

# CANAN KARAKOÇ

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

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## EDUCATION

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- 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

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- 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

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### 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

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### Computer programs

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

### Lab

<b>Proficient</b>	Microcosms consisting of viruses, bacteria, protozoa
<b>Familiar with</b>	Grassland & green house experiments

### Illustration/Science communication

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

### Languages

<b>English</b>	Fluent speaking & writing
<b>German</b>	Advanced speaking & writing
<b>Turkish</b>	Fluent speaking & writing

## ACADEMIC MENTORING & TEACHING

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### 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

- 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

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**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**

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

2013-2018

*Leipzig, Germany*

**Other graduate school activities**

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

2009-2012

*Bayreuth, Germany*

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**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.