

Work history

- Lecturer in Ecology and Conservation at Oxford Brookes University, United Kingdom** 01/2019 – PRESENT
- Postdoctoral researcher at the University of Liverpool, United Kingdom** 10/2015 – 12/2018
- Project: “Experimental Evolution of *Spiroplasma* symbionts in *Drosophila*”
- Teaching assistant at Universität Leipzig, Germany** 04/2015 – 09/2015
- Organizer and demonstrator for undergraduate course “Zoological Systematics”
- Student assistant at Universität Leipzig, Germany** 10/2008 – 09/2011
- Student demonstrator for undergraduate courses “Zoological Systematics” and “Animal Physiology”

Education

- Dr. rer. nat. Universität Leipzig, Germany** 07/2011 – 05/2015
- Thesis: “*Wolbachia* evolution and distribution patterns: Insights from bee hosts”
 - Reviewers: Prof. Dr. Peter Hammerstein and Prof. Dr. Martin Schlegel
- M. Sc. Biology, Universität Leipzig, Germany** 10/2008 – 09/2010
- Thesis: “Investigations on the *Nomada alboguttata* species complex and *Wolbachia* infections in bees and sphecid wasps”
 - Reviewers: Prof. Dr. Christoph Bleidorn and Prof. Dr. Martin Schlegel
- B. Sc. Biology, Universität Leipzig, Germany** 10/2005 – 09/2008
- Thesis: “Räuber- Beute- Beziehungen im Boden: Beutewahrnehmung und Konsumptionsverhalten carnivorer Tardigraden”
 - Reviewers: Prof. Dr. Willi Xyländer and Prof. Dr. Martin Schlegel
- Abitur (A levels), Gymnasium “An der Rüsternbreite” Köthen (Anhalt), Germany** 07/2004

Teaching experience

- Supervision of graduate projects** 2011 – 2017
- Co-supervised four Bachelor and five Master project students at the Universities Leipzig and Liverpool
- Graduate level teaching** 2014 – 2015
- Co-designed and supervised course “Evolutionary Ecology” at Universität Leipzig
 - Curriculum: Introduction to Unix and R environments, computational methods in phylogenetics
- Undergraduate level teaching** 2011 – 2015
- Organized and supervised course “Zoological systematics” at Universität Leipzig
 - Curriculum: lectures on animal diversity, and practicals on animal identification practicals in the lab and during excursions
 - Served as student demonstrator in the courses “Zoological systematics” and “Animal Physiology” at Universität Leipzig

Competitive funding and grants

2018	Harry Smith Vacation Studentship of the Microbiology Society for project student and consumables	£ 1,846.00
2017	Johnston Post-Doctoral Fund of the IIB Liverpool , project “ <i>Wolbachia</i> -Virus interactions in solitary bees”	£ 3,886.00
2016	Technology Directorate Voucher Scheme sequencing grant of the University of Liverpool	£ 1,955.00
2016	Marie Skłodowska-Curie IF of the European Commission , H2020-MSCA-IF-2015, 703379 “Symbcompat”	€ 183,454.80
2015	Long Term Fellowship of the EMBO , ALTF 48-2015, LTFCONFUND2013, GA-2013-609409	£ 29,483.72
2013	Travel grant of the Gesellschaft für Biologische Systematik , to attend their annual conference	€ 250.00
2012	Stipend of the Research Academy Leipzig , to attend course “Programming for evolutionary biology”	€ 800.00
2013	Travel grant of the Gesellschaft für Biologische Systematik , to attend their annual conference	€ 100.00
2011	Doktorandenförderplatz Universität Leipzig (Stipend for doctoral studies)	€ 41,976.00

Awards

2018	Best student or postdoc talk, 3rd prize <i>Wolbachia</i> Conference	Salem, MA, USA
2016	Microbial Genomics “Most Promising Science Award” for poster at Genome Science Conference	Liverpool, UK
2013	Best student talk, 2nd prize Gesellschaft für Biologische Systematik annual meeting	Bonn, DE

Skills

Programming & scripting	Bash, AWK, Perl, R/Shiny, \LaTeX
Computational methodology	Phylogenetics, phylogenomics, microbial genomics, molecular evolution and ecology
Molecular laboratory	PCR/qPCR, DNA/RNA extractions, library preparation for Illumina & MinION sequencing platforms
Animal husbandry	<i>Drosophila</i> sp. handling, microinjections, life history assays
Taxonomic expertise	Fauna of Germany/Northwest Europe: insects with focus on bees (Anthophila) and hoverflies (Syrphidae)

Publications

PEER-REVIEWED

- [19] Leimeister C, Schellhorn J, Dörrer S, **Gerth M**, Bleidorn C, Morgenstern C (2018) *Prot-SpaM*: Fast alignment-free phylogeny reconstruction based on whole-proteome sequences. *GigaScience* giy148.
- [18] Bleidorn C, **Gerth M** (2018) A critical re-evaluation of multilocus sequence typing (MLST) efforts in *Wolbachia*. *FEMS Microbiology Ecology* 94: fix163.
- [17] **Gerth M**, Wolf R, Bleidorn C, Richter J, Sontowski R, Unrein J, Schlegel M, Gruppe A (2017) Green lacewings (Neuroptera: Chrysopidae) are commonly associated with a diversity of rickettsial endosymbionts. *Zoological Letters* 3: 12.
- [16] **Gerth M**, Hurst GDD (2017) Short reads from honey bee (*Apis* sp.) sequencing projects reflect microbial associate diversity. *PeerJ* 5: e3529.
- [15] Menger J, **Gerth M**, Unrein J, Henle K, Schlegel M (2017) Isolation and characterization of Polymorphic microsatellite loci from the Rufous-throated Antbird *Gymnophithys rufigula* (Aves: Thamnophilidae) *The Wilson Journal of Ornithology* 129: 407–411.
- [14] **Gerth M**, Bleidorn C (2016) Comparative genomics provides a timeframe for *Wolbachia* evolution and exposes a recent biotin synthesis operon transfer. *Nature Microbiology* 2: 16241.
- [13] **Gerth M** (2016) Classification of *Wolbachia* (Alphaproteobacteria, Rickettsiales): No evidence for a distinct supergroup in cave spiders. *Infection, Genetics and Evolution* 43: 378–380.
- [12] Suh A, Witt CC, Menger J, Sadanandan KR, Podsiadlowski L, **Gerth M**, Weigert A, McGuire JA, Mudge J, Edwards SV, Rheindt FE (2016) Ancient horizontal transfers of retrotransposons between birds and ancestors of human pathogenic nematodes. *Nature Communications* 7: 11396.
- [11] Aguado MT, Grande C, **Gerth M**, Bleidorn C, Norena C (2016) Characterization of the complete mitochondrial genomes from Polycladida (Platyhelminthes) using next-generation sequencing. *Gene* 575: 199–205.
- [10] Weigert A, Golombek A, **Gerth M**, Schwarz F, Struck TH, Bleidorn C (2016) Evolution of mitochondrial gene order in Annelida. *Molecular Phylogenetics and Evolution* 94: 196–206.
- [9] Sontowski R, Bernhard D, Bleidorn C, Schlegel M, **Gerth M** (2015) *Wolbachia* distribution in selected beetle taxa characterized by PCR screens and MLST data. *Ecology and Evolution* 5: 4345–4353.
- [8] Kahnt B, **Gerth M**, Paxton RJ, Bleidorn C, Husemann M (2015) The complete mitochondrial genome of the endemic and highly specialised South African bee species, *Rediviva intermixta* (Hymenoptera: Melittidae), with a comparison to other bee mitogenomes. *Biological Journal of the Linnean Society* 116: 940–953.
- [7] **Gerth M**, Saeed A, White JA, Bleidorn C (2015) Extensive screen for bacterial endosymbionts reveals taxon-specific distribution patterns among bees (Hymenoptera, Anthophila). *FEMS Microbiology Ecology* 91: fiv047.
- [6] Glowka E, Dragun-Damian A, Dabert M, **Gerth M** (2015) New *Wolbachia* supergroups detected in quill mites (Acari: Syringophilidae). *Infection, Genetics and Evolution* 30: 140–146.
- [5] **Gerth M**, Gansauge M-T, Weigert A, Bleidorn C (2014) Phylogenomic analyses uncover origin and spread of the *Wolbachia* pandemic. *Nature Communications* 5: 5117.
- [4] Kahnt B, Soro A, Kuhlmann M, **Gerth M**, Paxton RJ (2014) Insights into the biodiversity of the Succulent Karoo hotspot of South Africa: the population genetics of a rare and endemic halictid bee, *Patellapis doleritica*. *Conservation Genetics* 15: 1491–1502.
- [3] **Gerth M**, Röthe J, Bleidorn C (2013) Tracing horizontal *Wolbachia* movements among bees (Anthophila): a combined approach using MLST data and host phylogeny. *Molecular Ecology* 22: 6149–6162.
- [2] **Gerth M**, Bleidorn C (2013) A multilocus sequence typing (MLST) approach to diminish the problems that are associated with DNA barcoding: A reply to Stahlhut et al. (2012). *Systematics and Biodiversity* 11: 15–17.
- [1] **Gerth M**, Geissler A, Bleidorn C (2011) *Wolbachia* infections in bees (Anthophila) and possible implications for DNA barcoding. *Systematics and Biodiversity* 9: 319–327.

PREPRINTS

- [4] Chrostek E, **Gerth M** (2018) Is *Anopheles gambiae* a natural host of *Wolbachia*? *bioRxiv*:491449.
- [3] Glowka E, Filutowska ZK, Dabert M, **Gerth M** (2018) Microbial composition of enigmatic bird parasites: *Wolbachia* and *Spiroplasma* are the most important bacterial associates of quill mites (Acari: Syringophilidae). *bioRxiv*:377218.
- [2] Sontowski R, **Gerth M**, Richter S, Gruppe A, Schlegel M, van Dam N, Bleidorn C (2018) Infection patterns and fitness effects of *Rickettsia* and *Sodalis* symbionts in the green lacewing *Chrysoperla carnea*. *bioRxiv*:327130.

- [1] Dencker T, Leimeister C, **Gerth M**, Bleidorn C, Snir S, Morgenstern B (2018) Multi-SpaM: a Maximum-likelihood approach to phylogeny reconstruction based on multiple spaced-word matches. *arXiv:1803.09222*.

OTHERS

- [8] Siozios S, **Gerth M**, Griffin J, Hurst GDD (2018) Symbiosis: *Wolbachia* host shifts in the fast lane. *Current Biology* 28: R269–R271.
- [7] Bleidorn C, **Gerth M**, Hopfe C, May M, Mayer R, Müller M, Rudolph A, Schaffer S, Wolf R, Bernhard D (2016) Die Stechimmenfauna (Hymenoptera, Aculeata) der Halde Trages bei Leipzig. *Ampulex* 8: 6–15.
- [6] Weniger R, Bernhard D, **Gerth M** (2015) Schwebfliegenfunde (Diptera, Syrphidae) vom Bienitz bei Leipzig mit dem Erstnachweis von *Melangyna pavlovskyi* (Violovitsh, 1956) aus Deutschland. *Entomologische Nachrichten und Berichte* 59: 185–192.
- [5] **Gerth M**, Unrein J, Bleidorn C (2015) Zur Verbreitung von *Rickettsia* in Neuropteren. *DGaaE Nachrichten* 29: 90–92.
- [4] **Gerth M**, Mayer R, Hering L, Wolf R, Schaffer S, Bleidorn C (2012) Zur Stechimmenfauna (Hymenoptera, Aculeata) des Bienitz in Leipzig. *Ampulex* 5: 5–14.
- [3] **Gerth M**, Franke FA, Stolle E, Bleidorn C (2010) Ein neuer Nachweis der Goldwespe *Chrysis leachii* Shuckard (Hymenoptera, Chrysididae) in Thüringen mit Anmerkungen zu potentiellen Wirten. *Ampulex* 2: 61–64.
- [2] Sann M., **Gerth M**, Venne C, Tiedemann R, Bleidorn C (2010) Molekulare und morphologische Untersuchungen zum Status des *Nomada alboguttata* (Apiformes) Artkomplexes. *Ampulex* 2: 65–72.
- [1] Helm C, Sametschek T, **Gerth M** (2010) Nachweis des Edelkrebse *Astacus astacus* (Linnaeus, 1758) (Crustacea: Decapoda, Astacidae) in der Dahleener Heide (Sachsen). *Jahresschrift für Feldherpetologie und Ichtyofaunistik in Sachsen* 12: 89-91.

Scientific community service

REVIEWING

- 39 peer review reports for 24 journals in total, including *The ISME Journal*, *Molecular Ecology*, *BMC Biology*, and *Evolution*
- Reviewed grant proposal for French ANR (Agence nationale de la recherche)

CONFERENCE ORGANIZATION

- Co-organizer of the RES special interest groups meeting “Endosymbiont, Infection, Immunity” (Liverpool, UK, 2017)
- Co-organizer of the DZG graduate group meeting “Beyond tree reconstruction – applications for phylogenetic trees” (Leipzig, DE, 2012)

Conference abstracts

TALKS

2018	Wolbachia conference “Molecular strain characterization in <i>Wolbachia</i> phylogeny and evolutionary ecology”	Salem, MA, USA
2017	Symbiosis in the microbial world: from ecology to genome evolution (workshop of The Company of Biologists) “Experimental evolution of <i>Spiroplasma</i> symbionts in <i>Drosophila</i> ”	Wiston House, UK
2017	DZG conference “Experimental evolution of <i>Spiroplasma</i> symbionts in <i>Drosophila</i> ”	Bielefeld, DE
2017	Genomic Systematics Symposium “Short reads from honey bee (<i>Apis</i> sp.) sequencing projects reveal microbial associate diversity”	Bielefeld, DE
2017	DGaaE conference “On the role and distribution of bacterial symbionts in lacewings (Neuroptera) and allies”	Freising, DE
2016	Microbiology Society conference “Genomic analyses of bee-associated <i>Wolbachia</i> reveal a recent biotin operon transfer and enable the timing of <i>Wolbachia</i> diversification”	Liverpool, UK
2016	Insect Symbiont SIG of the RES “Genomic analyses of bee-associated <i>Wolbachia</i> reveal a recent biotin operon transfer and enable the timing of <i>Wolbachia</i> diversification”	Oxford, UK
2014	Wolbachia conference “Phylogenomic analyses of <i>Wolbachia</i> supergroup relationships”	Innsbruck, AT
2014	GfBS conference “Phylogenomic analyses of <i>Wolbachia</i> supergroup relationships”	Dresden, DE
2012	Hymenopterist’s meeting “Ecological prerequisites for <i>Wolbachia</i> infections in bees (Anthophila)”	Stuttgart, DE
2012	Wolbachia conference “Horizontal <i>Wolbachia</i> transfer among bees (Anthophila) and their kleptoparasites assessed with MLST data”	Oleron, FR
2012	Zoological systematics graduate meeting of the DZG “Exploring horizontal transmission of <i>Wolbachia</i> among bees (Anthophila) and their kleptoparasites”	Leipzig, DE
2012	GfBS conference “Assessing brood parasitism as a potential mechanism for horizontal transmission of <i>Wolbachia</i> endosymbionts in bees”	Bonn, DE
2011	DZG conference “Exploring horizontal <i>Wolbachia</i> transmission among bees (Anthophila) using MLST data”	Saarbrücken, DE
2010	Hymenopterist’s meeting “Untersuchungen zum <i>Nomada alboguttata</i> (Hymenoptera: Apidae) Artkomplex: <i>Wolbachia</i> Infektionen und Implikationen für DNA-Barcoding bei Bienen”	Stuttgart, DE
2010	DZG conference “ <i>Wolbachia</i> infection in <i>Nomada alboguttata</i> (Hymenoptera, Apidae) reveals problems with barcoding approaches in bees”	Hamburg, DE

POSTERS

2017	DGaaE conference “Experimental evolution of <i>Spiroplasma</i> symbionts in <i>Drosophila</i> ”	Freising, DE
2016	Genome Science “Comparative genomics of bee-associated <i>Wolbachia</i> ”	Liverpool, UK
2013	DZG conference “The diversity of bacterial endosymbionts within bees (Anthophila)”	Munich, DE
2012	DZG conference “Patterns of <i>Wolbachia</i> infections in bees (Anthophila)”	Konstanz, DE
2011	DGaaE conference “ <i>Wolbachia</i> infections in bees: implications for the use of mitochondrial markers in molecular taxonomy”	Berlin, DE