Lukas Eigentler (he/him)

Assistant Professor (University of Warwick)

last updated 18th September 2025

Employment

since 2024   **Assistant Professor**, *University of Warwick*, Coventry, United Kingdom

2023   **Postdoctoral Researcher**, *Universität Bielefeld*, Bielefeld, Germany

2020-2022   **Postdoctoral Research Assistant**, *University of Dundee*, Dundee, United Kingdom

Education

2016–2020   **PhD**, *Maxwell Institute Graduate School in Analysis and its Applications, Heriot-Watt University and The University of Edinburgh*, Edinburgh, United Kingdom
Winner of Reinhart Heinrich Award 2020

2013–2016   **BSc Mathematics First Class Honours Degree**, *University of Dundee*, Dundee, United Kingdom

2012–2013   **Undergraduate course Technische Mathematik**, *Universität Innsbruck*, Innsbruck, Austria
60 ECTS.

2004–2012   **Matura with distinction**, *Bundesrealgymnasium Adolf-Pichler-Platz*, Innsbruck, Austria

Peer-reviewed publications

[17] EIGENTLER, L. and REINHOLD, K.: Maintenance and evolution of phenotypic variance in a prey defence trait examined with a dynamic predator-prey model for clonal populations. *Journal of Evolutionary Biology* (2025). DOI: 10.1093/jeb/voaf082.

[16] EIGENTLER, L. and SENSI, M.: Delayed loss of stability of periodic travelling waves: insights from the analysis of essential spectra. *Journal of Theoretical Biology* 595 (2024), p. 111945. DOI: 10.1016/j.jtbi.2024.111945.

[15] REINHOLD, K., EIGENTLER, L. and KIKUCHI, D. W.: Evolution of individual variation in a competitive trait: a theoretical analysis. *Journal of Evolutionary Biology* 37.5 (2024), pp. 538–547. DOI: 10.1093/jeb/voae036.

[14] ROSAZZA, T., EARL, C., EIGENTLER, L., DAVIDSON, F. A. and STANLEY-WALL, N. R.: Reciprocal sharing of extracellular proteases and extracellular matrix molecules facilitates bacillus subtilis biofilm formation. *Molecular Microbiology* 122.2 (2024), pp. 184–200. DOI: 10.1111/mmi.15288.

[13] EIGENTLER, L. and SHERRATT, J. A.: Long-range seed dispersal enables almost stationary patterns in a model for dryland vegetation. *J. Math. Biol.* 86.15 (2023). DOI: 10.1007/s00285-022-01852-x.

[12] ROSAZZA, T., EIGENTLER, L., EARL, C., DAVIDSON, F. A. and STANLEY-WALL, N. R.: *Bacillus subtilis* extracellular protease production incurs a context-dependent cost. *Mol. Microbiol.* 120.2 (2023), pp. 105–121. DOI: 10.1111/mmi.15110.
This paper has been the "Editor's Choice" of this issue.

[11] BRIGANTI WIPRACHTIGER, L. and EIGENTLER, L.: The effects of seasonality on competition for a limiting resource. *SIAM Undergrad. Res. Online* 15 (2022). DOI: 10.1137/21S1458132.

[10] EIGENTLER, L., STANLEY-WALL, N. R. and DAVIDSON, F. A.: A theoretical framework for multi-species range expansion in spatially heterogeneous landscapes. *Oikos* 2022.8 (2022), e09077. DOI: 10.1111/oik.09077.

[9] EIGENTLER, L., DAVIDSON, F. A. and STANLEY-WALL, N. R.: Mechanisms driving spatial distribution of residents in colony biofilms: an interdisciplinary perspective. *Open Biol* 12.220294 (2022). DOI: 10.1098/rsob.220194.

[8] EIGENTLER, L., KALAMARA, M., BALL, G., MACPHEE, C. E., STANLEY-WALL, N. R. and DAVIDSON, F. A.: Founder cell configuration drives competitive outcome within colony biofilms. *ISME J.* 16.6 (2022), pp. 1512–1522. DOI: 10.1038/s41396-022-01198-8.

[7] EIGENTLER, L.: Species coexistence in resource-limited patterned ecosystems is facilitated by the interplay of spatial self-organisation and intraspecific competition. *Oikos* 130.4 (2021), pp. 609–623. DOI: 10.1111/oik.07880.

[6] EIGENTLER, L. and SHERRATT, J. A.: An integrodifference model for vegetation patterns in semi-arid environments with seasonality. *J. Math. Biol.* 81 (2020), pp. 875–904. DOI: 10.1007/s00285-020-01530-w.

[5] EIGENTLER, L. and SHERRATT, J. A.: Effects of precipitation intermittency on vegetation patterns in semi-arid landscapes. *Phys. D* 405 (2020), p. 132396. DOI: 10.1016/j.physd.2020.132396.

[4] EIGENTLER, L. and SHERRATT, J. A.: Spatial self-organisation enables species coexistence in a model for savanna ecosystems. *J. Theor. Biol.* 487 (2020), p. 110122. DOI: 10.1016/j.jtbi.2019.110122.

[3] EIGENTLER, L.: Intraspecific competition in models for vegetation patterns: decrease in resilience to aridity and facilitation of species coexistence. *Ecol. Complexity* 42 (2020), p. 100835. DOI: 10.1016/j.ecocom.2020.100835.

[2] EIGENTLER, L. and SHERRATT, J. A.: Metastability as a coexistence mechanism in a model for dryland vegetation patterns. *Bull. Math. Biol.* 81.7 (2019), pp. 2290–2322. DOI: 10.1007/s11538-019-00606-z.

[1] EIGENTLER, L. and SHERRATT, J. A.: Analysis of a model for banded vegetation patterns in semi-arid environments with nonlocal dispersal. *J. Math. Biol.* 77.3 (2018), pp. 739–763. DOI: 10.1007/s00285-018-1233-y.

Other publications

[2] EIGENTLER, L., REINHOLD, K. and KIKUCHI, D.: Feisty fish and birds with attitude: why does evolution not lead to identical individuals? *The Science Breaker* 10.3 (2024). DOI: 10.25250/thescbr.brk793.

[1] EIGENTLER, L.: The Reinhart-Heinrich Doctoral Thesis Award 2020. *European Communications in Mathematical and Theoretical Biology* 25 (2022), pp. 4–9.

Peer review

I have been a regular peer reviewer for the following funding bodies:

since 2024 **Dutch Research Council (NWO)**
Open Competition Domain Science

since 2024 **British Council**
International Science Partnerships Fund (ISPF)

I have been a regular peer reviewer for the following journals:

since 2025 **Ecology**

since 2025	**Geophysical Research Letters**
since 2025	**Physica D**
since 2024	**SIAM Journal on Applied Mathematics**
since 2024	**Oikos**
since 2024	**Proceedings of the Royal Society B**
since 2023	**CATENA**
since 2023	**Cell Press Community**
since 2023	**Chaos, Solitons & Fractals**
since 2023	**Qualitative Theory of Dynamical Systems**
since 2022	**Journal of Mathematical Biology**
since 2022	**Bulletin of Mathematical Biology**
since 2022	**Journal of Theoretical Biology**
since 2022	**The ISME Journal**
since 2022	**Methods in Ecology and Evolution**
since 2022	**Scientific Reports**
since 2021	**The IMA Journal of Applied Mathematics**
since 2021	**Journal of Nonlinear Dynamics**
since 2021	**Applied Mathematics and Computation**
since 2021	**Journal of Nonlinear Science**

Awards, Prizes & Grants

2025–2026 **Collaborations with Developing Countries - Scheme 5**, *London Mathematical Society*
Project title: *Mathematical modelling and analysis of eco-evolutionary dynamics in forest fire systems* with Mrinal Kanti Pal, Institute of Mathematical Sciences, Chennai, India (£3,000)

2024–2026 **International Exchanges**, *Royal Society*
Project title: *Livestock grazing in Sub-Saharan humid savannas: identifying optimal strategies and assessing epidemiological risk* with Ivric Valaire Yatat Djeumen, University of Yaounde I, Cameroon (£12,000)

2022 **Reinhart Heinrich Award 2020**, *European Society for Mathematical and Theoretical Biology*
Annual thesis prize awarded by the European Society for Mathematical and Theoretical Biology.

2021 **EMS Thesis Prize Commendation**, *Edinburgh Mathematical Society*
Certificate of Commendation in recognition of my PhD thesis entitled "Modelling dryland vegetation patterns: nonlocal dispersal, temporal variability in precipitation and species coexistence".

Invited talks

09/2025 **Mathematical modeling of complex biological systems**, *University of Messina*
Invited speaker

12/2024 **Mathematics in Life Sciences Meeting on "Time-Delay Systems in Life Sciences"**, *University of Nottingham*
Invited speaker

11/2024 **Applied Mathematics seminar**, *University of Glasgow*

08/2024 **XLIV Dynamic Days**, Bremen
Invited speaker at minisymposium Vegetation pattern formation

04/2024 **QSEB seminar**, *University of Warwick*

04/2024 **BAMC 2024**, *University of Newcastle*
Invited speaker at minisymposium "Nonlinear systems in biology"

02/2024	**SBIDER seminar**, *University of Warwick*
09/2023	**Modelling Diffusive Systems 2023: Theory & Biological Applications**, *International Centre for Mathematical Sciences (ICMS)*, Edinburgh
05/2023	**Applied Mathematics seminar**, *University of Durham*
03/2023	**MBRG seminar**, *Maxwell Institute*, Edinburgh
02/2023	**FSPM^2 seminar**, *University of Bielefeld*
01/2023	**MoLSS/CMCB seminar**, *University of Surrey*
12/2022	**Seminar on Analysis and Numerics of PDEs**, *University of Innsbruck*
10/2022	**Mathematical Biology Seminar**, *University of St Andrews*
09/2022	**ECMTB 2022**, *University of Heidelberg* Reinhart-Heinrich Prize (plenary) talk.
08/2022	**Evolution Seminar**, *University of Bielefeld*
06/2022	**MPDEE 2022**, *University of Turin (online)* Invited speaker at minisymposium "Vegetation"
04/2022	**Applied Analysis Seminar**, *University of Graz (online)*
11/2021	**Mathematical Biology Seminar**, *University of St Andrews (online)*
11/2021	**Workshop on Mathematical Modelling for Biosciences**, *University of Yaoundé, (online)* Invited speaker
08/2021	**XL Dynamics Days Europe**, *University of Nice (online)* Invited speaker at minisymposium "Pattern forming fronts in reaction-diffusion systems"
05/2021	**Mathematics Seminar**, *University of Dundee (online)*
10/2019	**Applied Analysis Seminar**, *University of Strathclyde*, Glasgow
07/2019	**Equadiff 2019**, *University of Leiden* Invited speaker at minisymposium "Nonlocal dynamical systems"
07/2018	**ECMTB 2018**, *University of Lisbon* Invited speaker at minisymposium "Spatial patterns across ecology: differences and similarities".

Organised Events

since 2025	**Warwick Mathematics Colloquium**, *University of Warwick* Organiser
09/2025	**Mathematical Modelling of Pattern Formation in Biological Systems** , *University of Warwick* Organiser
2024–2025	**SBIDER Seminar**, *University of Warwick* Seminar organiser
2023	**Behaviour & Evolution Seminar**, *University of Bielefeld* Seminar organiser
02/2020	**SIAM-IMA Student Chapter PhD Colloquium 2020**, *International Centre for Mathematical Sciences*, Edinburgh Co-organiser.
05/2019	**SIAM Student Chapter Symposium 2019**, *International Centre for Mathematical Sciences*, Edinburgh Co-organiser.

12/2018   **Scottish Mathematical Biology Forum**, *International Centre for Mathematical Sciences*, Edinburgh
Member of organising committee.

09/2017   **3ʳᵈ MIGSAA Annual Colloquium**, *International Centre for Mathematical Sciences*, Edinburgh
Co-organiser.

Professional Memberships

2019–2020   **President of the Edinburgh SIAM & IMA Student Chapter**

2018–2019   **Vice-president of the Edinburgh SIAM Student Chapter**

Teaching qualifications

since 2025   **Fellow of the Higher Education Academy (FHEA)**, *Advance HE*

since 2022   **Associate Fellow of the Higher Education Academy (AFHEA)**, *Advance HE*

Taught courses

since 2024   **MA133 Differential Equations**, *University of Warwick*

since 2024   **MA256 Introduction to Mathematical Biology**, *University of Warwick*

2023   **eKVV 202411 Key Concepts in Evolutionary Ecology**, *Universität Bielefeld*

2021–2022   **MA42002 Mathematical Biology II**, *University of Dundee*

PhD supervision

since 2025   **Joseph Miller**, *University of Warwick*

Public engagement

since 2024   **I'm a mathematician. Get me out of here**
Regular chat-based sessions in which I, together with other mathematicians, answer questions from school pupils.

2022   **Magnificent Microbes**, *University of Dundee*
Development of a role-playing card game for 9-11-year olds with a focus on bacterial competition and cooperation. Distributed across five schools in Dundee and Tayside.