Curriculum vitae

Dr. Moritz David Lürig

**14.04.1986, Mülheim an der Ruhr, Germany*

Postdoctoral scholar

University of Florida
Florida Museum of Natural History
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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

Bonn University starting 2026	**Group leader / Assistant Professor** Rheinische Friedrich-Wilhelms-Universität Bonn. Project: *The evolution of wing coloration in Lepidoptera* (Starting Grant of the European Research Council [ERC]).
University of Florida since 09/2023	**Postdoctoral researcher** with Arthur Porto at the Florida Museum of Natural History. Project: *Leveraging digitized natural history museum collections with computer vision and artificial intelligence*.
Lund University 07/2020 - 08/2023	**Postdoctoral scholar** with Erik I. Svensson. Project: *Phenomics and evolution of sexual color polymorphism in damselflies*. (Marie Skłodowska Curie Actions - IF [European Commission] + Early Postdoc.Mobility Fellowship [Swiss National Science Foundation]).
Eawag 01/2020 - 06/2020	**Postdoctoral scholar** with Ole Seehausen, Jukka Jokela, and Jan Wegner. Project: *Development of a high throughput phenotyping toolbox*. (Discretionary Funding Scheme [Eawag directorate]).
ETH Zürich/ Eawag 04/2015 - 12/2019	**Doctoral student** with Blake Matthews and Jukka Jokela at the Swiss Federal Institute of Aquatic Science and Technology (Eawag) and the Center for Adaptation to a changing environment (ACE).

Peer reviewed publications

2025	Best, R.J. and **Lürig, M. D.**. (2025) 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*

Lürig, M. D., B. Matthews, C. J. Schubert, and O. Kishida. (2025) Nutritional effects on the expression of cryptic pigmentation in freshwater isopods. Oikos. *In press*

Passarotto, A.*, **Lürig, M. D.***, M. D. Lürig, E. Aaltonen, and P. Karell. (2025). Morph-specific selection pressures drive phenotypic divergence in a color polymorphic bird. Communications Biology. *accepted* / *shared lead-authorship

Ngoepe, N., S. Mwaiko, M. Kishe, G. Wienhues, Y. Temoltzin-Loranca, L. King, C. Mustaphi, M. Grosjean, W. Tinner, B. Matthews, H. Vogel, O. Heiri, E. Jemmi, M., **Lürig, M. D.**, Pedersen, O. Seehausen, and M. Muschick. (2025) Fossil evidence for trait diversification in an adaptive radiation. Scientific Reports. *In press*

2024 Masahito Tsuboi, Jacqueline Sztepanacz, Stephen De Lisle, Kjetil L Voje, Mark Grabowski, Melanie J Hopkins, Arthur Porto, Meghan Balk, Mikael Pontarp, Daniela Rossoni, Laura S Hildesheim, Quentin J-B Horta-Lacueva, Niklas Hohmann, Agnes Holstad, **Lürig, M. D.**, Lisandro Milocco, Sofie Nilén, Arianna Passarotto, Erik I Svensson, Cristina Villegas, Erica Winslott, Lee Hsiang Liow, Gene Hunt, Alan C Love, David Houle, The paradox of predictability provides a bridge between micro- and macroevolution, Journal of Evolutionary Biology, Volume 37, Issue 12, December 2024, Pages 1413–1432 [DOI]

Lürig, M.D., Di Martino, E. and Porto, A. (2024) BioEncoder: A metric learning toolkit for comparative organismal biology. Ecology letters, 27(8), p. e14495. [DOI]

2022 **Lürig, M. D.** (2022). phenopype: 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)

2024	Seminar series at McGuire Center for Lepidoptera Research: From pixels to patterns: integrating computer vision and AI to study wing evolution in butterflies
2024	International Congress of Entomology (ICE XXVII, Kyoto, Japan): BioEncoder: Image Classification through Supervised Metric Learning
2024	iDigBio meeting, Yale University: Mapping out phenotypic diversity in a large family of butterflies.
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.

Aquired funding

(Grants >10,000 EUR)

07/2025	**1,491,415 EUR**	Starting Grant (European Research Council - ERC): The evolution of wing coloration in Lepidoptera. 5-year research project.
12/2022	**130 000 SEK**	Symposia Grants (Hans Kristiansson (100000 SEK) and Lars Hiertas (30000 SEK) Memorial Funds): International forum for computer vision in ecology and evolution.
03/2020	**191 852 EUR**	Marie Skłodowska Curie Actions - IF (European Commission): Phenomics and evolution of sexual color polymorphism in damselflies. 2-year research project.
09/2019	**76 100 CHF**	Early Postdoc.Mobility Fellowship (Swiss National Science Foundation): Phenomics and evolution of sexual color polymorphism in damselflies. 1.5-year research project
09/2019	**54 703 CHF**	Eawag Discretionary Funding (Eawag directorate): development of a high-throughput phenotyping pipeline. 0.5-year research project
04/2015	**168 919 CHF**	PhD Fellowship (ETH Zürich / Center for Adaptation to a Changing Environment. 3-year PhD project.

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 Ischnura elegans (Lund University)
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 *Caprella californica* (UC Davis / Bodega Marine Lab)

Teaching activities and workshops

2025	**Co-teacher** for the class *AI in Biology* (University of Florida, course No. BSC4892/6895).
2024	**Instructor (invited)** Workshop: Phenomics in Ecology and Evolutionary Biology, Aussois, France (IEEZ Sorbonne).
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** *Fundamental Questions in Environmental Sciences, FS17* (ETH Zürich)
2011	**Teaching assistant** *Practical Applications in Aquaculture* (“ISATEC“ masters program, Uni. Bremen)
2010	**Teaching assistant** *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)

Organisation of conferences and symposia

09/2024	(**Lead organizer**) Symposium at the International Congress of Entomology (ICE XXVII): Novel approaches to harness the worlds’ natural history entomology collections.
09/2023	(**Lead organizer**) 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 *Asellus aquaticus* symposium.
05/2020	(**Lead organizer**) Computer vision and machine learning in ecology and evolution.
12/2018	First international *Asellus aquaticus* symposium.
05/2016	(**Lead organizer**) Aquatic Ecology PhD Symposium at Eawag.

Peer review activities

Manuscripts	As of 2025-03-09 I have reviewed **34 manuscripts submitted to 20 different scientific journals**: Marine Biology, Zoology, Ecology and Society, Journal of Animal Ecology, Oikos, Methods in Ecology and Evolution, Biological Journal of the Linnean Society, Ecology and Evolution, Behavioural Ecology and Sociobiology, Freshwater Science, Current Zoology, Journal of the Royal Society - Interface, Paleobiology, PlosONE, JEZ Part B: Molecular and Developmental Evolution, Functional Ecology, Evolution Letters, Ecology Letters, Bioinformatics and Biology Insights, Ecological Informatics
Grants	I have reviewed research grants submitted to UKRI (United Kingdom Research and Innovation, UK) and WRAC (Western Regional Aquaculture Center, US).

Outreach activities

06/2024	Workshop for high school teachers at University of Florida: Presentation on Biases and limitations of artificial intelligence.
10/2022	European researcher’s night (Forskarfredag) at Lund University: Introducing high school students to basic biological concepts.

Memberships in scientific societies

since 01/2016	Member of the European Society for Evolutionary Biology