

Curriculum vitae



DR. MORITZ DAVID LÜRIG

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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

Florida Museum of Natural History
since 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

- 2025 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*

- 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](#)]
- 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](#)]
Russó, 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): <i>Asellus aquaticus</i> as an emerging model system in ecology and evolutionary research. University of Ljubljana, Slovenia (invited): Isopods (<i>Asellus aquaticus</i>) 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

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 post-doc 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)
01/2018 - 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 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
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