

Curriculum vitae



DR. MORITZ DAVID LÜRIG

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Postdoctoral researcher

University of Florida

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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 fellow 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 fellow 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 (selected)

2025	Best, R.J. and Lürig, M. D.. (2025) The Ecological Importance of Crustacean Diversity. Book chapter in: The Natural History of the Crustacea: The Ecological Role and Conservation of Crustaceans. Oxford University Press.
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- Lürig, M. D.**, B. Matthews, C. J. Schubert, and O. Kishida. (2025) Nutritional effects on the expression of cryptic pigmentation in freshwater isopods. *Oikos* e11664. Wiley. *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* 15:38824.
- 2024 **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). 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](#)]
- 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](#)]

Oral presentations (selected)

- 2025 (**Invited**) SICCS Informatics and Computing Seminar (Northern Arizona University, AZ, USA): Metric deep learning for comparative organismal biology
- Entomological Society of America Meeting (Portland, OR, USA): Aposematic color patterns are the dominant axis of phenotypic diversification in Nymphalid butterflies
- 2024 (**Invited**) Expanding horizons in Lepidoptera research Seminar (McGuire Center, UFL, Gainesville, USA): 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, annual meeting (Yale University, CT, USA): Mapping out phenotypic diversity in a large family of butterflies.
- 2023 Evolution in Sweden, annual meeting (Uppsala University, Sweden): Phenomics of a female limited color polymorphism.

2022	(Invited) 62nd Phylogenetic Symposium (Bonn University, Germany): Macroevolutionary Dynamics, University of Bonn: Toward assembling the phenome - challenges and prospects. (invited) Seminar series, IEES / Sorbonne (Paris, France): Computer vision in evolutionary ecology: toward assembling a phenome.
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Acquired 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 (selected)

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)
01/2018 - 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 activities and workshops

2025	Co-teacher for the class <i>AI in Biology</i> (University of Florida, course No. BSC4892/6895).
2024	Instructor (invited) Workshop: Phenomics in Ecology and Evolutionary Biology, Aussois, France (IE-EZ 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 <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)

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 <i>Asellus aquaticus</i> symposium.
05/2020	(Lead organizer) Computer vision and machine learning in ecology and evolution.
12/2018	First international <i>Asellus aquaticus</i> 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 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 (Forskarsfredag) 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
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