Dr Sam Paplauskas
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RESEARCH INTERESTS

As a dedicated researcher in evolutionary ecology, my interests include host-parasite interactions and disease ecology. My work primarily focuses on species coevolution using the *Daphnia-Pasteuria* model system. I am also keen to explore the social dynamics of disease transmission.

EDUCATION

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

- Thesis: *Predicting Epidemic Size and Disease Evolution in Response to Environmental Change*
- Supervisor: Professor Matthew Tinsley
- Leave of Absence: 2021–2022 due to COVID-19

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

RESEARCH EXPERIENCE

Part-time Researcher (April 2025–April 2026)

Bioscience Education and Research Center, Utsunomiya University, Japan

- Investigating genetic control of predator-induced defence in *Daphnia* using CRISPR-Cas9-mediated transgenic lines.
- Comparative analysis of transgenic and wild-type lines under varying environmental conditions.
- Collaboration with Asst. Prof. Hitoshi Miyakawa.

Doctoral Researcher (2018–2024)

Biological and Environmental Sciences, University of Stirling, Scotland, UK

- Developed the conceptual *Disease Cycle* model to predict epidemic size through a coevolutionary lens.
- Conducted phenotypic trajectory analysis on 20 *Daphnia* host-parasite populations, published in *Nature Ecology & Evolution*.
- Developed time-series forecasting models for epidemic prediction.
- Investigated host-parasite local adaptation using reciprocal transplant experiments.
- Proposed and validated the *Epidemic Diversity* model through meta-analysis.

Pre/Postdoctoral Summer Fellowship (2019)

Bioscience Education and Research Center, Utsunomiya University, Japan

- Analyzed gene expression changes in *Daphnia* using RT-qPCR.

Research Assistant (2017–2018)

Animal and Plant Sciences, University of Sheffield, England, UK

- Co-PI on a British Ecological Society Small Grant examining predator-induced shifts in *Daphnia* thermal performance curves.
- Collaborated on an industrial biotechnology project investigating protein production in algae due to *Daphnia* grazing.

PUBLICATIONS

Peer-Reviewed Journal Articles

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). *A conceptual 'Disease Cycle' model to link past and future epidemics. Authorea.* DOI
- Paplauskas S, Duthie AB, Tinsley MC (2024). *The effect of host population genetic diversity on variation in parasite success. bioRxiv.* DOI

GRANTS & FELLOWSHIPS

- **Pre/Postdoctoral Summer Fellowship, Japan Society for the Promotion of Science (JSPS) London** (2019)
  Total Funding: ¥1,042,500 (approx. £6,800)
- **IAPETUS Doctoral Training Partnership PhD Scholarship, Natural Environment Research Council (NERC)** (2018–2024)
  Total Funding: £90,000
- **Small Research Grant, British Ecological Society (BES)** (2017–2018)
  Total Funding: £5,000
- **Scurfield Memorial Bursary, University of Sheffield** (2017–2018)
  Total Funding: £500
- **Government of Ireland Postgraduate Scholarship, Trinity College Dublin, Irish Research Council (IRC)** (2018) *(Declined)*
  Total Funding: €93,000
- **ACCE Doctoral Training Partnership PhD Scholarship, University of Liverpool, Natural Environment Research Council (NERC)** (2017) *(Declined)*
  Total Funding: £90,000
- **Undergraduate Vacation Bursary, British Society for Plant Pathology (BSPP)** (2016)
  Total Funding: £6,900
- **Widening Participation Activities, Faculty of Science, University of Sheffield** (2016)
  Total Funding: £200

SELECTED PRESENTATIONS & CONFERENCES

- **"Predicting epidemic size in natural populations"** – BES PhD Symposium, University of Stirling, Scotland, UK, 2023 (Oral Presentation)

- **“The ability of locally adapted hosts to withstand competition from migrants”** – BES Annual Meeting, Belfast, Northern Ireland, UK, 2023 (Poster Presentation)
- **“Links between past and future epidemics”** – IAPETUS Annual Conference, University of Glasgow, Scotland, UK, 2019 (Poster Presentation)

AWARDS & HONORS

- **Collaboration of the Year Award**, University of Sheffield, England, UK (2016)
- **Best Poster Prize**, IV International Symposium for the Society of Spanish Researchers in the UK, University College London, England, UK (2016)

TECHNICAL & RESEARCH SKILLS

Programming & Data Analysis

- Python, R, SPSS
- Time-series analysis, ARIMA forecasting, mathematical modeling of infectious diseases
- Phenotypic trajectory analysis, geometric morphometrics, meta-analysis, advanced statistics
- Data wrangling and visualization

Lab Techniques

- RT-qPCR, immunohistochemistry (IHC), UPLC-MS

Software & Tools

- BLAST, ImageJ/Fiji, RMarkdown, Mendeley

PROFESSIONAL AFFILIATIONS

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