionary drivers of disease risk**

Doctoral Researcher (2018–2024)

University of Stirling, UK

- Awarded a competitive **NERC IAPETUS DTP studentship**
- Developed the **Disease Cycle conceptual model** to predict epidemic size under environmental change
- Quantified **host competence and parasite success** across 20 replicated host–parasite populations
- Conducted **time-series analyses** and **forecasting models** to predict epidemic dynamics
- Investigated **local adaptation and seasonal/environmental drivers** of infection using reciprocal transplant experiments
- Led a **meta-analysis** testing how host genetic and community diversity influence disease outcomes
- Published in *Nature Ecology & Evolution* and *Ecology & Evolution*

JSPS Summer Fellow (2019)

Utsunomiya University, Japan

- Awarded a competitive predoctoral fellowship
- Used **qPCR** to quantify gene expression linked to inducible host defences

BES Postgraduate Researcher (2017–2018)

University of Sheffield, UK

- Awarded **British Ecological Society Small Research Grant**
- Studied **environmentally mediated shifts in host performance and susceptibility**
- Co-PI with Prof. Andrew Beckerman

BSPP Undergraduate Researcher (2016)

University of Sheffield, UK

- Awarded **British Society for Plant Pathology Vacation Bursary**
- Applied **metabolomics** to understand inducible defences against fungal pathogens
- Resulted in a peer-reviewed publication

PUBLICATIONS

Peer-Reviewed Journal Articles

4. Paplauskas, S (2025). *A Conceptual Disease Cycle Model to Link the Size of Past and Future Epidemics. Ecology and Evolution,* 15(8). DOI
3. Paplauskas S, Morton O, Hunt M, Courage A, Swanney S, Dennis SR, Becker D, Auld SKJR, Beckerman AP (2024). *Predator-induced shape plasticity in Daphnia pulex. Ecology and Evolution*, 14(2). DOI
2. Paplauskas S, Brand J, Auld SKJR (2021). *Ecology directs host–parasite coevolutionary trajectories across Daphnia–microparasite populations. Nature Ecology and Evolution*, 5(4), 480–486. DOI
1. Wilkinson SW, Pastor V, Paplauskas S, Pétriacq P, Luna E (2018). *Long-lasting β-aminobutyric acid-induced resistance protects tomato fruit against Botrytis cinerea. Plant Pathology*, 67(1), 30–41. DOI

Preprints

- Paplauskas, S (2025). Borrowing data from other populations to forecast epidemic size. *Authorea*. DOI
- Paplauskas S (2024). An 'Epidemic Diversity' conceptual model explains how host genetic diversity affects variation in parasite success. *BioRxiv*. DOI

ACADEMIC DISTINCTIONS & FUNDING (selected)

- JSPS Postdoctoral Fellowship (£27,500)
- CDI Postdoctoral Fellowship (£15,500)
- NERC IAPETUS PhD Scholarship (£90,000)
- British Ecological Society Small Research Grant (£5,000)
- Multiple competitive international fellowships and awards

PROFESSIONAL AFFILIATIONS

- Member of the **British Ecological Society** and **Ecological Society of Japan**