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Dr. rer. nat. Daniela Christina Rößler

PERSONAL DATES

12/12/1988
Trier, Germany

SCIENTIFIC INTERESTS

I am a behavioral and evolutionary ecologist with a focus on animal behavior, cognition, and visual signals in the context of predator-prey interactions. My experience spans from invertebrate to vertebrate systems and I am interested in diverse anti-predator and predator adaptations. I use interdisciplinary and integrative approaches in both the lab and the field with an emphasis on natural history and objective quantification of behavior using neural network-based video tracking methods.

RESEARCH & TEACHING EXPERIENCE

Postdoctoral Fellow, Zukunftskolleg, University of Konstanz &
Max Planck Institute of Animal Behavior, Jordan Lab, Konstanz

Since June 2021

Postdoctoral fellowship to investigate an independent research project called "Hungry eyes: an experimental framework testing eye camouflage in active predators"

Postdoctoral Research Fellow, John Harvard Distinguished Science Fellows Program, Harvard University

January 2020 – June 2021

Postdoctoral research fellow in Paul Shamble's lab at Harvard University. Research focus on behavior, signals, and cognition of jumping spiders in predator-prey interactions.

Lectureship, Trier University

October 2017 – December 2019

Lecture: Animal Physiology; Seminars: Animal Physiology & Animal Anatomy (for undergraduate biology students)

PhD in Behavioral Ecology, Trier University

July 2014 – June 2019 (submission)

Supervisors: Prof. Dr. Stefan Lötters (Trier University) and Prof. Dr. Heike Pröhl (University of Veterinary Medicine Hannover). I defended my dissertation on November 22, 2019 and passed my PhD with highest distinction (*summa cum laude*).

Title: *Visual ecological aspects in interspecific communication – Examples from predator-prey and parasite-host interactions.*

Advanced Training in University Didactics

2018, three courses in advanced training in teaching at the University ('E-Learning', 'Project-oriented learning' and 'Key competences in teaching')

Field Research

2014 - 2018, 4 research field trips to the tropics (Peru, Brazil, and French Guiana)

Teaching Assignments, Trier University

February – April 2014 & February – April 2015, Seminar on Animal Physiology

(CO-)SUPERVISED BACHELOR & MASTER THESES

Do jumping spiders distinguish different types of conspecifics based on static visual stimuli? (Anna Stanton, Bachelor thesis, University of Konstanz, 2021)*

The function of bright coloration in prey capture and predator avoidance behaviour in the wasp spider *Argiope bruennichi* (Milena Greis & Eva Schmitt, Bachelor thesis, Trier University, 2020)

Color traits in the neotropical toad genus *Atelopus*: connections to morphology and habitat (Linda-Mali Weißenfels, Bachelor thesis, Trier University, 2019)

Are fire salamanders (*Salamandra salamandra*) aposematic? A pilot study using clay models to genetically assess potential predators (Tatjana Walter, Master thesis, Trier University, 2019)*

Is the fire salamander (*Salamandra salamandra*) aposematic? A predation experiment using clay models-a pilot study (Charlene Peters, Bachelor thesis, Trier University, 2019)*

The function of fire salamander coloration (Michèle Fugmann, Master thesis, Trier University, 2019)*

Conspicuousness of dorsal patterns of Amazonian *Atelopus* populations in relation to body size (Katrin Puffay, Master thesis, Trier University, 2017)*

An approach to evaluate conspicuousness of dorsal patterns in neotropical Anurans (Felicia-Lee Rock, Master thesis, Trier University, 2015)*

** not an official referee, but contributed significantly to study idea, design, and realization*

HIGHER EDUCATION

Trier University, Doctoral Studies

2014-2019 Dr. rer. nat. (*summa cum laude*)

Trier University, Master of Education

2011-2014 Master of Education in Anglistics and Biology

Trier University, Bachelor of Education

2008-2011 Bachelor of Education in Anglistics and Biology

LANGUAGE AND SKILLS

Foreign Languages

English, excellent
French, good
Portuguese, basic
German, mother tongue

Software & Programming Skills

RStats | Python | Adobe Illustrator

Animal Husbandry

Poison frogs | Harlequin toads | Jumping spiders

AWARDS, GRANTS, FUNDING AND SCHOLARSHIPS

2021: 2-year postdoctoral fellowship at the highly competitive Zukunftskolleg (University of Konstanz) (140 applicants)

2020: Outstanding dissertation award, Trier University (2000€)

2019: Best poster award, ESEB meeting in Turku, Finland (European Society for Evolutionary Biology) (ca. 300€)

2018: Travel award, ISBE meeting in Minneapolis, USA (International Society for Behavioral Ecology) (1,200 US$)

2015-2017: PhD fellowship from the Scholarship foundation Rhineland-Palatinate (total 34,000 €)

2014-2018: Several travel & conference grants awarded by the research fund of Trier University (total 3,400 €)

EQUITY, DIVERSITY & INCLUSION

Belonging to the LGBTQ+ community myself and having worked in a predominantly male research field (herpetology), equity, diversity, and inclusion (EDI) are key elements in my understanding of good and fair science. Acknowledging my privileged position of being a white woman from a high-income nation, my aim is to listen to and amplify the voices of underrepresented groups. I want to contribute to make science fairer and accessible to all. In effort of this, I published a correspondence article in *Nature* on EDI issues in the publication system and how scientific journals can contribute to lead a much-needed change.

Rößler, D.C., Lötters, S., Marin Da Fonte, L.F., 2020. Author declaration: have you considered equity, diversity and inclusion? ***Nature***, 585(7822). https://doi.org/10.1038/d41586-020-02429-8

SCIENTIFIC OUTPUT

Publications

Rößler, D.C., De Agrò, M., Biundo, E., Shamble, P.S., 2021. Hanging by a thread: unusual nocturnal resting behavior in a jumping spider. ***Frontiers in Zoology***, 18(1). https://doi.org/10.1186/s12983-021-00410-3

De Agrò, M., **Rößler, D.C.,** Kim, K., Shamble, P.S., 2021. Perception of biological motion in a jumping spider. Preliminarily accepted in ***PLOS Biology*** (*accepted).*

Rößler, D.C., Lötters, S., Veith, M., Fugmann, M., Peters, C., Künzel, S., Krehenwinkel, H., 2020. An amplicon sequencing protocol for attacker identification from DNA traces left on artificial prey. ***Methods in Ecology and Evolution***, 11(8). https://doi.org/10.1111/2041-210X.13459

Rößler, D.C., Ogan, S., Curio, E., Krehenwinkel, H., 2019. Ability makes a thief: vision, learning and swift escape help kleptoparasitic hover wasps (*Parischnogaster* sp.) not to fall prey to their spider hosts. ***Behavioral Ecology and Sociobiology***, 73(152). https://doi.org/10.1007/s00265-019-2767-8

Portik, D.M., Bell, R.C., Blackburn, D.C., Bauer, A.M., Barratt, C.D., Branch, W.R., Burger, M., Channing, A., Colston, T.J., [...] **Rößler, D.C.**, Sinsch, U., Rödel, M.O., Veith, M., Vindum, A.G., Zassi-Boulou, J., McGuire, J.A., 2019. Sexual dichromatism drives diversification within a major radiation of African amphibians. ***Systematic Biology***, sys023. https://doi.org/10.1093/sysbio/syz023

Rößler, D.C., Lötters, S., Mappes, J., Valkonen, J., Menin, M., Lima, A.P., Pröhl, H., 2019. Sole coloration as an unusual aposematic signal in a Neotropical toad. ***Scientific Reports***, 9(1), 1128. https://doi.org/10.1038/s41598-018-37705-1

Rößler. D.C., Pröhl, H, Lötters, S., 2018. The future of clay model studies. ***BMC Zoology***, 3(1), 6. https://doi.org/10.1186/s40850-018-0033-6

Mebs, D., Lorentz, M., Yotsu-Yamashita, M., **Rößler, D.C.**, Ernst, R., Lötters, S., 2018. Geographic range expansion of tetrodotoxin in amphibians – First record in *Atelopus hoogmoedi* from the Guiana Shield. ***Toxicon***, 150, 175-179. https://doi.org/10.1016/j.toxicon.2018.05.011

Rößler, D.C., 2017. *Atelopus spumarius* (Pebas Stubfoot Toad). Behavior. ***Herpetological Review***, 48(3), 604.

Lorentz, M.N., Stokes, A.N., **Rößler, D.C.**, Lötters, S., 2016. Tetrodotoxin. ***Current Biology***, 26(19), R870-R872. https://doi.org/10.1016/j.cub.2016.05.067

Schulte, L.M. & **Rößler, D.C.**, 2013. Do poison frogs recognize chemical cues of the other sex or do they react to cues of stressed conspecifics? ***Behavioural Processes***, 100, 32-35. https://doi.org/10.1016/j.beproc.2013.07.016

In Preparation

Rößler, D.C., De Agrò, M., Kim, K., Shamble, P.S., 2021. Static visual predator recognition in jumping spiders.

Marin Da Fonte, L.F., **Rößler, D.C.**, 2021. Reducing language injustice in STEM: Recognition for language editing and translation.

Conference Talks

Rößler, D.C., Lötters, S., Mappes, J., Valkonen, J., Menin, M., Lima, A.P., Pröhl, H., 2018. These soles are made for warning: an uncommon case of aposematism in a Neotropical toad. ISBE (International Society for Behavioral Ecology), Minneapolis, USA.

Rößler, D.C., Lötters, S., Menin, M., Lima A.P. & Pröhl, H., 2017. A new type of aposematism? Flashy feet in harlequin toads are conspicuous signal to predators. SEH (European Society for Herpetology), Salzburg, Austria.

Invited Talks

Rößler, D.C., 2020. Arachno-Arachnophobia! Visual predator recognition in jumping spiders. Stonehill College, Boston, USA. [Invited by Prof. Dr. Bronwyn Bleakley]

Rößler, D.C., 2021. Visual signals and their function: Introduction to scientific research. Max-Planck-Gymnasium Trier, Online-Seminar for all students in advanced biology courses.

Conference Poster

Rößler, D.C., Lötters, S., Fugmann, M., Peters, C., Veith, M., Krehenwinkel, H, 2019. Bite me! Predator identification from salivary DNA left on artificial prey.ESEB (European Society for Evolutionary Biology), Turku, Finland. [Award for best poster by public choice] 10.6084/M9.FIGSHARE.9698618.V1

Reviewer Activity

Animal Conservation | Animal Behaviour | Behavioral Ecology | Biotropica | Functional Ecology | Journal of Animal Ecology | PeerJ

Outreach and media attention

19.05.2021 | Several news articles covered the finding from our paper on nocturnal resting in a jumping spider in ***Frontiers in Zoology*** (here), including Popular Science, NPR radio, and Ethologisch.

14.01.2021 | Coverage of Cell's implementation of the "Inclusion and Diversity Statement" in ***Science*** see here

23.11.2020 | Blogpost in the official "Methods in Ecology and Evolution"-Blog on our eDNA-clay protocol see here