

DR. MORITZ DAVID LÜRIG

Postdoctoral scholar

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moritz.lurig@biol.lu.se | <https://www.luerig.net>**ACADEMIC RESEARCH POSITIONS****Lund University**
07/2021 - 08/2023**Postdoctoral scholar** with Erik I. Svensson. Project: *Phenomics and evolution of sexual colour polymorphism in damselflies*. Funded by the European Commission (Marie Skłodowska Curie Actions - Individual Fellowship) and by the Swiss National Science Foundation (Early Postdoc.Mobility fellowship).**Eawag**
01/2020 - 06/2020**Postdoctoral scholar** with Ole Seehausen, Jukka Jokela, and Jan Wegner. Project: *Development of a high throughput phenotyping toolbox*. Funded by the Eawag directorate (Discretionary Funding Scheme).**ETH Zürich/ Eawag**
04/2015 - 12/2019**Doctoral student** with Blake Matthews and Jukka Jokela at Eawag (Swiss Federal Institute of Aquatic Science and Technology). Funded by the Center for Adaptation to a changing environment (ACE, ETH Zürich).**EDUCATION****Dr. Sc. ETH Zürich**
04/2015 - 09/2019**ETH Zürich (Eidgenössische Technische Hochschule Zürich)**. Supervisors: Blake Matthews and Jukka Jokela. Thesis: *Species interactions - from phenotypes to ecosystems*. Defense: 28.06.2019. Opponent: Stewart Plaistow.**M. Sc. (Marine Environmental Sciences)**
10/2011 - 03/2015**Carl von Ossietzky University of Oldenburg**. Supervisors: Jay Stachowicz (University of California, Davis) and Helmut Hillebrand. Thesis: *Microhabitat partitioning in seagrass mesograzers is driven by consistent species choices across multiple predator and competitor contexts*.**B. Sc. (Environmental Sciences)**
10/2006 - 9/2011**Carl von Ossietzky University of Oldenburg**. Supervisors: Andreas Kunzmann (University of Bremen) and Meinhard Simon. Thesis: *Effects of short term aragonite undersaturation and elevated temperature on the physiology of Stylophora pistillata*.**PUBLICATIONS**

- 2021 | **Lürig, M. D.** (2021). phenotype: a phenotyping pipeline for Python. *Methods in Ecology and Evolution*. *In press*.
- Best, R.J. and **Lürig, M. D.** The Ecological Importance of Crustacean Diversity. Book chapter in: Gutow, L., Poore, A. and Thiel, M. (Eds.), *The Natural History of the Crustacea: The Ecological Role and Conservation of Crustaceans*. *In press*. Oxford University Press.
- Lafuente, E., **Lürig, M.D.**, Rövekamp, M., Matthews, B., Buser, C., Vorburger, C., and Räsänen, K.. Building on 150 years of knowledge: the freshwater isopod *Asellus aquaticus* as an integrative eco-evolutionary model system. *Frontiers in Ecology and Evolution*. *In press*.
- Russo, S., Besmer, M. D., Blumensaat, F., Bouffard, D., Disch, A., Hammes, F., Hess, A., **Lürig, M.D.**, Matthews, B., Minaudo, C., Morgenroth, E., Tran-Khac, V., and Villez, K. (2021). The value of human data annotation for machine learning based anomaly detection in environmental systems. *Water Research*, 117695. [DOI]

- Moosmann, M., Cuenca-Cambronero, M., De Lisle, S., Greenway, R., Hudson, C. M., **Lürig, M.D.**, and Matthews, B. (2021). On the evolution of trophic position. Ecology Letters. *In press*. [DOI]
- Lürig, M.D.**, Narwani, A., Penson, H., Wehrli, B., Spaak, P., and Matthews, B. (2021). Non-additive effects of foundation species determine the response of aquatic ecosystems to nutrient perturbation. Ecology 102(7), e03371. [DOI]
- Lürig, M.D.**, Donoughe, S., Svensson, E.I., Porto, A., and Tsuboi, M. (2021). Computer Vision, Machine Learning, and the Promise of Phenomics in Ecology and Evolutionary Biology. Frontiers in Ecology and Evolution 9:642774. [DOI]
- Lürig, M.D.**, and Matthews, B. (2021). Dietary-based developmental plasticity affects juvenile survival in an aquatic detritivore. Proceedings of the Royal Society B: Biological Sciences 288:20203136. [DOI]
- 2020 **Lürig, M.D.**, Best, R.J., Dakos, V., and Matthews, B. (2020). Submerged macrophytes affect the temporal variability of aquatic ecosystems. Freshw. Biol. 66(3), 104869, [DOI]
- Russo, S., **Lürig, M.D.**, Hao, W., Matthews, B., and Villez, K. (2020). Active learning for anomaly detection in environmental data. Environmental Modelling & Software 134, 104869. [DOI]
- Leal, M. C., Anaya-Rojas, J.M., Munro, M.H.G., Blunt, J.W., Melian, C.J., Calado, R., **Lürig, M. D.** (2020). Fifty years of capacity building in the search for new marine natural products. Proceedings of the National Academy of Sciences 17(39), 24165-24172. [DOI]
- 2019 **Lürig, M.D.**, Best, R.J., Svitok, M., Jokela, J., Matthews, B. (2019). The role of plasticity in the evolution of cryptic pigmentation in a freshwater isopod. Journal of Animal Ecology 88(4), 612–623. [DOI]
- 2016 **Lürig, M.D.**, Best, R.J., Stachowicz, J.J. (2016). Microhabitat partitioning in seagrass mesograzers is driven by consistent species choices across multiple predator and competitor contexts. Oikos 125, 1324-1333. [DOI]
- 2015 **Lürig, M.D.**, Kunzmann A. 2015). Effects of short term aragonite undersaturation and elevated temperature on the physiology of *Stylophora pistillata*. Journal of Sea Research 99, 26–33. [DOI]

PRESENTATIONS (Selected)

- 2021 **East of Scotland Bioscience Doctoral Training Series, Aberdeen, Scotland (invited)**: Deep learning powered computer vision as a promising avenue for phenomics.
- 2019 **University of Hokkaido, Tomakomai, Japan (invited)**: *Asellus aquaticus* as an emerging model system in ecology and evolutionary research.
- University of Ljubljana, Slovenia (invited)**: Isopods (*Asellus aquaticus*) as an emerging model system for eco-evo-devo.
- European Society for Evolutionary Biology, Annual Meeting, Turku, Finland**: Diet-based developmental plasticity and fitness in a detritivorous isopod (*Asellus aquaticus*).
- 2018 **British Ecological Society, Annual Meeting, Birmingham, UK**: Species interactions and the resilience of aquatic ecosystems to nutrient perturbation.
- 2017 **Dynatrait Programme Conference. Stephansstift, Hannover, Germany**: Interactive effects of selection and plasticity during rapid evolution of a freshwater isopod.
- 2013 **Western Society of Naturalists Annual Meeting. Oxnard, CA, USA**: Microhabitat selection by seagrass mesograzers: effects of predation, trait variation and species interactions.

ACQUIRED FUNDING

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|------|-------------|--|
| 2020 | 192 000 EUR | Marie Skłodowska Curie Actions Individual Fellowship (European Commission): 24 month postdoc scholarship |
| 2019 | 76 000 CHF | SNF Postdoc Mobility Fellowship (Swiss National Science Foundation): 18 month postdoc fellowship |

2019	60 000 CHF	Eawag Discretionary Funding (Eawag directorate): 6 month postdoc scholarship
2014	200 000 CHF	PhD funding (ETH Zürich: Adaptation to a Changing Environment): 36 month PhD scholarship
2014	500 EUR	Travel stipend (Department of Mathematics and Science, Oldenburg University): 3 month mobility stipend
2013	1 500 EUR	Travel stipend (PROMOS, DAAD): 6 month mobility stipend for masters thesis

TEACHING AND MENTORING

2018	MSc co-mentor for Kim Kaltenbach. Thesis title: <i>The Role of Predator-Mediated Selection on Isopod Pigmentation</i> (Eawag)
2013	BSc co-mentor for Elena Huynh. Thesis title: <i>Effects of epiphyte-cover on the microhabitat preference of C. californica</i> (UC Davis)
2011	Teaching Assistant for <i>Practical Applications in Aquaculture</i> ("ISATEC" masters program, Uni. Bremen)
2010	Teaching Assistant for <i>Scientific Diving</i> (Uni. Oldenburg, Course No. 5.12.230/1)
2007-2010	Teaching Assistant for field classes <i>Introduction to the German Coastal Zone</i> and <i>Geomorphology of the northwestern German Coastal Zone</i> (Uni. Oldenburg, Course No. 5.12.021/111)
2007	Tutor for <i>Basic and Inorganic Chemistry</i> (Uni. Oldenburg, Course No. 5.07.701)

OTHER PROFESSIONAL EXPERIENCE

2019	Research stay at Hokkaido University with Osamu Kishida (1.5 months). Focus: natural history of isopods (Asellidae), phenotypic variation across environmental gradients, image analysis.
2018	Research stay at Université Montpellier with Vasilis Dakos (1 month). Focus: time series analysis, multidimensional data, variance partitioning, ecological disturbances.
2013/2014	Research assistant at Bodega Marine Lab, UC Davis with Jay Stachowicz (5 and 3 months). Focus: biodiversity monitoring, community ecology, species interactions.
2009 - 2012	Research assistant at University of Bremen with Andreas Kunzmann (3 Jahre, durchgehend). Work at Leibniz Center for Tropical Marine Ecology (ZMT Bremen), Leigh Marine Lab (University of Auckland) and Interuniversity Institute (Eilat, Israel). Focus: metabolism measurement of corals and fish, local and global gradients of animal ecophysiology.

OTHER PROFESSIONAL ACTIVITIES

since 2018	Author and maintainer of the open science Python package <i>phenotype - a phenotyping pipeline for python</i>
since 2016	Peer review of manuscripts for <i>Marine Biology</i> , <i>Zoology</i> , <i>Ecology and Society</i> , <i>Journal of Animal Ecology</i> , <i>Oikos</i> , <i>Methods in Ecology and Evolution</i> , <i>Biological Journal of the Linnean Society</i>
since 2016	Society member of the European Society for Evolutionary Biology and the <i>British Ecological Society</i>
2009	Scientific Diver (equivalent to PADI *** / NAUI Dive Instructor), certified by the Examination board for scientific divers