

Nedim Tüzün

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Current position

9/2024 – **Postdoctoral fellow**, Marie Skłodowska-Curie Postdoctoral Fellowship
Project title: “Eco-evolutionary dynamics under light pollution”
Host: Prof. Dr. Luc De Meester
Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB), Berlin, Germany

Academic achievements

9/2022 – 8/2024 **Postdoctoral fellow**, Alexander von Humboldt Foundation fellowship
Project title: “Urban eco-evolutionary dynamics in freshwater systems”
Host: Prof. Dr. Luc De Meester
Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB), Berlin, Germany

3/2022 – 8/2022 **Postdoctoral fellow**, IGB Postdoctoral fellowship
Project title: “Urban eco-evolutionary dynamics in freshwater systems”
Host: Prof. Dr. Luc De Meester
Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB), Berlin, Germany

10/2021 – 2/2022 **Research fellow**, Laboratory of Aquatic Ecology, Evolution and Conservation
KU Leuven (University of Leuven), Leuven, Belgium

10/2018 – 10/2021 **Postdoctoral fellow**, Research Foundation Flanders (FWO) fellowship
Project title: “Eco-evolutionary dynamics of the extended pace-of-life syndrome in a range expanding damselfly”
Host: Prof. Dr. Robby Stoks
KU Leuven (University of Leuven), Leuven, Belgium

5/2014 – 5/2018 **PhD**, Laboratory of Aquatic Ecology, Evolution and Conservation
Thesis title: “Effects of urbanisation on the ecology and evolution of a damselfly”
Promoter: Prof. Dr. Robby Stoks
KU Leuven (University of Leuven), Leuven, Belgium

10/2011 – 9/2013 **MSc**, Munich Graduate School for Evolution, Ecology and Systematics (EES)
Thesis title: “Coping with social environment: aggression in response to relative opponent size in field crickets”

Promoter: Prof. Dr. Niels Dingemans

Ludwig-Maximilian University (LMU), Munich, Germany

Publications

(see also Google Scholar profile: <https://scholar.google.be/citations?user=VznYvzUAAAAJ&hl=en>)

- Theys, C., Verheyen, J., Janssens, L., **Tüzün, N.** & Stoks, R. (2023) Effects of heat and pesticide stress on life history, physiology and the gut microbiome of two congeneric damselflies that differ in stressor tolerance. *Science of The Total Environment*, 875, 162617.
- Theys, C., Verheyen, J., Delnat, V., Janssens, L., **Tüzün, N.** & Stoks, R. (2023) Thermal and latitudinal patterns in pace-of-life traits are partly mediated by the gut microbiome. *Science of The Total Environment*, 855, 158829.
- Stoks, R. & **Tüzün, N.** (2022) Coping with the complexity of interacting stressors, interacting responses, and their feedback loops. *Current Opinion in Insect Science*, 53, 100949.
- Tüzün, N.** & Stoks, R. (2022) A fast pace-of-life is traded off against a high thermal performance. *Proceedings of the Royal Society B*. 289, 20212414.
- Wang, Y.J., **Tüzün, N.**, Sentis, A. & Stoks, R. (2022) Thermal plasticity and evolution shape predator–prey interactions differently in clear and turbid water bodies. *Journal of Animal Ecology*, 91, 883–894.
- Brans, K.I., **Tüzün, N.**, Sentis, A., De Meester, L. & Stoks, R. (2022) Cryptic eco-evolutionary feedback in the city: urban evolution of prey dampens the effect of urban evolution of the predator. *Journal of Animal Ecology*, 91, 514-526.
- Tüzün, N.** & Stoks, R. (2021) Lower bioenergetic costs but similar immune responsiveness under a heatwave in urban compared to rural damselflies. *Evolutionary Applications*, 14, 24–35.
- Wang, Y.J., Sentis, A., **Tüzün, N.** & Stoks, R. (2021) Thermal evolution ameliorates the long-term plastic effects of warming, temperature fluctuations and heat waves on predator–prey interaction strength. *Functional Ecology*, 35, 1538– 1549.
- Tüzün, N.**, Savaşçı, B.B. & Stoks, R. (2021) Seasonal time constraints shape life history, physiology and behaviour independently, and decouple a behavioural syndrome in a damselfly. *Oikos*, 130, 274–286.
- Tüzün, N.**, De Block, M. & Stoks, R. (2020) Live fast, die old: oxidative stress as a potential mediator of an unexpected life-history evolution. *Oikos*, 129, 1330–1340.
- Theys, C., Verheyen, J., **Tüzün, N.** & Stoks, R. (2020) Higher mean and fluctuating temperatures jointly determine the impact of the pesticide chlorpyrifos on the growth rate and leaf consumption of a freshwater isopod. *Chemosphere*, 273, 128528.
- Tüzün, N.**, Debecker, S. & Stoks, R. (2020) Strong species differences in life history do not predict oxidative stress physiology or sensitivity to an environmental oxidant. *Journal of Animal Ecology*, 89, 1711– 1721.
- Wang, Y.J., Stoks, R., Sentis, A. & **Tüzün, N.** (2020) Support for the climatic variability hypothesis depends on the type of thermal plasticity: lessons from predation rates. *Oikos*, 129, 1040–1050.
- Van Dievel, M., **Tüzün, N.** & Stoks, R. (2019) Latitude-associated evolution and drivers of thermal response curves in body stoichiometry. *Journal of Animal Ecology*, 88, 1961–1972.

- Verheyen, J., **Tüzün, N.** & Stoks, R. (2019) Using natural laboratories to study evolution to global warming: contrasting altitudinal, latitudinal, and urbanization gradients. *Current Opinion in Insect Science*, 35, 10–19.
- Tüzün, N.**, Op de Beeck, L., Oliarinony, R., Van Dievel, M. & Stoks, R. (2018) Warming under seminatural outdoor conditions in the larval stage negatively affects insect flight performance. *Biology Letters*, 14, 20180121.
- Tüzün, N.** & Stoks, R. (2018) Evolution of geographic variation in thermal performance curves in the face of climate change and implications for biotic interactions. *Current Opinion in Insect Science*, 29, 78–84.
- Tüzün, N.** & Stoks, R. (2018) Pathways to fitness: carry-over effects of late hatching and urbanisation on lifetime mating success. *Oikos*, 127, 949–959.
- Tüzün, N.** & Stoks, R. (2017) Carry-over effects across metamorphosis of a pesticide on female lifetime fitness strongly depend on egg hatching phenology: a longitudinal study under seminatural conditions. *Environmental Science & Technology*, 51, 13949–13956.
- Tüzün, N.**, Müller, S., Koch, K. & Stoks, R. (2017) Pesticide-induced changes in personality depend on the urbanization level. *Animal Behaviour*, 134, 45–55.
- Tüzün, N.**, Op de Beeck, L., Brans, K.I., Janssens, L. & Stoks, R. (2017) Microgeographic differentiation in thermal performance curves between rural and urban populations of an aquatic insect. *Evolutionary Applications*, 10, 1067–1075.
- Stoks, R., Verheyen, J., Van Dievel, M. & **Tüzün, N.** (2017) Daily temperature variation and extreme high temperatures drive performance and biotic interactions in a warming world. *Current Opinion in Insect Science*, 23, 35–42.
- Brans, K.I., Jansen, M., Vanoverbeke, J., **Tüzün, N.**, Stoks, R. & De Meester, L. (2017) The heat is on: Genetic adaptation to urbanization mediated by thermal tolerance and body size. *Global Change Biology*, 23, 5218–5227.
- Tüzün, N.**, Op de Beeck, L. & Stoks, R. (2017) Sexual selection reinforces a higher flight endurance in urban damselflies. *Evolutionary Applications*, 10, 694–703.
- Janssens, L., **Tüzün, N.** & Stoks, R. (2017) Testing the time-scale dependence of delayed interactions: A heat wave during the egg stage shapes how a pesticide interacts with a successive heat wave in the larval stage. *Environmental Pollution*, 230, 351–359.
- Gyulavári, H.A., **Tüzün, N.**, Arambourou, H., Therry, L., Dévai, G. & Stoks, R. (2017) Within-season variation in sexual selection on flight performance and flight-related traits in a damselfly. *Evolutionary Ecology*, 31, 21–36.
- Tüzün, N.**, Debecker, S., Op de Beeck, L. & Stoks, R. (2015) Urbanisation shapes behavioural responses to a pesticide. *Aquatic Toxicology*, 163, 81–88.
- Deveci, O., Sukan, A., **Tüzün, N.** & Kocabas, E.E.H. (2010) Chemical composition, repellent and antimicrobial activity of *Schinus molle* L. *Journal of Medicinal Plants Research*, 4, 2211–2216.

Presentations at international meetings

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| 2018 - 2024 | The Society for Experimental Biology (SEB) Annual Meetings |
| 2023 | British Ecological Society (BES) Aquatic Ecology Group Meeting |
| 2017,2018,2019 | Congress of the European Society for Evolutionary Biology (ESEB) |

- 2018* Gordon Research Conferences (GRC) - Mechanisms and Outcomes of Predator-Prey Interactions (*poster presentation)
- 2017* British Ecological Society (BES) Annual Meetings (***invited talk**)
- 2016 Annual Meeting of the Ecological Society of America (ESA)

Invited seminar

- 6/2023 “Eco-evolutionary dynamics in the city”, Evolutionary Biology Department Seminars, University of Bielefeld, Germany.

Presentations as public outreach

- 2/2017 Vlaamse libellenstudiedag (organised by the Flemish Dragonfly Association), Mechelen, Belgium
- 3/2016 35. Jahrestagung der Gesellschaft deutschsprachiger Odonatologen, GdO (organized by the German Dragonfly Association), Mainz, Germany

Research visits & trainings

- 11/2017 Research visit to Dr. Arnaud Sentis, **Food-web modelling**, CNRS, Moulis, France
- 12/2015 Workshop, **Structural Equation Modelling**, organised by the Graduate School for Production Ecology and Resource Conservation of Wageningen University, The Netherlands

Awards & Funding

- 6/2018 FWO **Travel grant**, ESEB conference (Montpellier, France)
- 1/2018 FWO **Travel grant**, GRC conference (Ventura, CA, USA)
- 10/2013 EES Young Researcher Prize, **Best Master Talk**, LMU, Munich, Germany

Organization of conference sessions

- 7/2024 “Urban evolutionary dynamics and species interactions”, **The 3rd Joint Congress on Evolutionary Biology** (Montreal, QC, Canada)
- 7/2023 “Bright nights with dark consequences: the evolutionary ecology of coping with light pollution”, **SEB conference** (Edinburgh, UK)
- 8/2022 “Unravelling the interplay between plasticity and evolution during rapid global change”, **ESEB conference** (Prague, Czech Republic)
- 7/2022 “Carry-over effects of global change stressors across metamorphosis: mechanisms and consequences”, **SEB conference** (Montpellier, France)

Invited contributions for book chapters

- Sentis, A., Kaunisto, K., Chari, L., Morrill, A., Popova, O., Pomeranz, J., Boukal, D., **Tüzün, N.** & Stoks, R. (2023) Trophic ecology, in *Dragonflies and damselflies: Model organisms for ecological and evolutionary research*, Second Edition (editors: Córdoba-Aguilar, A., Beatty, C.D., Bried, J.T. & Suárez-Tovar, C.M.), Oxford University Press.

Stoks, R., Janssens, L., Delnat, V., Swaegers, S., **Tüzün, N.** & Verheyen, J. (2022) Adaptive and maladaptive consequences of developing in changing environments, in *Development strategies and biodiversity - Darwinian fitness and evolution in the Anthropocene* (editors: Costantini, D. & Marasco, V.), Springer Publishing.

Guest editor

Special issue in the journal of *Current Opinion in Insect Science* (October 2022). Theme: Global change biology. (co-edited with Prof. Dr. Robby Stoks)

Reviewing activity

I am actively contributing as a reviewer for prestigious journals in my field, including *Trends in Ecology & Evolution*, *Ecology Letters*, *Proceedings for the Royal Society B*, *Philosophical Transactions of the Royal Society B*, *Journal of Animal Ecology*, *Evolutionary Applications* (in total 36 verified reviews for 21 journals, as of 05/04/2024).

See full list: <https://www.webofscience.com/wos/author/record/1401084>

Teaching activities

I have supervised the practical sessions for the Master's courses **Advanced Biological Data Analysis** (2017 – 2020) and **Behavioural and Advanced Ecology** (2017, 2018) at KU Leuven, Belgium. I have taught part of the Master's course **Freshwater Ecology** (main lecturer: Franz Hölker) at the Freie Universität Berlin, Germany (2022 – 2024; lecture titles: Urban evolution, Climate change and evolution). I have taught a 16h-lecture series (remote) on 'Urban Biology' as part of the **summer school at Shandong University**, China (2024).

Student supervision

PhD (co-supervision) **Charlotte Theys**, KU Leuven, 2019 – ongoing

Title: “Evolutionary ecology of geographic patterns in stress tolerance in a damselfly host and its gut microbiome”

Ying-Jie Wang, KU Leuven, 2017 – 2021

Title: “Effects of global warming on trophic interactions in pond food webs”

PhD (mentor) **Felix Mende**, FU Berlin & IGB, 2024 – ongoing

Gwendoline Acerbi, IGB, 2024 – ongoing

Zeynep Daldaban, IGB, 2024 – ongoing

In addition, I have acted as supervisor for 5 completed Master theses (2 international).