CANAN KARAKOÇ

Lennon Lab, Department of Biology, Indiana University, 1001 East 3rd Street, Bloomington, IN 47405 USA
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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 2010 – 2012
Technical assistant *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 2005 – 2008
Research & teaching assistant *Sivas, Turkey*
· Applied microbial ecology. Department of Molecular Biology and Genetics.

Antalya State Hospital 2003
Laboratory assistant *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=1GlqFInk2tTqpVSJmXC6x6KkmmvJ8uILH`

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

- Internship (2022). Stability of metabolic exchange and dormancy, Melih Ç., Indiana University.
- 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

- High school project (2021-2022). Complexity Affects Structural Stability: Using Protist Microcosms and Mathematical Modeling to Navigate Realism in Theoretical Ecology, OPRFHS IRDI, Chicago,IL.
- B.Sc. project (2021). 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

Course: Origin of Life *2022*
Participant *Complexity Explorer, Santa Fe Institute*

Workshop: GEMS Biology Integration Institute Bioinformatics *2022*
Participant *Urbana, IL, US*

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 Acadademy 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 *2009-2012*
Courses, soft skill trainings Link to file *Bayreuth, Germany*

OUTREACH/SERVICE

Administrative

· Leadership (2022). IU Postdoc association Career Development Board.

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.