

# CURRICULUM VITAE

## PERSONAL INFORMATION

Andreas Härer, PhD

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## ACADEMIC APPOINTMENTS

- 02/2020 – present** **Postdoctoral researcher** at University of California San Diego  
Host: Prof. Dr. Diana Rennison
- 10/2018 – 09/2019** **Postdoctoral researcher** at the University of Konstanz, Germany  
Host: Prof. Dr. Axel Meyer

## EDUCATION

- 2014 – 2018** **Graduate student** at the University of Konstanz, Germany  
Co-supervisors: Prof. Dr. Axel Meyer & Prof. Julián Torres-Dowdall
- 2010 – 2013** **MSc** in Biological Sciences at the University of Konstanz, Germany  
Co-supervisors: Prof. Dr. Axel Meyer & Prof. Federico Henning
- 2007 – 2010** **BSc** in Biology at the Karlsruhe Institute of Technology (KIT), Germany  
Supervisor: Prof. Dr. Doris Wedlich

## TEACHING EXPERIENCE

- 2018 – 2019** Lecture “Environmental Genomics” given during the “Advanced Methods in Genetics and Genomics” seminar at the University of Konstanz (organized by Dr. Paolo Franchini)
- 2016 – 2017** Lecture “Conservation Genetics” given during the Advanced Course “Molecular Evolutionary Biology” at the University of Konstanz (organized by Prof. Dr. Axel Meyer)
- 2012 – 2015** Teaching assistant for Evolutionary Biology lectures for undergraduate students at the University of Konstanz (organized by Prof. Dr. Axel Meyer)

## PRACTICAL EXPERIENCE

- 2014 – 2018** Independent organization and realization of three field trips (three - six weeks each) to Nicaragua within the scope of my dissertation
- 09/2011 – 03/2012** Research intern at the Institute of Molecular and Cell Biology in Singapore, Supervisor: Dr. Dmitry Bulavin

## SUPERVISION

### Undergraduate students

- **Mia Tonkin, Isabella Villalobos-Arriaga:** Undergraduate students in the Rennison lab
- **Alina Shahin, Christine Frazier:** Summer Training Academy for Research Success
- **Ashley Toba, Camila Arregui:** ENLACE summer research program at UC San Diego

### Master students

- **Emma Kurstjens:** Master student in the Rennison lab at UCSD
- **Anne van Humbeek, Femina Prabhukumar, Nils Fabian Strumpfen, Benedikt Speisser, Nidal Karagic and Marvin Kaupp:** Advanced Course “Molecular Evolutionary Biology” 2015-2019

## SOCIETY MEMBERSHIPS

- European Society for Evolutionary Biology, American Society of Naturalists, Society for the Study of Evolution, Society for Integrative and Comparative Biology

## FURTHER EDUCATION

- **GSO Leadership Academy 7**, Berlin, Germany, 2023
- **Scientific Teaching Workshop**, UCSD, San Diego, 2021
- **Communicating Your Research Workshop**, UCSD, San Diego, 2020
- **Programming for Evolutionary Biology**, Freie Universität Berlin, Germany, 2019
- **Animal Handling Course**, Animal Research Facility, Konstanz, Germany, 2015
- **Evolutionary Biology Workshop in the Alps**, Riederalp, Switzerland, 2015
- **UCLA/LaKretz Conservation Genomics Workshop**, Los Angeles, CA, 2014

## GRANTS, FELLOWSHIPS AND AWARDS

- Walter Benjamin fellowship, German Research Foundation, 2021 (€127,578)
- Best postdoctoral scholar speaker award at the 2021 UCSD Biological Sciences - Salk Institute Retreat, San Diego, USA, September 2021 (\$300)
- Best talk at the 23<sup>rd</sup> DZG Evol Graduate Meeting, Freiburg, Germany, March 2018
- Research project prize from the foundation "Umwelt und Wohnen an der Universität Konstanz" for research expedition to Nicaragua, 2014 (€5,000)
- Singapore International Pre-Graduate Award (SIPGA) of the agency for science, technology and research Singapore (A\*STAR), 2011 (\$9,000 USD)

## PROFESSIONAL SERVICES

- **Invited reviewer** for international scientific journals: Aquaculture Research, Biological Conservation, Evolution, Microbial Ecology, Molecular Biology and Evolution, Molecular Ecology, PLoS One, Proceedings of the Royal Society B
- **Scientific evaluator** for the Swiss National Science Foundation (SNSF)
- **Co-organizer** of the EBE Seminar Series at UCSD (Fall 2023)
- **Session Chair** at Virtual Evolution 2021
- **Moderator** at the UC San Diego Undergraduate Research Conference 2021
- **Moderator** at the UC San Diego Summer Research Conferences 2020
- **Joint Council member** for UC Postdoc Union (UAW Local 5810) 2021-2023
- **Mentor** in the Biology Undergraduate and Master's Mentorship Program at UCSD
- **Mentor** in the Bilingual Mentoring Program at Virtual Evolution 2021

## PUBLIC OUTREACH

Exhibition at the 5<sup>th</sup> "Lange Nacht der Wissenschaft Konstanz" (Konstanz Science Night): Sehen alle Tiere die Welt wie wir? Ein Blick durch das Auge eines Buntbarsches (Do all animals see the world like we do? A look through the eye of a cichlid fish). Co-Organization with Prof. Julián Torres-Dowdall & Dr. Nidal Karagic.

## INVITED SEMINARS

- Ecology, Behavior & Evolution (EBE) Flash Talk Series, UCSD, USA 2022
- Department of Biosciences, University of Salzburg, Austria 2019
- Department of Biology, Colorado State University, USA 2019
- International Max Planck Research School for Organismal Biology, Germany 2014

## CONFERENCE PRESENTATIONS

### Talks

- **Virtual Evolution**, June 2023. Hörer A, Thompson KA, Schluter D and Rennison DJ: A positive association between gut microbiota diversity and vertebrate host fitness in a field experiment
- **Conference of The American Society of Naturalists**, Monterey, CA, January 2023. Hörer A, Thompson KA, Schluter D and Rennison DJ: Host fitness is associated with gut microbiota diversity and composition in threespine stickleback

- **Congress of the European Society for Evolutionary Biology**, Prague, Czech Republic, August 2022. Härer A, Kurstjens E and Rennison DJ: Threespine stickleback gut microbiota divergence associated with repeated shifts in trophic ecology
- **UCSD Biological Sciences-Salk Institute Retreat**, San Diego, CA, September 2021. Härer A and Rennison DJ: On the predictability of gut microbiota changes during host ecological divergence
- **Virtual Evolution**, June 2021. Härer A and Rennison DJ: Is parallel ecological divergence across vertebrate hosts reflected by parallel changes of their gut microbiota?
- **Virtual Asilomar Conference**, January 2021. Härer A and Rennison DJ: (Non)parallelism of the gut microbiota during parallel evolution of vertebrate hosts
- **SICB Annual Meeting**, January 2021. Härer A, Rudman SM and Rennison DJ: Gut microbiota dynamics during trophic divergence of fishes: is parallel evolution of host organisms reflected by parallel shifts of their gut microbial communities?
- **2<sup>nd</sup> Joint Congress on Evolutionary Biology**, Montpellier, France, August 2018. Härer A, Torres-Dowdall J, Rometsch S, Yohannes E, Machado-Schiaffino G and Meyer A: The young adaptive radiation of Nicaraguan Midas cichlid fishes: which factors shape the gut microbiota during ecological divergence?
- **23<sup>rd</sup> DZG Evol Graduate Meeting**, Freiburg, Germany, March 2018. Härer A, Karagic N, Torres-Dowdall J and Meyer A: The visual system of Neotropical cichlid fishes: a case study for adaptive evolution after colonization of novel light environments
- **2<sup>nd</sup> Annual Meeting in Conservation Genetics**, Göttingen, Germany, October 2016. Härer A, Torres-Dowdall J and Meyer A: The Nicaragua Canal – a threat to freshwater biodiversity
- **Evolution Meeting**, Austin, TX, June 2016. Härer A, Torres-Dowdall J, Kaupp M and Meyer A: Phenotypic plasticity in Midas cichlid opsin expression
- **4<sup>th</sup> Cichlid Science Meeting**, Graz, Austria, September 2015. Härer A, Torres-Dowdall J, Kaupp M and Meyer A: Phenotypic plasticity in Midas cichlid opsin expression

#### Poster presentations

- **MEEvirtual**, 2020. Härer A, Torres-Dowdall J, Rometsch SJ, Yohannes E, Machado-Schiaffino G and Meyer A: Parallel and non-parallel changes of the gut microbiota during trophic diversification in repeated young adaptive radiations of sympatric cichlid fish
- **16<sup>th</sup> European Society for Evolutionary Biology Meeting**, Groningen, Netherlands, August 2017. Härer A, Torres-Dowdall J and Meyer A: Evolution of the visual system in Neotropical cichlids: how to adapt to novel light environments
- **Evolution Meeting**, Austin, TX, June 2016. Härer A, Torres-Dowdall J and Meyer A: The imperiled fish fauna in the Nicaragua Canal zone
- **14<sup>th</sup> European Society for Evolutionary Biology Meeting**, Lisbon, Portugal, August 2013. Härer A, Henning F and Meyer A: Genomic instability in the locus responsible for a conspicuous polychromatism in Nicaraguan Midas Cichlid fish

## PUBLICATIONS

### Publications in peer-reviewed scientific journals

21. [Härer A](#) and Rennison DJ. The effects of host ecology and phylogeny on gut microbiota (non)parallelism across birds and mammals. *mSphere*, ahead of print.
20. [Härer A](#) and Rennison DJ. Gut microbiota uniqueness is associated with lake size – a proxy for diet diversity – in stickleback fish. *The American Naturalist*, just accepted.
19. [Härer A\\*](#), [Mauro AA\\*](#), [Laurentino TG](#), [Rosenblum EB](#) and [Rennison DJ](#). Gut microbiota parallelism and divergence associated with colonisation of novel habitats. *Molecular Ecology* 32(20): 5661-5672.
18. [Härer A](#) and Rennison DJ. Assessing the validity of fecal sampling for characterizing variation in threespine stickleback's gut microbiota. *PLOS ONE* 18(9): e0290875.

17. [Härer A](#) and Rennison DJ. The biogeography of host-associated bacterial microbiomes: revisiting classic biodiversity patterns (2023). *Global Ecology and Biogeography* 32(6): 931-944.
16. [Härer A](#) and Rennison DJ. Quantifying (non)parallelism of gut microbial community change using multivariate vector analysis (2022). *Ecology & Evolution* 12(12): e9674.
15. Minich JJ, [Härer A](#), Vechinski J, Frable B, Skelton Z, Kunselman E, Shane M, Perry D, Gonzalez A, McDonald D, Knight R, Michael T and Allen E. Host biology, ecology and the environment influence microbial biomass and diversity in 101 marine fish species (2022). *Nature Communications* 13: 6978.
14. Karagic N, [Härer A](#), Meyer A and Torres-Dowdall J (2022). Thyroid hormone tinkering elicits integrated phenotypic changes potentially explaining rapid adaptation of color vision in cichlid fish. *Evolution* 76(4): 837-845.
13. [Härer A\\*](#), Ibrahim A\*, Torres-Dowdall J and Meyer A (2022). Heterogeneity across Neotropical aquatic environments affects prokaryotic and eukaryotic biodiversity based on environmental DNA. *Environmental DNA* 4(2): 469-484.
12. Kratochwil CF, Kautt AF, Nater A, [Härer A](#), Liang Y, Henning F and Meyer A (2022). An intronic transposon insertion underlies a trans-species color polymorphism in Midas cichlid fishes. *Nature Communications* 3: 296.
11. Torres-Dowdall J, Karagic N, Härer A and Meyer A (2021). Diversity in visual sensitivity across Neotropical cichlid fishes via differential expression and intraretinal variation of opsin genes. *Molecular Ecology* 30(8): 1880-1891.
10. [Härer A](#), Bolnick DI and Rennison DJ (2021). The genomic signature of ecological divergence along the benthic-limnetic axis in allopatric and sympatric threespine stickleback. *Molecular Ecology* 30(2):451-463.
9. [Härer A](#), Torres-Dowdall J, Rometsch SJ, Yohannes E, Machado-Schiaffino G and Meyer A (2020). Parallel and non-parallel changes of the gut microbiota during trophic diversification in repeated young adaptive radiations of sympatric cichlid fish. *Microbiome* 8: 149.
8. Kautt AF, Kratochwil CF, Nater A, Machado-Schiaffino G, Olave M, Henning F, Torres-Dowdall J, [Härer A](#), Hulseley CD, Franchini P, Pippel M, Myers EW and Meyer A (2020). Contrasting signatures of genomic divergence during sympatric speciation. *Nature* 588: 106-111.
7. [Härer A](#), Karagic N, Meyer A and Torres-Dowdall J (2019). Reverting ontogeny: rapid phenotypic plasticity of colour vision in cichlid fish. *Royal Society Open Science* 6: 190841.
6. [Härer A](#), Meyer A and Torres-Dowdall J (2018). Convergent phenotypic evolution of the visual system via different molecular routes: how Neotropical cichlid fishes adapt to novel light environments. *Evolution Letters* 2(4): 341-354.
5. Karagic N, [Härer A](#), Meyer A and Torres-Dowdall J (2018). Heterochronic opsin expression due to early light deprivation results in drastically shifted visual sensitivity in a cichlid fish: Possible role of thyroid hormone signaling. *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution* 330: 202-214.
4. [Härer A](#), Torres-Dowdall J and Meyer A (2017). Rapid adaptation to a novel light environment: The importance of ontogeny and phenotypic plasticity in shaping the visual system of Nicaraguan Midas cichlid fish (*Amphilophus citrinellus* spp.). *Molecular Ecology*,26(20): 5582-5593.
3. Torres-Dowdall J, Pierotti MER, [Härer A](#), Karagic N, Woltering J, Henning F, Elmer KR and Meyer A (2017). Using the whole toolbox: multiple molecular mechanisms are involved in the parallel rapid adaptive evolution of the visual system of Neotropical Midas cichlid fish. *Molecular Biology and Evolution* 34(10): 2469-2485.

2. Härer A, Torres-Dowdall J and Meyer A (2017). The imperiled fish fauna in the Nicaragua Canal zone. *Conservation Biology* 31: 86-95.
1. Huete-Pérez JA, [and 23 others, including Härer A] (2016). Critical uncertainties and gaps in the environmental and social impact assessment of the proposed transoceanic canal through Nicaragua. *BioScience* 66: 632-645.

**Short communications**

1. Verheyen E, [and 69 others, including Härer A] (2016). Oil extraction imperils Africa's Great Lakes. *Science* 354: 561-562.