Dr. Moritz David Lürig

Postdoctoral scholar

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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. [PDF][DOI]
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*. [PDF][DOI]
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*. [PDF][DOI]

PUBLICATIONS

2021

Lürig, M. D.. (2021). phenopype: 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. Oxford University Press. *In 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

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: *The Role of Predator-Mediated Selection on Isopod Pigmentation* (Eawag)
2013	**BSc co-mentor** for Elena Huynh. Thesis title: *Effects of epiphyte-cover on the microhabitat preference of C. californica (UC Davis)*
2011	**Teaching Assistant** for *Practical Applications in Aquaculture* ("ISATEC" masters program, Uni. Bremen)
2010	**Teaching Assistant** for *Scientific Diving* (Uni. Oldenburg, Course No. 5.12.230/1)
2007-2010	**Teaching Assistant** for field classes *Introduction to the German Coastal Zone* and *Geomorphology of the northwestern German Coastal Zone* (Uni. Oldenburg, Course No. 5.12.021/111)
2007	**Tutor** for *Basic and Inorganic Chemistry* (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 ***phenopype - a phenotyping pipeline for python***
since 2016	**Peer review** of manuscripts for *Marine Biology*, *Zoology*, *Ecology and Society*, *Journal of Animal Ecology*, *Oikos*, *Methods in Ecology and Evolution*, *Biological Journal of the Linnean Society*
since 2016	**Society member** of the European Society for Evolutionary Biology and the *British Ecological Society*
2009	**Scientific Diver** (equivalent to PADI *** / NAUI Dive Instructor), certified by the Examination board for scientific divers