

## Curriculum Vitae

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Dr. Barbara Feldmeyer

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## Research Interests

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Local adaptation, population genomics, comparative genomics, gene regulation, niche evolution, behavioral genetics, gene expression, life-history traits, temperature adaptation/acclimation

## Professional Appointments

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03/2015 - current **Scientist & Lab manager**, Ecological Genomics, BiK-F Frankfurt  
2012-02/2015 **Assistant professor**, Evolutionary Biology, University Mainz  
03/2009 – **Post-Doc**, Ecological Genomics, BiK-F Frankfurt  
12/2011

## Education

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09/2004 - PhD Thesis, University Groningen, The Netherlands  
04/2009 Topic: „The Effect of Temperature on Sex Determination“.  
10/2001 - Diploma, Study of Biology, University Würzburg  
09/2004 Topic: „Differences of host usage of *Crematogaster* Msp. 4 and 10 on different *Macaranga* host plants. Does adaptation lead to population substructuring?“  
10/1998 - Biology Studies („Vordiplom“), University Greifswald  
09/2000  
07/1998 Abitur, Werkgymnasium, Heidenheim

## Grants & Prices

2022 “Genomic and gene regulatory basis of rapid evolutionary diversification of a multifunctional trait” 2PhD positions, DFG funded; applicants: shared Jan Büllesbach, Barbara Feldmeyer, Florian Menzel, Voker Nehring, Oliver Niehuis, Thomas Schmitt.  
2021 DFG SPP2349 priority program. Part of the organizing committee.  
2020 TBG sequencing grant  
2020 „Genome-wide detection of selection and adaptation in a co-evolving slavemaking ant and its host“ 2 PhD positions, DFG funded; applicants: shared Foitzik and Feldmeyer

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| 2018 | „Die funktionelle Basis der Umkehrung des Fekundität-Langlebigkeits Trade-Offs bei der Ameise <i>Temnothorax rugatulus</i> “ 1 PhD position, DFG funded; applicants: shared Foitzik and Feldmeyer   |
| 2015 | "Evolution, genetic basis and behavioural consequences of the diversification of cuticular hydrocarbon profiles: a case study of parabiotic ants." 2 PhD positions, DFG funded; applicants: Menzel, Schmitt and Feldmeyer                                   |
| 2015 | “Fecundity/longevity reversal in a social insect with alternative reproductive strategies“ within the Research Unit “Sociality and the reversal of the fecundity-longevity trade-off”, 1 PhD position, DFG funded; applicants: shared Foitzik and Feldmeyer |
| 2014 | Travel Grant, Equal Opportunity, Mainz University   |
| 2015 | Inner-university Research Grant, Mainz University   |
| 2014 | “The evolution of slavery in ants and the genetic basis of slavemaker and host behavior”, 1 PhD position, DFG funded; applicants: shared Foitzik and Feldmeyer  |
| 2014 | “The (epi-) genetic bases of division of labor in social insects”, 1 PhD position GeneRed program, Mainz University; applicants: shared Foitzik and Feldmeyer   |
| 2014 | Travel & Research grant, Huyck Preserve, NY, USA  |
| 2014 | Travel Grant, Equal Opportunity, Mainz University   |
| 2013 | NMFZ Research Grant, Mainz University-Medical Department  |
| 2012 | Inner-university Research Grant, Mainz University   |
| 2012 | Travel Grant, Equal Opportunity, Mainz University   |
| 2007 | Travel Grant, Uyttenboogaart Eliassen Foundation  |
| 2005 | Field Grant, Genetics Society of Britain  |
| 2004 | Ph.D. Scholarship Robert Bosch Foundation   |
| 2003 | Poster price IUSSI  |
| 2002 | Fonds Hochschule International (Grant for advanced course)  |

### **Organization of Workshops/Symposia**

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| 01/2017 | Symposium: “The genomic basis of climate adaptation”, together with colleagues in Frankfurt, Germany. |
| 10/2016 | Workshop: “Transcriptome Analysis”, together with colleagues, Freiburg, Germany.                      |
| 03/2010 | Workshop: Hands on genomic/transcriptomic data mining. BiK-F Frankfurt, Germany.                      |
| 03/2010 | Symposium: Hands on genomic/transcriptomic data mining. BiK-F Frankfurt, Germany.                     |

## Attended Courses and Workshops

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| 2014      | Neues in der Lehre, Mainz  |
| 2010/2011 | Mentoring programme, Frankfurt University  |
| 2011      | Grant application course, Goethe Graduate Academy, Frankfurt.  |
| 2010      | Real-Time PCR, life technologies, Mainz.   |
| 2010      | Hands on genomic/transcriptomic data mining, Bik-F, Frankfurt.   |
| 2009      | Roche GS FLX Titanium Training, Penzberg.  |
| 2008      | Publishing using Word. Donald Smits Center for Information Technology, Rijksuniversiteit Groningen (RuG).            |
| 2007      | Structural Equation Modelling Workshop. Conservation and Community Ecology Group, RuG.                               |
| 2006      | Generalized Linear Models: an Introduction into R. Graduate School Functional Ecology, RuG.                          |
| 2006      | Programming in C++, undergraduate course, RuG.   |
| 2005      | Book discussion: "A Biologist's Guide to Mathematical Modelling" by S.Otto & T. Day, Theoretical Biology Group, RuG. |
| 2004      | Life History Trait Evolution, Graduate School Functional Ecology, RuG.   |
| 2004      | Media Training Workshop, Elmau, Germany.   |

## International and Research Experience

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| 2016+2018            | Field Research French Guyana  |
| 2012-2021            | Several Field Trips to various states in the US   |
| 08/2005              | Field Research Tanzania   |
| 03/2005              | Field Research Südafrika  |
| 03-05/2003           | Field Research Sabah, Malaysia  |
| 08-09/2002           | Advanced Course in Tropical Ecology, Sabah, Malaysia. Experiments on host plant preferences of two <i>Crematogaster</i> Msp. on <i>Macaranga</i> .  |
| 04-10/2002           | Student assistant job at the German Forestry Department, Freising: Collecting and sorting of oak forest insect traps.   |
| 02-06/2001           | Forest Ecology-Project in cooperation with CIFOR in East Kalimantan, Borneo, Indonesia. Work on exclosures to study the impact of larger mammals on the understory vegetation in primary rain forest. |
| 10/2000 -<br>01/2001 | Social behaviour project on Rock-Wallabies in Queensland, Australia (Cooperation with Townsville-University).   |
| 11/1999 -<br>02/2000 | Student assistant job at the Zoological Institute Greifswald: preparation of course material and REM of <i>Eisenia fetida</i> .   |
| 09/1995 -<br>07/1996 | School year at Salem High School, Virginia, USA.  |

## Journal Reviews (excerpt)

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Biology Letters, Molecular Biology and Evolution, BMC Biology, BMC Genomics, Conservation Genetics, Evolution, Evolution Letters, Nature Ecology and Evolution, G3, Genome Biology and Evolution, GigaScience, Ecology and Evolution, Animal Behaviour, PeerJ, Molecular Ecology Resources, Frontiers in Zoology, Insect Sociaux, Insect Molecular Biology, Myrmecological News, Ecological Indicators, Gene, Science Advances, Contributions to Zoology, Journal of Conchology, International Journal of Molecular Sciences, Insect Science, Journal of Insect Science, International Journal of Biodiversity, American Malacological Bulletin, Invertebrate Reproduction and Development, Scientific Reports

## Invited Talks

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“Fast genomics for slow snails: Next Generation Sequencing and the pond snail *Radix balthica*” (2011), Westfälische Wilhelms-Universität Münster, Germany.

“Next generation sequencing: platforms & applications”, (2013) University of Koblenz and Landau, Germany.

“The genomic basis of behavioral and ecological adaptations: insights from ants and snails”, (2014) University of Hamburg, Germany.

“The genomic basis of behavioral and ecological adaptations: insights from ants and snails”, (2015) Ernst-Moritz-Arndt-University of Greifswald, Germany.

“The genomic basis of behavioral and ecological adaptations: insights from ants and snails”, (2016) Eberhard Karls University of Tübingen, Germany.

“Behavioral variation and its genomic basis in ants”, (2016) 18ème Colloque Biologie de l’Insecte, Tours, France, Invited speaker

“Behavioral variation and its genomic basis in ants”, (2017) University of Halle, Germany.

“Climate adaptation and adaptive genomics: How do ectotherms cope with temperature?” (2017) University of Regensburg, Germany.

“Climate adaptation and adaptive genomics: How do ectotherms cope with temperature?”(2018) University of Münster, Germany.

“How do social insect queens get it all: long life and high fecundity?” (2022) University of Göttingen, Germany.

## Teaching

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### *Practicals*

|              |  |
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| WS 2005-2007 | Molecular Genetics & Genomic, two weeks                  |
| WS 2008      | Evolutionary Genetics, four weeks                        |
| SS 2011      | Diversity of Organisms and their Habitats                |
| WS 2012      | Evolution of aquatic Organisms                           |
| SS 2012-2014 | Species determination class                              |
| SS 2012-2014 | Bachelor: Evolution and Behavioural Ecology              |
| WS 2012-2013 | Master: Animal Evolution, Ecology and Behavior           |
| SS 2014-2018 | Master: Molecular Ecology and Population Genetics, BiK-F |
| SS 2019-2020 | BC: Molecular Ecology and Population Genetics, BiK-F     |

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| SS 2019          | Master: Metagenomics workshop, Rumania       |
| <i>Seminars</i>  |  |
| WS, SS 2010-2011 | Ecological Genomics                          |
| SS, WS 2012-2014 | Behavioural Ecology                          |
| <i>Lectures</i>  |  |
| SS 2012-2014     | Behavioural Ecology and Evolutionary Biology |
| WS 2012-2013     | Behavioural Ecology and Evolutionary Biology |

## Student Supervision

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### *Bachelor projects*

Jessica Appel (2011, Frankfurt), since 2012 in Mainz: Kira Hoffmann, Jessica Crongeyer, Daniel Elsner, Elisabeth Brylka, Philip Sprenger, Miriam Pons, Anna Blöcher, Fabian Reinwald, Nadja Schäfer, Lars Burkert, Damaris Peterman, Katharina Mauer, Sarah Petermann, Nico Goß. Since 2017 in Frankfurt: Helena Winterberg

### *Master-/Diplom/Lehramt projects*

Anna Harz (2008, Groningen), Adrian Pachzelt (2010, Frankfurt), Tilman Schell (2012, Frankfurt), Bastian Geshake (2013, Frankfurt), Alexander Rey (2014, Mainz), Miriam Zumbusch (2014), Daniel Elsner (2015, Mainz), Dennis Lüders (2016, Frankfurt), Aaron Willenbücher (2017, Mainz)

### *PhD students*

Co-supervised with Prof. Susanne Foitzik, Mainz: Philip Kohlmeier (start 2014), Austin Alleman (start 2014), Matteo Negroni (start 2015), Marina Choppin (start 2018), Erwan Collin (start 2020), Maide Macid (start 2020).

Co-supervised with Florian Menzel: Juliane Hartke (start 2016), Philipp Sprenger (start 2016), Shadi Karimifard (2023).

## Attended Conferences

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|         |   |
|---------|---|
| 07/2022 | How do social insect queens get it all: long life and high fecundity? IUSI, San Diego, USA. Talk  |
| 10/2021 | Longevity/fecundity trade-off in social insects: insights from the ant <i>T. rugatulus</i> . Gutenberg Workshop Ageing, Germany. Talk               |
| 03/2019 | Population genomic structure and environmental association of two ant-species across French Guiana. IUSI, Vienna, Austria. Poster                   |
| 08/2018 | The genome of a parabiotic ant species <i>Crematogaster levior</i> with highly diverse cuticular hydrocarbon profile. IUSI, Guarujá, Brasil. Poster |
| 10/2017 | Species-specific patterns of slavemaker and host phenotype evolution. IUSI, Würzburg, Germany. Talk   |
| 08/2017 | Hybrid genome assembly of the parabiotic ant <i>Crematogaster levior</i> . ESEB, Groningen, The Netherlands. Poster                                 |
| 08/2016 | The genomic basis of slavemaker evolution in the ant genus <i>Temnothorax</i> . IUSI, Helsinki, Finland. Talk                                       |
| 06/2016 | Behavioral variation and its genomic basis in ants. 18ème Colloque  |

- Biologie de l'Insecte. Tours, France. Invited speaker
- 08/2015 Parasite-induced changes in host behavior and gene expression after infection. Congress of the European Society of Evolutionary Biology (ESEB), Lausanne, Switzerland. Poster
- 09/2014 Parasite-induced changes in host behavior and gene expression after infection. DZG, Göttingen, Germany. Talk
- 07/2014 Parasite-induced changes in host behavior and gene expression after infection. IUSSI, Cairns, Australia. Talk
- 01/2014 Of ants, genes and behaviors. Next-Generation Sequencing: New changes and challenges for evolutionary genetics. Symposium, München, Germany. Talk
- 02/2013 The genetic basis of division of labor in social insects. Next-Generation Sequencing: New changes and challenges for evolutionary genetics. Symposium, München, Germany. Talk
- 08/2012 The genetic basis of reproductive division of labor in *Temnothorax* ants: first results of a gene expression study. International Union for the Study of Social Insects. Poster
- 08/2011 Short read Illumina data for the *de novo* assembly of a non-model snail species transcriptome. 13th Congress of the European Society of Evolutionary Biology. Tübingen, Germany. Poster.
- 09/2010 Evolutionary and Ecological Genomics of Adaptation. Fribourg, Switzerland.
- 03/2010 Hands on Genomics/Transcriptomics data mining. Frankfurt, Germany.
- 03/2010 Next-Generation Sequencing: New changes and challenges for evolutionary genetics. Symposium, München, Germany.
- 08/2007 Modeling the evolution of temperature dependent sex determination (TSD). 11th Congress of The European Society for Evolutionary Biology. Uppsala, Sweden. Presentation
- 01/2007 Can temperature explain the geographical distribution of sex determining mechanisms in the housefly? Annual Graduate School Meeting. Lunteren, The Netherlands. Presentation
- 11/2006 Can temperature explain the geographical distribution of sex determining mechanisms in the housefly? 20th Meeting of the Dutch Entomological Society. Ede, The Netherlands. Presentation
- 01/2006 Effects of temperature and latitude on sex determining mechanisms in the housefly. Annual Graduate School Meeting. Lunteren, Netherlands. Poster
- 06/2006 Effects of temperature and latitude on sex determining mechanisms in the housefly. The Nöthiger meeting on "Sex determination in insects". Haren, The Netherlands. Poster
- 11/2005 The Ecology of Temperature. Scientific meeting. Wageningen, The Netherlands.
- 08/2005 10th Congress of The European Society for Evolutionary Biology. Krakow, Poland.
- 11/2004 Association patterns of the *Crematogaster-Macaranga* ant-plant

system: Competition or adaptation towards the hosts? 18th Meeting of the Dutch Entomological Society. Groningen, The Netherlands. Presentation

09/2003

Association patterns of the *Crematogaster-Macaranga* ant-plant system: Competition or adaptation towards the hosts? International Union for the Study of Social Insects. Regensburg, Germany. Poster.