

# Vera Warmuth

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## EDUCATION

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- April 2012      **PhD: University of Cambridge**  
Thesis: *On the Origin and Spread of Horse Domestication*  
(supervisors: Dr. Andrea Manica; Dr. Robert Asher; Prof. William Amos)
- Jan 2007      **Diploma in Biology: Universities of Cologne (2000-2002) and Bonn (2003-2007)**  
Thesis: *The Effect of Tabanids on the Choice of Habitat by Przewalski's Horses in the Hortobágy National Park, Hungary* (supervisors Prof. Gabriele Uhl & Dr. Lydia Kolter)

## RESEARCH EXPERIENCE

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- April 2019 – current      **Assistant Professor: Ludwig-Maximilians-Universität München**  
Ecoimmunology of migrating bats using genomic, transcriptomic, and immunological data
- May 2017 – April 2019      **Postdoctoral Researcher: Ludwig-Maximilians-Universität München**  
Ecoimmunology of crows using genomic and transcriptomic data  
Retroviral abundance and activity using high-throughput DNA and RNA sequence data
- Apr 2014 – May 2017      **Postdoctoral Researcher: Uppsala University, Evolutionary Biology Centre**  
Avian evolutionary and demographic history using genomic and historic climatic data
- Apr 2012 – Dec 2013      **Postdoctoral Researcher: University College London**  
Human demographic history using genomic (autosomal and mitochondrial) data

## TEACHING & STUDENT SUPERVISION

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### Teaching Assistant

- taught several lectures of the Biology I curriculum (LMU, Munich)
- planned and led practicals accompanying Biology I lectures (LMU, Munich)
- worked as tutor of 3rd year undergraduate students in Conservation Science (University of Cambridge, UK)
- supervised practical laboratory classes for Part I Zoology students (University of Cambridge, UK)
- planned and taught a genetics workshop for archaeology students as part of a summer school in Feltre, Italy

### Student supervision

- I have mentored scientific projects of several undergraduate students
  - Burcin Yildirim, masters project (LMU, Munich)
  - Rasha Shraim, masters project (LMU, Munich)
  - Marius Somveille, masters project (University of Cambridge, UK)

## SCHOLARSHIPS & FUNDING

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2018	<b>LMU Excellent Junior Researcher Fund (€ 45,000)</b>
2017	Formas Grant for <b>Future Research Leaders</b> (Swedish Research Council) (~ € 300,000) declined due to family reasons
2011	Cambridge Philosophical Society Research Studentship
2007-2010	BBSRC PhD Studentship – main PhD funding; <b>1 of 3 recipients (~180 applicants)</b>
2007-2010	Balfour Fund – additional PhD funding (£ 5000 per annum)
2007-2010	Cambridge European Trust – additional PhD funding (£ 4000 per annum)
2007	German Academic Exchange Service (DAAD) – additional PhD funding (€ 15,249)
2008	McDonald fieldwork fund - Fieldwork for PhD thesis (£ 6000)
2006	German Academic Exchange Service (DAAD) - Fieldwork for Diploma thesis (€ 1725)

## INTERNATIONAL PRESENTATIONS & INVITED TALKS

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- 2019 University of Durango, Mexico (Invited seminar)
- 2019 University of Vilnius, Lithuania (Invited talk)
- 2019 University of Leicester, UK (Invited talk)
- 2017 Population Genetics Group meeting, Cambridge, UK (talk)
- 2015 Population Genetics Group meeting, Sheffield, UK (poster presented)
- 2014 Population Genetics Group meeting, Bath, UK (poster presented)
- 2013 The 11th International Mammalogical Congress, Belfast (talk)
- 2012 “Horses from the Middle East” exhibition at the British Museum, London (Invited talk)
- 2011 European Society for Evolutionary Biology, Tübingen, Germany (talk)
- 2011 Population Genetics Group meeting, Hull, UK (talk)
- 2010 Population Genetics Group meeting, Liverpool, UK (talk)

## SKILLS & TRAINING

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<b>Training</b>	- Bioinformatics for Adaptation Genomics (Winter School, ETH Zurich, Switzerland, 2015) - Python 3 Introduction (5-day course, Cambridge University, UK, 2013) - Computing for Data Analysis using R (2-week online course, 2012) - Solving biological problems in R (5-day course, Cambridge University, UK, 2010)
<b>Management</b>	Day-to-day running of DNA lab (2008-2009)
<b>Languages</b>	Native German, fluent English, intermediate Hungarian, basic Swedish

## ADDITIONAL PROFESSIONAL EXPERIENCE

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Apr 2012 – Jul 2012	<b>Associate of the Higher Education Academy HEA (UK)</b> Development and implementation of online statistical exercises for students reading Mathematical Biology at Cambridge University
2004	<b>Study abroad - University of Queensland (Australia)</b> Awarded a <b>Commendation for High Achievement</b>

## PUBLICATIONS

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I have published in respected international journals, including *Science*, *Nature* and *PNAS*, and my work has been extensively covered in the international press, including the *BBC*, *Forbes* and *Der Spiegel*. I have been cited over 950 times. Citations from Google Scholar (17<sup>th</sup> September 2019) are listed in brackets.

- Weissensteiner MH, Bunikis I, Catalán A, ..., **Warmuth VM**, Wolf BW (2019) The population genomics of structural variation in a songbird genus. submitted to *Science* (6.11.2019)
- **Warmuth VM** & Ellegren H (2019) Genotype-free estimation of allele frequencies reduces bias and improves demographic inference from RADSeq data. *Molecular Ecology Resources*. doi: 10.1111/1755-0998.12990 [5]
- Schweizer M\*, **Warmuth VM\***, et al (2019) Genome-wide evidence supports mitochondrial relationships and pervasive parallel phenotypic evolution in open-habitat chats. *Molecular Phylogenetics and Evolution* 139, 106568  
\* equal contribution
- Schweizer M\*, **Warmuth VM\***, Kakhki N, et al. (2019) Parallel plumage colour evolution and introgressive hybridization in wheatears. *Journal of Evolutionary Biology* 32: 100-110 [4]  
\* equal contribution
- Smeds L, **Warmuth VM**, Bolivar P et al. (2015) Evolutionary analysis of the female-specific avian W chromosome. *Nature Communications* 6: 1-10 [54]
- Raghavan M, Steinrücken M, Harris K, ..., **Warmuth VM**, et al. (2015) Genomic evidence for the Pleistocene and recent population history of Native Americans. *Science* 349: 841-851 [270]
- Rieux A, Eriksson A, Li Mingkun, ..., **Warmuth VM**, et al (2014) Improved calibration of the human mitochondrial clock using ancient genomes. *Molecular Biology and Evolution* 31: 2780-2792 [66]
- Rasmussen M, Anzick SL, Waters MR, ... **Warmuth VM**, et al. (2014) The genome of a Late Pleistocene human from a Clovis burial site in western Montana. *Nature* 506: 225-229 [347]
- **Warmuth VM**, Manica A, Eriksson A, et al. (2013) Ancient trade routes shaped the genetic structure of horses in eastern Eurasia. *Molecular Ecology* 22, 5340–5351 [18]
- Pointer M, Kamilar J, **Warmuth VM**, et al. (2012) *RUNX2* tandem repeats and the evolution of facial length in mammals. *BMC Evolutionary Biology* 12: 1-11 [31]
- **Warmuth VM**, Eriksson A, Bower M, et al. (2012) Reconstructing the origin and spread of horse domestication in the Eurasian steppes. *Proceedings of the National Academy of Sciences of the USA* 109: 8202-8206 [130]
- **Warmuth VM**, Manica A, Eriksson A, et al. (2012) Autosomal genetic diversity in non-breed horses from eastern Eurasia provides insights into historical population movements. *Animal Genetics* 44: 53-61 [14]
- **Warmuth VM**, Eriksson A, Bower M, et al. (2011) European domestic horses originated in two Holocene refugia. *PLoS ONE* 6 (3): e18194 [54]