

Curriculum Vitae

Dr. Elias Ehrlich

EDUCATION

08/2015 – 04/2019

PhD: Ecology | Dept. Ecology and Ecosystem Modelling, University of Potsdam, Germany
Thesis Title: “On the Role of Trade-offs in Predator-Prey Interactions”

04/2016-03/2018

Part-time academic studies on practical computer science | Fernuniversität Hagen, Germany
Courses on data structures, algorithms, imperative and object-orientated programming

10/2012 – 06/2015

MSc: Ecology, Evolution and Conservation | University of Potsdam, Germany
Thesis Title: “Trade-offs between defense and competitiveness govern eco-evolutionary dynamics in predator-prey models”

10/2009 – 09/2012

BSc: Life Science | University of Potsdam, Germany
Thesis Title: „Einfluss eines Fischsterbens im Winter und Effekt von allochthonem Material auf die Dynamik funktioneller Gruppen im Plankton von eutrophen Flachwasserseen“

RESEARCH EXPERIENCE AND EMPLOYMENT HISTORY

Since 02/2021

Post Doc | Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB), Berlin, Germany
Modelling of pike fisheries and leading a participatory stakeholder process
“Boddenhecht” project

03/2020-01/2021

Post Doc | University of Potsdam, Germany
Modelling of populations and food webs, theory building on perturbation impacts, lake data analysis
DFG Priority Program “DynaTrait”

04/2019-02/2020

Post-Doc | Centre for Ocean Life at the DTU, Lyngby, Denmark and University of Potsdam, Germany
Developing and analysing spatially explicit individual-based models of toxic algae
DFG start-up funding for junior scientists

08/2015-03/2019

Academic Employee | University of Potsdam, Germany
Modelling of populations and food webs, ecological theory building on trade-offs, lake data analysis
DFG Priority Program “DynaTrait”

10/2012 – 02/2015

Academic Tutor and Research Assistant | University of Potsdam, Germany

AWARDS

10/2015

“Jacob-Jacobi-Preis” | Leibniz-Kolleg Potsdam
for the best final Master’s degree in 2014/2015 of Faculty of Science of University of Potsdam

10/2012-03/2015

Scholarship | Studienstiftung des deutschen Volkes

PUBLICATIONS

- Ehrlich, E., and U. Gaedke (2020). Coupled changes in traits and biomasses cascading through a tritrophic plankton food web. *Limnology and Oceanography*, 65 (10): 2502-2514

- Ehrlich, E., N. J. Kath and U. Gaedke (2020). The shape of a defense-growth trade-off governs seasonal trait dynamics in natural phytoplankton. *ISME Journal*: 1-12.
- Ehrlich, E., and U. Gaedke (2018). Not attackable or not crackable - How pre- and post-attack defenses with different competition costs affect prey coexistence and population dynamics. *Ecology and Evolution*, 8, 6625-6637
- Ehrlich, E., L. Becks, and U. Gaedke (2017). Trait-fitness relationships determine how trade-off shapes affect species coexistence. *Ecology*, 98 (12): 3188–3198.

TEACHING EXPERIENCE

- Lecture in “Marine Ecology” on harmful algal blooms, University of Potsdam (2020)
- Lecture in “Theoretical Ecology II”, University of Potsdam (2017)
- Tutorials on Ecology, University of Potsdam (2015, 2016)
- Lecture on microplastic in the oceans offered to public audience. “Ein Meer aus Plastik”, Potsdamer Tag der Wissenschaft (2015, 2016, 2017 and 2018)
- Interactive presentation on the ecological footprint and sustainability for children. “Eine Erde für Alle!”, Potsdamer Tag der Wissenschaft (2015, 2016, 2017 and 2018)
- Several lectures on principles of scientific work and sustainability offered to school classes (2012-2017)

OUTREACH AND SCIENCE COMMUNICATION

- Contribution to Nature Research Microbiology Community “About Darwinian Demons, varying winners and lost losers in phytoplankton”, <https://go.nature.com/38IMZI9> (2020)
- Interview on microplastic in the oceans. “Besser kein Plastik”, *Portal – Das Potsdamer Universitätsmagazin*, Potsdam, March 2016, p. 7
- Interview on plastic in the oceans. “Ein gigantischer Plastikteppich”, *Märkische Allgemeine (MAZ)*, Potsdam, 29 April 2015, p. V1
- Interview on the ecological footprint. “Wie der Eisbär beim Energiesparen hilft”, *Märkische Allgemeine (MAZ)*, Potsdam, 10 June 2014, p. 17

SELECTED CONFERENCE CONTRIBUTIONS

- Talk: “Evolution of toxins as a public good in phytoplankton” (2020). Annual DynaTrait Meeting, Potsdam, Germany
- Invited talk: “On the role of trade-offs in predator-prey interactions” (2019) at the Centre for Ocean Life, DTU Lyngby, Denmark
- Talk: “Trait-fitness relationships determine how trade-off shapes affect species coexistence” (2018). Models in Population Dynamics, Ecology, and Evolution (MPDEE’18), Leicester, UK
- Poster: “Key properties of trade-offs affecting coexistence and population dynamics” (2017). Workshop on trait-based approaches to ocean life, Bergen, Norway
- Poster: “Seasonal trait coupling of phyto- and zooplankton in Lake Constance – data and models” (2017). International DynaTrait Conference, Hannover, Germany
- Talk: “Multidimensional Trade-offs and Coexistence” (2016). Experimental Evolution & Community Dynamics Minisymposium, Plön, Germany
- Poster: “The shape of trade-offs determines long- and short-term maintenance of functional diversity” (2016). European Conference on Mathematical and Theoretical Biology (ECMTB), Nottingham, UK
- Talk: “Biodiversity effects in phytoplankton communities – combining experiments and modelling” (2013). Annual meeting of the German Limnological Society (DGL) and of the Ecological Society of Germany, Austria and Switzerland (GfÖ), Potsdam, Germany

PEER REVIEWS

- Peer reviewed for *Ecological Monographs*, *Freshwater Biology*, *Limnology and Oceanography*, *Hydrobiologia*, *Functional Ecology* and *Ecology Letters*

ADDITIONAL SKILLS

- **Teaching, Tutoring and Presenting**
- **Software:** Julia, R, Python, Matlab, Mathematica, C/C++, Latex
- **Nonlinear dynamics and climate modelling** (courses in physics department)
- **Languages:** German (first language), English (fluent, UNICert III), French (basics)