

## CV and Research Output – Nina Gerber

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### Research experience

- 02.2020 – present      **Postdoctoral Fellow**, Georg-Augustus University in Göttingen, Germany, collaborating with Prof. Niko Balkenhol and Dr. Johannes Signer in a project on the effects of wolf recolonization on the ecosystem in cultural landscapes.
- Analysis and simulation of movement data
  - Population monitoring and collecting and management of telemetry data
  - Planning and conducting field experiments
  - Camera trap monitoring and designing studies
  - Supervision of students
- 03.2019 – 01.2020      **Postdoctoral Fellow**, Queensland University of Technology, Brisbane, collaborating with Assoc. Prof. Mike Bode in a project on connectivity and larval dispersal in metapopulations.
- Data analysis and parameter estimation
  - Spatial modelling of metapopulation dynamics
  - Optimisation of Reserve network
  - Conservation planning
- 08.2018 – 01.2018      **Postdoctoral Researcher**, Department for Evolutionary Biology and Environmental Studies, University of Zurich, advised by Prof. Dr. Anna Lindholm. Data analysis for the project: “The influence of ecological factors on maternal effects in house mice”.
- Data analysis of field data (Mainly Linear models and survival analyses)
  - Manuscript writing and publishing for international peer reviewed journals
- 03.2018 – 08.2018      **Postdoctoral Researcher**, Department for Evolutionary Biology and Environmental Studies, University of Zurich, advised by Prof. Dr. Hanna Kokko. Project management and writing and publishing in different projects, Lecturing and tutoring in different Lectures and practicals.
- Data analysis of field data (Mainly Linear models and survival analyses)
  - Manuscript writing and publishing for international peer reviewed journals
  - Data analysis and model construction (individual based simulations)

05.2014 – 09.2014      **Field Assistant** to collect and identify plants and visiting pollinators in different field sites in the Bernese pre-alps, Switzerland Community Ecology, Institute of Ecology and Evolution, University of Bern, advised by Dr. Eva Knop

## Academic Education

- 03.2015 – 03.2018      **PhD Candidate**, Department for Evolutionary Biology and Environmental Studies, University of Zurich, and Department of Biological and Environmental Science, University of Jyväskylä, Finland, supervised by Prof. Dr. Hanna Kokko; PhD thesis: “Cyclical parthenogenesis and the evolution of sex: the causes and consequences of facultative sex” (Date of Defense: 02.03.2018)
- Developing and analysis of different types of mathematical models (genetic algorithm, demographic simulations, individual based models) and analysis of empirical data
  - Conducting literature reviews
  - Planning and conduction two field seasons at the southern coast of Finland in Daphnia ecology
  - Reviewing and writing of papers in international peer re-viewed scientific journals.
- 09.2013 – 02.2015      **MSc in Ecology and Evolution** with special qualification in Behavioural Ecology, University of Bern (summa cum laude); Master thesis: „Olfactory communication in a cooperative dilemma in Norway rats“, supervised by PhD candidate Manon Schweinfurth and Prof. Dr. Michael Taborsky
- 09.2010 – 08.2013      **BSc Biology** with special qualification in Ecology and Evolution, University of Bern; Bachelor thesis: “No direct reciprocal cooperation in the absence of olfactory information in female Norway rats (*Rattus norvegicus*)”, supervised by Prof. Dr. Michael Taborsky

## Publications

- Gerber, N. \***, Y Auclair, \*, B. König, A.K. Lindholm. *Frontiers in Ecology* *accepted*. Population density and temperature influence the return on maternal investment in wild house mice. *Frontiers in Ecology and Evolution* available on *bioRxiv* doi: <https://doi.org/10.1101/2020.06.30.177089>
- Gerber, N.**, M.K. Schweinfurth & M. Taborsky, *accepted*. The smell of cooperation: Rats reciprocate help solely based on odour cues. *ProcB*
- Gerber N.** & H. Kokko, **2018**. Abandoning the ship using sex, dispersal, or dormancy: multiple escape routes from challenging conditions. *Philosophical Transactions of the Royal Society B*. [10.1098/rstb.2017.0424](https://doi.org/10.1098/rstb.2017.0424)
- Gerber N.**, I. Booksmythe & H. Kokko, **2018**. Sex allocation theory for facultatively sexual organisms inhabiting seasonal environments: the importance of bet-hedging. *American Naturalist*. [10.1086/697727](https://doi.org/10.1086/697727)
- Booksmythe I., **N. Gerber**, D. Ebert & H. Kokko, **2018**. Daphnia females adjust sex allocation in response to current sex ratio and density. *Ecology Letters*. [10.1111/ele.12929](https://doi.org/10.1111/ele.12929)
- Gerber N.**, H. Kokko, D. Ebert & I. Booksmythe, **2018**. Daphnia invest in sexual reproduction when its relative costs are reduced. *Proceedings: Biological Sciences*. [10.1098/rspb.2017.2176](https://doi.org/10.1098/rspb.2017.2176)
- Fischer, S., E. Oberhummer, F. Saraiva, **N. Gerber** & B. Taborsky, **2017**. Smell or vision? The use of different sensory modalities in predator discrimination. *Behavioral Ecology and Sociobiology*, [10.1007/s00265-017-2371-8](https://doi.org/10.1007/s00265-017-2371-8)
- Gerber, N.** & H. Kokko, **2016**. Sexual conflict and the evolution of asexuality at low population densities. *Proceedings: Biological Sciences*, [10.1098/rspb.2016.1280](https://doi.org/10.1098/rspb.2016.1280)

*Under review / in preparation*

- Lindstedt, C., **N. Gerber**, H. Kokko, *under review*. Sex ratio and sexual conflict in a collective action problem of group defence by haplodiploid insect larvae. *PNAS available on bioRxiv doi: <https://doi.org/10.1101/2020.01.29.924316>*
- Gerber**, N. & M. Bode *in prep*. Dead or somewhere else? Juvenile mortality and metapopulation dynamics of the orange clownfish, *Amphiprion percula*.
- Bode, M., H.B. Harrison, N. **Gerber**, D. Williamson, S. Chouckroun, J. Leis & G.P. Jones *in prep*. Marine reserves are the major source of larval supply on the Great Barrier Reef
- Gerber**, N. F.Riesch, M.Paap,K. Bojarska, N. Rohwer, J. Signer, S. Herzog, H. Okarma, J. Isselstein & N. Balkenhohl. *in prep*. When can we expect recolonizing wolves to affect large herbivore behaviour and ecosystems in cultural landscapes of Europe? A review of potential mechanisms and limiting factors
- Fedyń, I., K. Bojarska, **Gerber**, N. & H. Okarma. *in prep*. Spatio-temporal variation of damage caused by wolves in Poland
- Ryser, R. & **Gerber**, N. *in prep*. Why restoring ecosystem is not enough.

### Prizes, awards, fellowships

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| 2018 | SNSF Early Postdoc Mobility Fellowship (>100 000 CHF) for the project: “Dead or somewhere else? Juvenile mortality and metapopulation dynamics of the orange clownfish, <i>Amphiprion percula</i> ” |
| 2016 | Best talk award at Biology16  |
| 2015 | Best talk award (Runner up) at Biology15  |

### Invited talks

- Animal Behaviour and Conservation Seminar (University of Manchester): To eat and being eaten: The recolonisation of the cultural landscape of Europe and potential trophic cascades
- FIWI internal seminar (University of Bern): Who’s afraid of the returning wolves? Predator-prey interactions and potential trophic cascades

### Selection of contributions to international conferences

- BES (*Talk*) Annual meeting of the British Ecological Society Belfast, Ireland: *Dead or somewhere else? Marine reserve contribution and larval mortality in the reef fish system*
- ESEB (*Talk*) Meeting of the European Society of Evolutionary Biology, Groningen, Netherlands: *The coevolution of sex and dispersal*
- Biology16 (*Talk*) Lausanne, Switzerland: *Male sexual harassment and the evolution of asexuality at low population densities*
- BES (*Talk*) Annual meeting of the British Ecological Society Liverpool, UK: *The coevolution of sex and dispersal and the evolution of dispersal through kin competition*
- EMPSEB (*Talk*) European Meeting of PhD Students in Evolutionary Biology 21, Stirling, UK: *When to have sex? A big question in the life of cyclical parthenogens*
- Biology15 (*Talk*) Dübendorf, Switzerland: *The smell of cooperation: Norway rats reciprocate help based on odour cues alone*
- ECBB (*Talk*) European Conference on Behavioural Biology, Prague, Czech: *Norway rats need olfactory information to cooperate reciprocally in an iterated prisoner’s dilemma game*

### Teaching activities

- Tutor: Waldnaturschutz und spezielle Waldökologie (Fall 2020)
- Tutor WaldWild Seminar (Landscape of fear/ Die Rückkehr von Grossprädatoren nach Europa (Fall 2020)

Tutor/Lecturer of MatLab practicals in “Exploitation of renewable resources”( Spring 2018)  
 Lecturer in “Exploitation of renewable resources” (Spring 2016/2017)  
 Teaching assistant in a practical course on the statistical analysis of biological data (Spring 2017)  
 Organisation of a PhD retreat in Evolutionary Biology, Moeschberg, Switzerland (Spring 2017)  
 Tutor/Lecturer of a MatLab practical course on “Sustainable harvesting in age structured populations” (Spring 2016)  
 Teaching assistant in a practical course on classical and molecular genetics (Fall 2016)

### Selection of thesis project supervision

Einfluss menschlicher Aktivität auf Wildbewegung, speziell für Reh und Wildschwein. BSc thesis, University Göttingen. Sören Pollmann.  
 Der Einfluss von Habitatsstruktur und menschliche Aktivität auf das Wachsamkeitsverhalten beim Rothirsch. Universität Göttingen. Anik Brandenburg und Alina Johannmeier.  
 Evaluating large-scale wildlife responses to human infrastructure: The impact of the road network on MSA. MSc thesis, University of Göttingen. Max Lennart Petersen & Rosa Schipper  
 The influence of Camera trap design on captures rates, ungulates densities and species interactions. BSc thesis University of Göttingen. Christian Lönnecker.  
 The effect of weather, tree composition and sun time on the trapping rate in small mammals and its influence on seed dispersal. BSc thesis, University of Göttingen. Arina Elisabeth Hornschielt  
 Scent marking in wild canids: Are scent markings species. Specific: MSc thesis in collaboration with the Polish Academy of Science and the TU Dresden. Elina Jarmer  
 The influence of carnivore scent marks on herbivore behaviour: MSc thesis in collaboration with the Polish Academy of Science and the TU Dresden. Anik Brandenburg  
 The ecological adaptations of wolves: what factor shape activity patterns and behaviour considering underlying genetics. Vivien Gysemberg

### Outreach activities

Scientific Speed Dating at Biology17, University of Bern  
 Scientific outreach activity at Biology16 including [poster](#) exhibition, University of Lausanne  
 Contribution to the *Science* contest “Dance your PhD” ([Link to video](#))  
 Scientific contribution to an exhibition at the Zoological Museum Zurich:  
 - Developing a [comic](#) to the topic “Fakultativer Sex, das Beste zweier Welten” / “Facultative sex, the best of both worlds”, in collaboration with artist Tara Gschwend from Life Science Zurich  
 - Guided tour at the Zoological Museum of Zurich: “Sex aus der Sicht einer Biologin” / “Sex from a biologist’s point of view”  
 - Guided tour at the Zoological Museum of Zurich: “Fakultativer Sex, das Beste zweier Welten” / “Facultative sex, the best of both worlds”

### Language

German	Native
English	Fluent
French	Basic

### Digital competences

Data analysis/management	Data Dryad, GitHub, MatLab, R, Latex
Illustration	Photoshop, Adobe Illustrator, Premiere CC Pro

## Membership in panels, boards, etc., and individual scientific reviewing activities

Panel member of the Postdoc Committee of the University Göttingen

Memberships: British Ecological Society (BES), Swiss Zoological Society, Gruppe Wolf Schweiz (GWS), Centre of Excellence of Species Interactions, Centre for Biodiversity and Conservation Science (CBCS), Mountain Wilderness Switzerland, Rewilding Europe.

Reviewer for: *Philosophical Transactions of the Royal Society B*, *The American Naturalist*, *Theoretical Population Biology*