

Curriculum vitae



DR. MORITZ DAVID LÜRIG

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Postdoctoral scholar

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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]

Academic positions

Florida Museum of Natural History

from 09/2023

Postdoctoral researcher with Prof. Arthur Porto (University of Florida, Gainesville). Project: *Understanding morphological diversification in deep evolutionary time using computer vision based phenomics*.

Lund University

07/2020 - 08/2023

Postdoctoral scholar with Erik I. Svensson. Project: *Phenomics and evolution of sexual colour polymorphism in damselflies*. Funded i) by the European Commission (Marie Skłodowska Curie Actions - Individual Fellowship) and ii) 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).

Peer reviewed publications

- 2023 | 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*.
- 2022 | **Lürig, M. D.** (2022). phenotype : A phenotyping pipeline for Python. *Methods in Ecology and Evolution / British Ecological Society*, 13(3), 569–576. [DOI]

- 2021 Lafuente, E., **Lürig, M.D.**, Rövekamp, M., Matthews, B., Buser, C., Vorburger, C., and Räsänen, K. (2021). Building on 150 Years of Knowledge: The Freshwater Isopod *Asellus aquaticus* as an Integrative Eco-Evolutionary Model System. *Frontiers in Ecology and Evolution*, 9. [\[DOI\]](#)
- 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, 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*. *Ecology Letters*, 24(12), 2549–2562. [\[DOI\]](#)
- 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. [\[DOI\]](#)
- Lürig, M.D.**, Best, R.J., Dakos, V., and Matthews, B. (2021). Submerged macrophytes affect the temporal variability of aquatic ecosystems. *Freshw. Biol.* 66(3), 104869, [\[DOI\]](#)
- 2020 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. [\[DOI\]](#)

Oral presentations (selected)

- 2023 Evolution in Sweden, Uppsala University: Phenomics of a female limited color polymorphism.
- 2022 62nd Phylogenetic Symposium: Macroevolutionary Dynamics, University of Bonn (**Invited**): Toward assembling the phenome - challenges and prospects.
European Society for Evolutionary Biology, Annual Meeting, Prague, Czech Republic: Phenomics of sexual conflict: how integrated are color and shape in a female limited polymorphism?.
IEES / Sorbonne, Paris, France (**invited**): Computer vision in evolutionary ecology: toward assembling a phenome.
- 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.
- 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 meso-grazers: effects of predation, trait variation and species interactions.

Aquired funding

12/2022	130 000 SEK	Hans Kristiansson Fund (100000 SEK) and Lars Hiertas Minne (30000 SEK): Symposium for Computer Vision in Ecology and Evolution (Conference at Lund University)
03/2020	191 852 EUR	Marie Skłodowska Curie Actions Individual Fellowship (European Commission; 24 month postdoc scholarship): Phenomics and evolution of sexual colour polymorphism in damselflies.
09/2019	76 100 CHF	Early Postdoc.Mobility Fellowship (Swiss National Science Foundation; 18 month postdoc fellowship): Phenomics and evolution of sexual colour polymorphism in damselflies
09/2019	54 703 CHF	Eawag Discretionary Funding (Eawag directorate; 6 month postdoc scholarship): development of a high-throughput phenotyping pipeline
04/2015	168 919 CHF	PhD Fellowship (ETH Zürich / Center for Adaptation to a Changing Environment; 36 months - competitive application process).

Supervision of junior researchers

since 09/2022	PhD co-mentor for Sofie Nilén. Thesis title: Evolutionary dynamics of transspecies polymorphisms in damselflies
11/2021 - 01/2022	BSc mentor for Kent Johansson. Thesis title: Phenomics of sexual conflict in <i>Ischnura elegans</i> (Lund University)
01/2020 - 06/2020	PhD co-mentor for Nare Ngoepe. Thesis title: Reconstructing the trophic radiation of Lake Victoria Cichlids (Eawag)
01/2018 - 12/2018	MSc co-mentor for Kim Kaltenbach. Thesis title: The Role of Predator-Mediated Selection on Isopod Pigmentation (Eawag)
06/2013 - 10/2013	BSc co-mentor for Elena Huynh: Thesis title: Effects of epiphyte-cover on the microhabitat preference of <i>Caprella californica</i> (UC Davis / Bodega Marine Lab)

Teaching experience and workshops

2023	Instructor (Invited) Workshop: Blue-green biodiversity - Research and practice at the interface of aquatic and terrestrial ecosystems. (WSL and Eawag), Davos Switzerland . Instructor (Invited) Uppsala Biology PhD School Workshop „AI in Biology: Computer Vision“. Uppsala University, Sweden.
2021	Instructor (Invited) East of Scotland Bioscience Doctoral Training Series: Deep learning and computer vision. University of Aberdeen, Scotland
2017	Teaching Assistant <i>Fundamental Questions in Environmental Sciences, FS17</i> (ETH Zürich)
2011	Teaching Assistant <i>Practical Applications in Aquaculture</i> (“ISATEC“ masters program, Uni. Bremen)
2010	Teaching Assistant <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)

Peer review

since 05/2016	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> , <i>Ecology and Evolution</i> , <i>Behavioural Ecology and Sociobiology</i> , <i>Freshwater Science</i> , <i>Current Zoology</i> , <i>Journal of the Royal Society - Interface</i> , <i>Paleobiology</i>
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Memberships in scientific societies

since 01/2016	Member of the European Society for Evolutionary Biology
since 08/2015	Member of the British Ecological Society

Organisation of conferences and symposia

09/2023	(upcoming) International Forum for Computer Vision in Ecology and Evolutionary Biology https://cv-eeb.netlify.app/ .
02/2022	Computer vision for biodiversity monitoring (WSL, Switzerland).
11/2021	Second international <i>Asellus aquaticus</i> symposium.
05/2020	Computer vision and machine learning in ecology and evolution.
12/2018	First international <i>Asellus aquaticus</i> symposium.
05/2016	Aquatic Ecology PhD Symposium at Eawag.