

CURRICULUM VITAE

PD DR. MIRJAM KNÖRNSCHILD

Animal Behavior Lab, Free University Berlin, Germany
Smithsonian Tropical Research Institute, Panama



Website: www.mirjam-knoernschild.org

Email: mirjam.knoernschild@gmail.com

PERSONAL STATEMENT

I am a Heisenberg Fellow leading an independent research group at the FU Berlin in Germany and a Research Associate of the Smithsonian Tropical Research Institute in Panama. As a behavioral ecologist, I hold extensive scientific expertise in acoustic communication, cognition, learning and social behavior of mammals, particularly bats. My research projects are highly interdisciplinary, incorporating genetics, neuroethology and biolinguistics. Most of my field work is conducted in the Neotropics and South Africa. I provide empowering, supportive mentorship for students and have substantial experience in teaching zoology, ecology and ethology at the B.Sc. and M.Sc. level.

PERSONAL BACKGROUND

Date of birth: December 4th, 1978

Citizenship: German

ACADEMIC POSITIONS

- 2015 - present: Heisenberg Fellow, Group Leader at the Animal Behavior Lab, Free University Berlin, Germany.
- 2014 - present: Research Associate of the US-American Smithsonian Tropical Research Institute (STRI) in Panama.
- 2014 - 2015: Group Leader at the Institute of Evolutionary Ecology and Conservation Genomics (former Institute of Experimental Ecology), Ulm University, Germany.
- 2012 / 2013: Maternal leave (from November 2012 to December 2013).
- 2009 - 2012: Postdoctoral researcher at the Institute of Experimental Ecology (now Institute of Evolutionary Ecology and Conservation Genomics), Ulm University, Germany.

ACADEMIC AND EDUCATIONAL BACKGROUND

- 2013: Habilitation, *Venia legendi* for Zoology & Ecology at Ulm University, Germany.
Title: Vocal Communication and Social Behavior in Bats.
Mentors: Prof. Dr. Elisabeth Kalko (deceased), Prof. Dr. Manfred Ayasse, Prof. Dr. Harald Wolf.
- 2005 - 2009: Dissertation in Zoology, University of Erlangen-Nuremberg, Germany.
Thesis title: Vocal Repertoire Ontogeny in *Saccopteryx bilineata* - Evidence for Vocal Learning in a Bat.
Advisor: Prof. Dr. Otto von Helversen.
Grade: *summa cum laude* (highest distinction).
- 1999 - 2005: Diploma in Biology, University of Oldenburg, Germany.
Thesis title: Male Territorial Song in the Sac-Winged Bat (*Saccopteryx bilineata*)
Advisors: Prof. Dr. Georg Klump, Prof. Dr. Otto von Helversen.
Grade: 1.0 (highest distinction).
- 1998: Abitur (university entrance qualification), Graf-Münster Gymnasium Bayreuth, Germany.
Grade: 1.0 (highest distinction).

GRANTS

- 2015 - 2018: Phonological Syntax in Bat Vocalizations - A Biolinguistic Approach. Principal Investigator. German Research Foundation (Grant KN 935/4-1).
- 2014 - 2016: Do bats sing in their sleep? Co-Principal Investigator. Baden-Württemberg Foundation, Program for Interdisciplinary Cooperation of Postdoctoral Fellows. In cooperation with Dr. Rauss, Institute for Medical Psychology and Behavioural Neurobiology, University of Tübingen, Germany.
- 2012 - 2014: Evolution and Adaptive Significance of Vocal Learning in Bats. Principal Investigator. Baden-Württemberg Foundation, Elite Program for Postdoctoral Fellows.
- 2009-2011: Vocal Learning as Mechanism for Cultural Transmission - Dialects in Bats. Principal Investigator. University of Ulm, Start-up Grant for Young Post-Docs.

FELLOW- AND SCHOLARSHIPS

- 2015 - present: Heisenberg Fellowship (Communication and Cognition in Bats), German Research Foundation (DFG; KN 935/3-1). 2015 - 2018; extension for two more years after positive evaluation.
- 2005-2008: Scholarship for Dissertation degree, German Merit Foundation (Studienstiftung des Deutschen Volkes).
- 1999-2005: Scholarship for Diploma degree, Bavarian Merit Foundation (Bayerische Hochbegabtenförderung).

AWARDS

- 2015: Walther-Arndt Award (Habilitation Award) from the German Zoological Society (Deutsche Zoologische Gesellschaft, DZG).
- 2011: Affirmative Action for Women Award from Ulm University, Germany.
- 2010: Fritz-Frank-Award (Dissertation Award) from the German Society for Mammalian Biology (Deutsche Gesellschaft für Säugetierkunde).

PUBLICATION LIST

36 articles, 2 reviews and 2 book chapters. **h-Index: 14, i10-Index: 19**

KEY PUBLICATIONS (PEER-REVIEWED)

- Tschapka M, Gonzalez-Terrazas TP, **Knörnschild M** (2015) Nectar uptake in a mammal using a novel pumping tongue mechanism. **Science Advances**, 1: e1500525.
Featured as Nature News (Nature, 25.9.2015) and Science Shot (Science, 25.9.2015)
- Knörnschild M** (2014) Vocal production learning in bats. **Current Opinion in Neurobiology**, 28: 80-85.
- Knörnschild M***, Jung K*, Nagy M, Metz M, Kalko EKV (2012) Bat echolocation calls facilitate social communication. *Joint first authors. **Proceedings of the Royal Society B** 279(1748): 4827-4835.
Featured as Nature Research Highlight (Nature, Vol. 490, p. 147, 11.10.12) and Science Shot (Science, 02.10.12).
- Knörnschild M**, Nagy M, Metz M, Mayer F, von Helversen O (2012) Learned vocal group signatures in the polygynous bat *Saccopteryx bilineata*. **Animal Behaviour** 84(4): 671-679.
- Knörnschild M**, Nagy M, Metz M, Mayer F, von Helversen O (2010) Complex vocal imitation during ontogeny in a bat. **Biology Letters** 6(2): 156-159.
Featured as Nature Research Highlight (Nature, Vol. 461, p. 850, 15.10.09) and covered by the Nature Journal Club (Nature, Vol. 466, p.163, 08.07.10).

ARTICLES (PEER-REVIEWED)

- [36] Eckenweber M, **Knörnschild M** (2016) Responsiveness to conspecific distress calls is influenced by day-roost proximity in bats (*Saccopteryx bilineata*). **Royal Society Open Science**, 3: 160151.
- [35] Rose A, Kolar M, Tschapka M, **Knörnschild M** (2015) Learning where to feed: The use of social information in flower-visiting Pallas' Long-tongued Bats (*Glossophaga soricina*). **Animal Cognition**, 19: 252-261.
- [34] Tschapka M, Gonzalez-Terrazas TP, **Knörnschild M** (2015) Nectar uptake in a mammal using a novel pumping tongue mechanism. **Science Advances**, 1: e1500525.
- [33] Carter G, Schoeppler D, Manthey MK, **Knörnschild M**, Denzinger A (2015) Distress calls of a fast-flying bat (*Molossus molossus*) provoke inspection flights but not mobbing. **PLoS ONE**, 10: e0136146.
- [32] Heim O, Treitler JT, Tschapka M, **Knörnschild M**, Jung K (2015) The importance of landscape elements for bat activity and species richness in agricultural areas. **PLoS ONE**, 10: e0134443.
- [31] **Knörnschild M** (2014) Vocal production learning in bats. **Current Opinion in Neurobiology**, 28: 80-85.
- [30] Mumm CAS, **Knörnschild M** (2014) The vocal repertoire of adult and neonate giant otters (*Pteronura brasiliensis*). **PLoS ONE**, 9: e112562.
- [29] Fernandez AA, Fasel N, **Knörnschild M**, Richner H (2014) When bats are boxing: aggressive behaviour and communication in male Seba's short-tailed fruit bat. **Animal Behaviour**, 98: 149-156.
- [28] Nagy M, **Knörnschild M**, Günther L, Mayer F (2014) Dispersal and mating strategies in the Neotropical Grey sac-winged bat *Balantiopteryx plicata*. **Behavioural Ecology and Sociobiology** 68: 891-901.
- [27] **Knörnschild M**, Feifel M, Kalko EKV (2014) Male courtship displays and vocal communication in the polygynous bat *Carollia perspicillata*. **Behaviour** 151: 781-798.
- [26] Simon R, **Knörnschild M**, Tschapka M, Schneider A, Passauer N, Kalko EKV, von Helversen O (2014) Biosonar resolving power: Echo-acoustic perception of surface structures in the submillimeter range. **Frontiers in Physiology** 5: 64.
- [25] Mumm CAS, Urrutia MC, **Knörnschild M** (2014) Vocal individuality in cohesion calls of giant otters, *Pteronura brasiliensis*. **Animal Behaviour** 88: 243-252.
- [24] Greiner S, Nagy M, Mayer F, **Knörnschild M**, Hofer H, Voigt CC (2014) Sex-biased senescence in a polygynous bat species. **Ethology** 120: 197-205.
- [23] **Knörnschild M**, Feifel M, Kalko EKV (2013) Mother-offspring recognition in the bat *Carollia perspicillata*. **Animal Behaviour** 86: 941-948.
- [22] Corman VM, Rasche A, Diallo TD, Cottontail VM, Stöcker S, de Carvalho Dominguez Souza BF, Corrêa JI, Carneiro AJB, Franke CR, Nagy M, Metz M, **Knörnschild M**, Kalko EKV, Ghanem SJ, Morales KDS, Salsamendi E, Spínola M, Herrler G, Voigt CC, Tschapka M, Drosten C, Drexler JF (2013) Highly diversified coronaviruses in neotropical bats. **Journal of General Virology** 94: 1984-1994.
- [21] Geipel I, Kalko EKV, Wallmeyer K, **Knörnschild M** (2013) Post-weaning maternal food provisioning in a bat with a complex hunting strategy. **Animal Behaviour** 85: 1435-1441.
- [20] Nagy M, Günther L, **Knörnschild M**, Mayer F (2013) Female-biased dispersal in a bat with a female-defence mating strategy. **Molecular Ecology** 22(6): 1733-1745.
- [19] Eckenweber M, **Knörnschild M** (2013) Social influences on territorial signaling in male greater-sac winged bats. **Behavioural Ecology and Sociobiology** 67(4): 639-648.
- [18] **Knörnschild M**, Tschapka M (2012) Predator mobbing behaviour in the greater spear-nosed bat *Phyllostomus hastatus*. **Chiroptera Neotropical** 18(2): 1132-1135.
- [17] **Knörnschild M***, Jung K*, Nagy M, Metz M, Kalko EKV (2012) Bat echolocation calls facilitate social communication. * Joint first authors. **Proceedings of the Royal Society B** 279(1748): 4827-4835.

- [16] Drexler JF, Corman VM, Müller MA, Maganga GD, Vallo P, Binger T, Gloza-Rausch F, Cottontail VM, Rasche A, Yordanov S, Seebens A, **Knörnschild M**, Oppong S, Sarkodie YA, Pongombo C, Lukashev AN, Schmidt-Chanasit J, Stöcker A, Carneiro AJB, Erbar S, Maisner A, Fronhoffs F, Buettner R, Kalko EKV, Kruppa T, Franke CR, Kallies R, Yandoko ERN, Herrler G, Reusken C, Hassanin A, Krüger DH, Matthee S, Ulrich RG, Leroy EM, Drostén C (2012) Bats host major mammalian paramyxoviruses. **Nature Communications** 3: 796.
- [15] Gonzalez-Terrazas TP, Medellín RA, **Knörnschild M**, Tschapka M (2012) Morphological specialization influences nectar extraction efficiency of sympatric nectar-feeding bats. **Journal of Experimental Ecology** 215(22): 3989-3996.
- [14] **Knörnschild M**, Nagy M, Metz M, Mayer F, von Helversen O (2012) Learned vocal group signatures in the polygynous bat *Saccopteryx bilineata*. **Animal Behaviour** 84(4): 671-679.
- [13] Nagy M, **Knörnschild M**, Voigt CC, Mayer F (2012) Male greater sac-winged bats gain direct fitness benefits when roosting in multimale colonies. **Behavioural Ecology** 23(3): 597-606.
- [12] Fulmer A, **Knörnschild M** (2012) Intracolony social distance, signalling modality and association choice in the greater sac-winged bat (*Saccopteryx bilineata*). **Journal of Ethology** 30(1): 117-124.
- [11] **Knörnschild M**, Ueberschär K, Helbig M, Kalko EKV (2011) Sexually selected infanticide in a polygynous bat. **PLoS ONE** 6: e25001.
- [10] **Knörnschild M**, Fulmer A, von Helversen O (2010) Duration of courtship displays corresponds to social status in male sac-winged bats, *Saccopteryx bilineata*. **Canadian Journal of Zoology** 88(6): 589-594.
- [09] **Knörnschild M**, Glöckner V, von Helversen O (2010) The vocal repertoire of two sympatric species of nectar-feeding bats (*Glossophaga soricina*, *G. commissarisii*). **Acta Chiropterologica** 12(1): 205-215.
- [08] Strauss M, von Helversen O, **Knörnschild M** (2010) The ontogeny of courtship behaviors in bat pups (*Saccopteryx bilineata*). **Behaviour** 147(6): 661-676.
- [07] **Knörnschild M**, Nagy M, Metz M, Mayer F, von Helversen O (2010) Complex vocal imitation during ontogeny in a bat. **Biology Letters** 6(2): 156-159.
- [06] **Knörnschild M**, Harview C, Moseley R, von Helversen O (2009) Remaining cryptic during motion – behavioral synchrony in the proboscis bat, *Rhynchonycteris naso*. **Acta Chiropterologica** 11(1): 208-211.
- [05] Behr O, **Knörnschild M**, von Helversen O (2009) Territorial counter-singing in male sac-winged bats (*Saccopteryx bilineata*): low frequency songs trigger a stronger response. **Behavioral Ecology and Sociobiology** 63(3): 433-442.
- [04] Voigt C, Behr O, Caspers B, von Helversen O, **Knörnschild M**, Mayer F, Nagy M (2008) Songs, scents, and senses: Sexual selection in the greater sac-winged bat, *Saccopteryx bilineata*. **Journal of Mammalogy** 89(6): 1401-1410.
- [03] **Knörnschild M**, von Helversen O (2008) Non-mutual vocal mother-pup recognition in the sac-winged bat, *Saccopteryx bilineata*. **Animal Behaviour** 76(3): 1001-1009.
- [02] **Knörnschild M**, von Helversen O, Mayer F (2007) Twin siblings sound alike – isolation call variation in the Noctule bat, *Nyctalus noctula*. **Animal Behaviour** 74(4): 1055-1063.
- [01] **Knörnschild M**, Behr O, von Helversen O (2006) Babbling behavior in the sac-winged bat (*Saccopteryx bilineata*). **Naturwissenschaften** 93(9): 451-455.

REVIEWS (PEER-REVIEWED)

- [2] Smotherman M, **Knörnschild M**, Smarsh G, Bohn KM (2016) The origins and diversity of bat songs. **Journal of Comparative Physiology A** 202(8): 535-554.
- [1] Nyffeler M, **Knörnschild M** (2013) Bat predation by spiders. **PLoS ONE** 8: e58120.

BOOK CHAPTERS (EDITORIAL-REVIEWED)

[2] **Knörnschild M**, Eckenweber M, Fernandez AA, Nagy M (2016) Sexually selected vocalizations of Neotropical bats. In: *Sociality in Bats* (J. Ortega, ed.). Springer Press, NY. Pp. 179-195.

[1] Nagy M, **Knörnschild M** (2016) Sex-biased dispersal and social systems of Neotropical Emballonurids. In: *Sociality in Bats* (J. Ortega, ed.). Springer Press, NY. Pp. 47-63.

COLLABORATIONS

- Genetics: Dr. Martina Nagy, Chair of Sensor Technology, University of Erlangen, Germany.
PD Dr. Frieder Mayer, Leibniz Institute for Evolution and Biodiversity Science (Museum für Naturkunde Berlin), Germany.
- Neuroethology: Prof. Dr. Constance Scharff, Animal Behavior Lab, FU Berlin, Germany.
- Cognitive Ethology: Dr. Karsten Rauss, Institute for Medical Psychology and Behavioural Neurobiology, University of Tübingen, Germany.
Dr. Inga Geipel, Smithsonian Tropical Research Institute (STRI), Panama.
Dr. Melanie Dammhahn, Animal Ecology Lab, University of Potsdam, Germany.
- Behavioral Ecology: apl. Prof. Dr. Marco Tschapka, Institute of Evolutionary Ecology and Conservation Genomics, Ulm University, Germany.
Prof. Dr. Bernal Rodriguez-Herrera, Escuela de Biología, Universidad de Costa Rica (UCR), Costa Rica.
- Sensory Ecology: Dr. Rachel Page, Staff Scientist at the Smithsonian Tropical Research Institute (STRI), Panama.
Dr. Kirsten Jung, Institute of Evolutionary Ecology and Conservation Genomics, Ulm University, Germany.
- Landscape Ecology: Dr. Markus Metz, Applied Ecology Group, Fondazione Edmund Mach (FEM), San Michele all' Adige, Italy.
- Biolinguistics: Prof. Dr. Cedric Boeckx, Catalan Institute for Advanced Studies and Research (ICREA), Universidad de Barcelona, Spain.
- Olfactory Communication: Dr. Barbara Caspers, Department of Animal Behaviour, University of Bielefeld, Germany.
- Emerging Infectious Diseases: Prof. Dr. Christian Drosten and Dr. Victor Corman, Institute of Virology, Bonn University, Germany.

ACADEMIC SERVICES

EDITORIAL ACTIVITY

Associate Editor for Behavioral Ecology and Sociobiology (2016 - present)

Review Editor for Social Evolution, a section of Frontiers in Ecology and Evolution (2016 - present).

JOURNAL REVIEWING

Science Advances, Scientific Reports, Proceedings of the Royal Society B, Biology Letters, Behavioural Ecology, Animal Behaviour, Behavioral Ecology and Sociobiology, Royal Society Open Science, BMC Ecology, Ethology, Animal Cognition, Frontiers in Zoology, Frontiers in Ecology and Evolution, Journal of the Acoustical Society of America, Journal of Mammalogy, Acta Chiropterologica, Acta Theriologica, Annales Zoologici Fennici, and Folia Zoologica.

GRANT REVIEWING

German Research Foundation (DFG), Human Frontier Science Program (HFSP), German Academic Exchange Service (DAAD), Netherlands Organization for Scientific Research (NWO), National Science Centre Poland (NCN).

ADMINISTRATIVE ACTIVITIES

- 2016 - present: Co-spokesperson for the section Behavioral Biology of the German Zoological Society (Deutsche Zoologische Gesellschaft, DZG).
- 2010 - present: Committee member in the German Merit Foundation (Studienstiftung des Deutschen Volkes) for the selection of new fellows.
- 2010 / 2013: Symposium organization for international conferences (16th International Bat Research Conference in Costa Rica and 15th International Bat Research Conference in the Czech Republic).

SCIENTIFIC MEMBERSHIPS

Animal Behavior Society, International Society for Behavioral Ecology, German Society for Ethology, German Society for Zoology, German Society for Mammalian Biology, German Society for Tropical Ecology.

SELECTED INVITED SEMINARS

- 2016: Genes relevant for vocal learning, speech and language: insights from animal models. (together with Constance Scharff). Language in Interaction Consortium, Summer School 'Human Language: From Genes and Brains to Behavior'. Nijmegen, the Netherlands.
- 2015: Cultural transmission of sexually selected signals in bats. Invitation from Prof. Dr. Klaus Reinhold, University of Bielefeld, Germany.
Sexually selected signals in bats - causes and consequences. Invitation from Dr. Annette Denzinger, University of Tübingen, Germany.
- 2014: Social and vocal complexity in bats - a virtuous circle. Invited Talk at the Smithsonian Tropical Research Institute, Tupper Conference Center, Panama.
Social learning of communication and foraging behavior in bats. Invitation from Prof. Dr. Gerhard von der Emde, University of Bonn, Germany.
- 2013: Social communication and vocal learning in the bat *Saccopteryx bilineata*. Invitation from Prof. Dr. Heinz Richner, University of Bern, Switzerland.
- 2012: Bat social interactions. Invitation from the Peruvian Centro de Ecología y Biodiversidad (CEBIO), Centro de Investigación Jenaro Herrera, IIAP Iquitos, Peru.
- 2011: Vocal production learning in bats. Invitation from Prof. Dr. Katharina Förster, University of Tübingen, Germany.
- 2010: Vocal learning in bats – the case study *Saccopteryx bilineata*. Invitation from Prof. Dr. Constanze Scharff, Free University Berlin, Germany.
- 2009: Different forms of vocal learning in bats. Invitation from Prof. Dr. Peter Slater, Behaviour Discussion Group, School of Biology, University St. Andrews, Scotland.

SELECTED CONFERENCE PRESENTATIONS

- 2016: Individual recognition in wild bats - evidence from a playback experiment with a violation-of-expectation paradigm. 109th Annual Meeting of the German Zoological Society (DZG), Kiel, Germany.

- 2015: Acoustically mediated natal dispersal in the polygynous bat *Saccopteryx bilineata*. 4th International Bat Meeting, Berlin, Germany.
- 2014: Receivers matter: Sex-specific responses to alert calls in nectar-feeding bats (*Glossophaga soricina*). 7th European Conference on Behavioural Biology, Prague, Czech Republic.
- 2013: Culturally transmitted dialects in a polygynous bat. 106th Annual Meeting of the German Zoological Society (DZG), Munich, Germany.
- 2012: Distinct regional dialects in a vocal learning bat. 6th European Conference on Behavioural Biology, Essen, Germany.
- 2012: Vocal communication in *Saccopteryx bilineata*. Simposio Peruano de Murciélagos 2012, Lima, Peru. Plenary Speaker.
- 2011: Vocal signatures in *Saccopteryx bilineata* - Insights from a vocal learning bat. XXIII. Meeting of the International Bioacoustics Council (IBAC), La Rochelle, France. Invited Talk.
- 2011: Communication on the wing: vocal signatures in echolocation calls of the greater sac-winged bat. 3rd Symposium Acoustic Communication by Animals (ACA), Cornell University, Ithaca, USA.
- 2010: Learned vocal group signatures in a polygynous bat. 15th International Bat Research Conference (IBRC), Prag, Czech Republic.
- 2009: Vocal learning in a bat (poster). 1st Joint Meeting of the Association for Tropical Biology and Conservation (ATBC) and the Society for Tropical Ecology (GTÖ), Marburg, Germany.
- 2008: Vocal repertoire ontogeny in the bat *Saccopteryx bilineata* – evidence for vocal learning. 2nd Symposium Acoustic Communication by Animals (ACA), Corvallis, USA.
- 2007: Isolation calls and their role during vocal repertoire ontogeny in the greater sac-winged bat, *Saccopteryx bilineata*. 14th International Bat Research Conference (IBRC) and 37th North American Symposium on Bat Research (NASBR), Mérida, Mexiko. Invited Talk.

A complete list of invited seminars and conference presentations can be found on my website (<http://mirjam-knoernschild.org/>).

TEACHING EXPERIENCE

QUALIFICATIONS

- 2009 - 2014: Participation in advanced training seminars in didactics ('Hochschuldidaktik-Zertifikat' Baden-Württemberg; Module 1 & 2 completed).
- 2013: Habilitation, *Venia legendi* for Zoology & Ecology at Ulm University, Germany.

RESEARCH LABS

- 2009 - 2014: Course coordinator and lecturer for **advanced research lab 'Behavioral Ecology' (M.Sc. level)** at Ulm University, Germany.
4 weeks in total (20 full days; 'Blockpraktikum'), annually each winter semester.
- 2010 - 2015: Course coordinator and lecturer for **advanced research lab 'Ecology' (M.Sc. level)** at Ulm University, Germany.
4 weeks in total (20 full days; 'Blockpraktikum'), annually each summer semester.

SEMINARS

- 2010 - 2012: Course coordinator and lecturer for the newly developed short seminar **'Basic Statistics' (B.Sc. level)** at Ulm University, Germany.
1 week in total (3 full days), annually each winter semester.

2010 - 2012: Course coordinator and lecturer for the newly developed short seminar **'Scientific Writing' (B.Sc. level)** at Ulm University, Germany.
1 week in total (3 full days), annually each summer semester.

LECTURES

2011 - 2012: Lecturer for **'General Zoology' (B.Sc. level)** at Ulm University, Germany (teaching substitute after the death of Prof. Dr. Elisabeth Kalko).
2 hours weekly, annually each winter semester.

2012: Lecturer for **'General Ecology' (B.Sc. level)** at Ulm University, Germany (teaching substitute after the death of Prof. Dr. Elisabeth Kalko).
2 hours weekly, summer semester.

FIELD EXCURSIONS

2012: Instructor and lecturer for the field excursion **'Studying Bats' (M.Sc. and Ph.D. level)** in Peru, organized by the Peruvian Centro de Ecología y Biodiversidad.
2 weeks in total (14 full days).

2011: Instructor and lecturer for the field excursion **'Ecology of the Mediterranean area' (M.Sc. level)** in Croatia; offered by Ulm University, Germany.
4 weeks in total (20 full days; Blockpraktikum'). 2 weeks in Croatia (field instructor for taxonomy, ecology and diversity of Mediterranean animals), 2 weeks in Germany (lectures on organismal biology and general ecology).

THESIS SUPERVISION

2013 - present: **Supervision of 4 Ph.D. theses, 2 M.Sc. theses, 3 M.Ed. theses, and 4 B.Sc. theses** at Ulm University and Free University Berlin, Germany.

PH.D. THESIS SUPERVISION: Andreas Rose: Social learning and cultural diffusion of foraging behavior in the nectivorous bat *Glossophaga soricina* (ongoing)
Maria Eckenweber: Regional differences in courtship behavior of male sac-winged bats, *Saccopteryx bilineata* (ongoing)
Ahana Fernandez: Babbling behavior and syntax acquisition in the vocal learning bat *Saccopteryx bilineata* (ongoing)
Christina Mumm: Vocal complexity in giant otters, *Pteronura brasiliensis*

M.SC. THESIS SUPERVISION: Andreas Rose: Use of social information in flower-visiting Pallas' long-tongued bats, *Glossophaga soricina*

Maria Eckenweber: Territorial counter-singing in male sac-winged bats, *Saccopteryx bilineata*

M.ED. THESIS SUPERVISION: Franziska Harlacher: Female influence on male courtship behavior in sac-winged bats, *Saccopteryx bilineata* (ongoing)

Patrick Steidl: Male song as acoustic beacon for dispersing female bats, *Saccopteryx bilineata*

Simone Blüml: Influence of male song on day-roost choice of female bats, *Saccopteryx bilineata*

B.SC. THESIS SUPERVISION: Nadja Sick: Influence of resident male cattas' (*Lemur catta*) social status on their interactions with immigrating males

David Hörmann: Visual learning in Pallas' long-tongued bats, *Glossophaga soricina*
Natascha Schmidt: Syntactical structures in begging calls of juvenile giant otters, *Pteronura brasiliensis*

Miriam Kolar: Influence of spatial memory on socially learned foraging behavior of the nectarivorous bat *Glossophaga soricina*

2008 - 2012: **Co-supervision of 2 M.Sc. theses, 3 M.Ed. theses, and 7 B.Sc. theses** at Ulm University and University of Erlangen-Nuremberg, Germany.

M.Sc. THESIS
Co-SUPERVISION: Julia Speidel: Agonistic male-male interactions in Pallas' long-tongued bats, *Glossophaga soricina*

Christina Urrutia: Vocal individuality in giant otters, *Pteronura brasiliensis*

M.ED. THESIS
Co-SUPERVISION: Kyra Vittinghoff: Influence of group composition on the courtship behavior of male sac-winged bats, *Saccopteryx bilineata*

Manuela Geiselhardt: Acoustic communication in the proboscis bat, *Rhynchonycteris naso*

Christian Schmidt: Social behavior and vocalizations in the Neotropical tent-making bat *Ectophylla alba*

B.Sc. THESIS
Co-SUPERVISION: Marion Feifel: Mother-offspring communication in Seba's short-tailed bats, *Carollia perspicillata*

Anja Dünnebeil: Social aggregations in gray sac-winged bats, *Balantiopteryx plicata*

Manuela Geiselhardt: Individual signatures in social vocalizations of proboscis bats, *Rhynchonycteris naso*

Michael Hoffmann: Social behavior of chestnut sac-winged bats, *Cormura brevirostris*

Simone Pechmann: Social behavior and male-male interactions in Seba's short-tailed bats, *Carollia perspicillata*

Christina Behler: Playback experiments on the social function of alert calls in Pallas' long-tongued bats, *Glossophaga soricina*

Stefanie Aichele: Social structure and male courtship in Seba's short-tailed bats, *Carollia perspicillata*

MENTORING

2015 - present: Mentor for two students at the University of Potsdam, Germany (Mentoring Plus Program, Potsdam Graduate School).

2006 - 2008: Mentor in the REU Program (Research Experience for Undergraduates) of the National Science Foundation (NSF, USA) in Costa Rica.

9 weeks in total, annually each summer semester. Supervision of one undergraduate research project in Costa Rica per semester.

Mia Strauss: Ontogeny of courtship behavior in bat pups, *Saccopteryx bilineata*.

Christina Harview: Day-roost activity and cryptic behavior in the proboscis bat, *Rhynchonycteris naso*.

Rachel Moseley: Day-roost activity in Neotropical Emballonurid bats.

SELECTED MEDIA COVERAGE

Science Advances, AAAS: Deep-dipping, grooved tongue helps bats feast on nectar (25.09.2015).

Science Shot, AAAS: Bat's tongue baffles researchers (25.09.2015).

Nature News: Bat drinks using 'tongue-pump' trick (25.09.2015).

Der Spiegel: Nachtjägers Liebeslied (Vol. 38, pp. 128-130, 2014).

Science Feature, AAAS: When the bat sings (Vol. 344, pp. 1334-1337, 2014).

Nature Research Highlights: Echolocation for communication (Vol. 490, p. 147, 2012).
Science Shots, AAAS: A bat's sexy sound (02.10.2012).
SWR TV Interview: European Bat Night (26.08.2011).
Nature Journal Club: Breakthroughs in understanding vocal learning (Vol. 466, p.163, 2010).
Nature Research Highlights: Copy Bat (Vol. 461, p. 850, 2009).
Deutschlandradio Interview: Forschung Aktuell: Das Babbeln der Fledermäuse (23.12.2009).
National Geographic News: Male bats blast rivals with deep calls (14.12.2008).
Natural History Magazine: Baby Bat Chat (Samplings, September 2006).
National Geographic News: Baby bats babble like human infants (14.08.2006).
New Scientist: Baby bats babble too (29.07.2006).