

CANAN KARAKOÇ

📍 Lennon Lab, Department of Biology, Indiana University, 1001 East 3rd Street, Bloomington, IN 47405 USA

✉ ckarakoc@iu.edu | 🌐 Website

EDUCATION

- Ph.D. in Biology, *magna cum laude*** 2013 – 2019
University of Leipzig🔗, HIGRADE Graduate School🔗 Leipzig, Germany
Advisers: Hauke Harms🔗 and Antonis Chatzinotas🔗
Project title: "Context Dependency of Community Dynamics: Predator-Prey Interactions Under Ecological Disturbances"
- M.Sc. in Global Change Ecology** 2009 – 2012
University of Bayreuth🔗, Elite Network Bavaria(ENB)🔗 Bayreuth, Germany
Advisers: Björn Reineking, Steffen Kolb
- M.Sc in Biology** 2005 – 2008
Cumhuriyet University🔗 Sivas, Turkey
- B.Sc in Biology (Minor: Molecular Biology)** 2000 – 2004
Akdeniz University🔗 Antalya, Turkey

PROFESSIONAL EXPERIENCE

- Lennon Lab, Department of Biology, Indiana University** 2021 - ongoing
Postdoctoral researcher Bloomington, IN, USA
· Microbial ecology and evolution. Adviser: Jay T. Lennon🔗
- Helmholtz Centre for Environmental Research-UFZ**
German Centre for Integrative Biodiversity Research (iDiv) 2018 - 2021
Postdoctoral researcher Germany
· Evolutionary ecology. Advisers: Antonis Chatzinotas🔗 and Stan Harpole🔗
- UFZ** 2013 - 2017
Research assistant Leipzig, Germany
· Experimental community ecology. WG Microbial Interactions Ecology🔗
- iDiv** 2015 - 2016
Guest research assistant Leipzig, Germany
· Experimental community ecology. WG Experimental Interactions Ecology🔗
- University of Thessaly** 2016 & 2014
Guest research assistant, DAAD Scholarship Larissa, Greece
· Applied microbial ecology. Department of Biochemistry and Biotechnology🔗
- Max Planck Institute for Developmental Biology** 2011
Intern, ENB travel grant Tübingen, Germany
· Evolutionary ecology. Department of Molecular Biology🔗
- Technical University of Munich** 2010
Intern, ENB travel grant Munich, Germany
· Microbial ecology. Technical University of Munich, Department of Soil Ecology🔗

University of Bayreuth*Technical assistant*

2010 – 2012

Bayreuth, Germany

- Field/lab work. University of Bayreuth, Department of Soil Physics; Department of Biogeography (EVENT); Department of Plant Physiology (TERRECO) and Agroecosystem Research.

Cumhuriyet University*Research & teaching assistant*

2005 – 2008

Sivas, Turkey

- Applied microbial ecology. Department of Molecular Biology and Genetics.

Antalya State Hospital*Laboratory assistant*

2003

Antalya, Turkey

- Laboratories of Microbiology, Immunology & Biochemistry.

PUBLICATIONS

- Clark, A., Arnoldi, J.-F., Zelnik, Y., Barabas, G., Hodapp, D., **Karakoç, Canan**, König, S., Radchuk, V., Donohue, I., Huth, A., Jacquet, C., de Mazancourt, C., Mentges, A., Nothaaß, D., Shoemaker, L., Taubert, F., Wiegand, T., Wang, S., Chase, J., Loreau, M., and Harpole, S. (2021). General statistical scaling laws for stability in ecological systems. *Ecology Letters*, accepted.
- Saraiva, J. P., Worrich, A., **Karakoç, Canan**, Kallies, R., Chatzinotas, A., Centler, F., and Nunes da Rocha, U. (2021). Mining synergistic microbial interactions: A roadmap on how to integrate multi-omics data. *Microorganisms*, 9(4). Available at <https://www.mdpi.com/2076-2607/9/4/840>
- **Karakoç, Canan**, Clark, A. T., and Chatzinotas, A. (2020). Diversity and coexistence are influenced by time-dependent species interactions in a predator–prey system. *Ecology Letters*, 23(6):983–993. Available at <https://onlinelibrary.wiley.com/doi/pdf/10.1111/ele.13500>
- **Karakoç, C.** (2019). Context dependency of community dynamics: Predator-prey interactions under ecological disturbances. *Ph.D. Thesis*, Leipzig University. Can be downloaded at <https://nbn-resolving.org/urn:nbn:de:bsz:15-qucosa2-341500>
- Sendek, A.*, **Karakoç, C.***, Wagg, C., Domínguez-Begines, J., Couto, Martucci de Couto, G., Van der Heijden, M. G. A., Naz, A. A., Lochner, A., Chatzinotas, A., Klotz, S., Gómez-Aparicio, L., and Eisenhauer, N. (2019). Drought modulates interactions between arbuscular mycorrhizal fungal diversity and barley genotype diversity. *Equal contribution. *Scientific Reports*, 9(1):1–15. Available at <https://www.nature.com/articles/s41598-019-45702-1>
- **Karakoç, C.**, Radchuk, V., Harms, H., and Chatzinotas, A. (2018). Interactions between predation and disturbances shape prey communities. *Scientific Reports*, 8:2968. Available at <http://www.nature.com/articles/s41598-018-21219-x>
- Ozbayram, E., Akyol Ç., Ince B., **Karakoç C.**, and Ince O. (2018). Rumen bacteria at work: bioaugmentation strategies to enhance biogas production from cow manure. *Journal of Applied Microbiology*, 124(2):491–502. Available at <https://onlinelibrary.wiley.com/doi/full/10.1111/jam.13668>
- **Karakoç, C.**, Singer, A., Johst, K., Harms, H., and Chatzinotas, A. (2017). Transient recovery dynamics of a predator–prey system under press and pulse disturbances. *BMC Ecology*, 17:13. Available at <http://dx.doi.org/10.1186/s12898-017-0123-2>
- **Karakoç, C.** (2012). Population response to fluctuating temperature regimes – an analysis with a model microorganism. *M.Sc. Thesis*, University of Bayreuth. Can be downloaded at <https://drive.google.com/open?id=1G1qFInk2tTqpVSJmXC6x6KkmmvJ8uILH>

PRESENTATIONS

Presentations

- Contributed presentation (2020). Diversity and coexistence are influenced by time-dependent species interactions in a predator-prey system. ESA Annual Meeting, virtual.
- Contributed presentation (2019). Diversity and stability are directly linked to fluctuating species interactions in a predator-prey system. GfÖ, Münster, Germany.
- Contributed presentation (2015). Understanding community assembly mechanisms through integrative approaches, EEf-SiTE - Ecology at the Interface, 2015, Rome, Italy.
- Contributed presentation (2014). Understanding the role of species interactions under environmental change: Microbial model systems as tools in ecological theory. YoMo Workshop - Ecological modeling across disciplines, Hann. Münden, Germany
- Invited presentation (2014/2016). Patterns and processes under environmental fluctuations: Experiments with microbial model systems. University of Thessaly, Department of Biochemistry and Biotechnology, Larissa, Greece.

Posters

- Poster (2021). Community constrains in adaptation to stressors. ESA Annual Meeting, virtual.
- Posters (2018). (a) Resolving Complex Microbial Community Dynamics: A causality analysis with microbial model systems. (b) Impact of Nutrient Levels and Stoichiometry on Microbial Freshwater Community and Functioning in Microcosm Experiments. ISME17, Leipzig, Germany.
- Poster (2014). Transient dynamics of trophically interacting species after disturbance. HETEROCLIM: The response of organisms to climate change in heterogeneous environments, Loches, France.

PROFESSIONAL SKILLS

Computer programs

Proficient	R programming language, tidyverse, \LaTeX
Familiar with	Python, Bash, NetLogo, QGIS/ArcGIS, ImageJ

Lab

Proficient	Microcosms consisting of viruses, bacteria, protozoa
Familiar with	Grassland & green house experiments

Illustration/Science communication

Pen & paper, InkScape, Adobe Illustrator/InDesign
Procreate, Affinity Designer

Languages

English	Fluent speaking & writing
German	Advanced speaking & writing
Turkish	Fluent speaking & writing

ACADEMIC MENTORING & TEACHING

Primary supervision

- B.Sc. project (2020 – 2021). Effect of environmental noise on antibiotic and bacteriophage resistance evolution, Klara-Isabell G., Leipzig University.
- B.Sc. project (2020 – 2021). Fitness costs of antibiotic resistance in various environments, Joanna S., Leipzig University.
- Internship (2018 – 2019) and Master Thesis (2019–2020). Evolutionary rescue in complex communities, Alla K., Leipzig University.
- Internship (2014). Predator–prey interactions under disturbances, Jana H., University of Kassel.

Mentoring

- B.Sc. project (2021 – ongoing). Effect of environmental noise on microbial evolution, Philipp K., Leipzig University.
- PhD chapter (2019 – 2020). Mechanisms promoting co-existence of blood born parasites in African buffalo, Caroline G., Oregon State University.
- PhD project (2018 – 2020). Microbial communities of amphibian skin microbiomes, spread of pathogenic chytrid fungus, Adriana C., University of Toulouse.
- PhD project (2018 – 2021). Microbial communities and their interactions across trophic levels in mountain lakes, Judit L., Leipzig University.

Teaching

- Graduate course (2021). Quantitative Biodiversity. Indiana University, Bloomington.
- Literature seminar (2020 – 2021). Microbial Ecology, Leipzig University.
- Practical training (2018 – 2021). Measuring microbial diversity, experimental evolution, R for data science, Leipzig University.
- Practical courses (2005 – 2008). General biology, Genetics, Molecular Genetics, Biochemistry, Animal Physiology, Microbiology, Introduction to Molecular Biology, Molecular Cell Biology, Cumhuriyet University.

RELEVANT ACTIVITIES

Workshop: Trait-Based Eco-Evolutionary Modeling	2019
Participant, led by Prof. Klausmeier	Leipzig, Germany
Workshop: Filling in gaps in global understanding of ecological stability and coexistence	2019
Invited participation	Leipzig, Germany
Workshop: an introduction to Bayesian statistics	2019
Participant, FlexPool travel grant	Münster, Germany
Course: Introduction to regression models with spatial and temporal correlation R-INLA	2018
Participant, Highland Statistics Ltd., UFZ DEVELOP training grant	Leipzig, Germany
Workshop: Eco-evolutionary dynamics in experimental microbial communities	2018
UFZ Controlling Chemicals' Fate invited speaker (Prof. Teppo Hiltunen) grant	Leipzig, Germany
Minisymposium: Experimental evolution & community dynamics	2018
Participant, FlexPool travel grant	Tvärminne, Finland
Winter school: Marine evolution – patterns and processes, Centre for Marine Evol. Bio.	2011
Participant, Swedish Royal Academy of Sciences travel award	Tjärnö, Sweden
Modelling the fate of microbes in aquatic habitats and assessment of their associated risks	2010
Participant, ENB travel grant	Vienna, Austria
Other graduate school activities	2013-2018
Courses, soft skill trainings Link to file	Leipzig, Germany

Other graduate school activities

Courses, soft skill trainings [Link to files](#)

2009-2012

Bayreuth, Germany

OUTREACH

Media interviews

- Interview (2018). Ökosystemforschung im Labor. Norddeutscher Rundfunk NDR.

Voluntary work

- Community outreach (2021). Bacterial viruses, Science Fest, Bloomington, IN.
- Social development (2020). Diversity, inclusion and equity working group, UFZ.
- Nature conservation activities (2000-2005) Biodiversity monitoring, Doga (BirdLife International partner), Turkey.
- Voluntary teaching (2004-2005). English, arts. Educational volunteers foundation of Turkey.
- Science philosophy and ethics (2004). Workshop, panel and public survey. Akdeniz University.
- Astronomy seminar series for non-astronomers (2000-2003) Physics department, Akdeniz University.

Memberships

- Ecological Society of America.