

# CURRICULUM VITAE

## Dr. Alexandra Weyrich

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**Date of birth:** March 20<sup>th</sup>, 1979

**Nationality:** German

**Gender:** Female

**Current address:** Leibniz Institute for Zoo and Wildlife Research (IZW), Department of Evolutionary Genetics, Alfred-Kowalke-Str. 17, 10315 Berlin, Germany. E-Mail: [weyrich@izw-berlin.de](mailto:weyrich@izw-berlin.de), Tel: +49 30 5168 313



## Employment

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- Since 2018 Team Leader of “Wildlife Epigenetics” group at the Dept. of Evolutionary Genetics, <http://www.izw-berlin.de/weyrich-alexandra.html>
- Since 2015 Postdoctoral Fellow and Head of Epigenetic laboratory, Dept. of Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW), Epigenetic effects and gene expression in Wildlife
- 2011 - 2014 Postdoctoral Fellow and Head of Epigenetic laboratory, Dept. of Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW), Funding SAW Paternal epigenetic effects in Wild guinea pig
- 2010 - 2011 Guest Scientist and Lab Assistant, Breeding Biology and Molecular Genetics, Dept. for Crop and Animal Sciences, Humboldt-University Berlin, Germany, Funding: German Science Foundation (DFG) Glycogen, lactate and candidate gene expression studies of diverse muscles of *Mus musculus*
- 2008 - 2009 Postdoctoral Fellow, Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW); Funding: Federal Ministry of Education and Research (BMBF), Immune gene expression in Pallid Atlantic Forest Rat (*Delomys sublineatus*)
- 2007 - 2008 Postdoctoral Fellow, Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW), Berlin, Germany; Funding: German Science Foundation (DFG), Seasonal gene expression changes of the roe deer (*Capreolus capreolus*)

## Higher Education

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- 2004 – 2007 Ph.D., Johannes Gutenberg University Mainz, processed at the Chinese Academy of Biological Sciences, Shanghai, China, Funding: Max Planck Scholarship, DNA methylation and histone modifications in the spermatogenesis of the fruit fly (*Drosophila*)
- 2002 - 2003 Diploma Thesis, Johannes Gutenberg University Mainz, Germany, processed at the Chinese Academy of Biological Sciences, Shanghai, China, Funding: Max Planck Scholarship, Expression of mammalian methylases in the male germ line of the fruit fly (*Drosophila melanogaster*)

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1998 - 2003      Diploma studies in Biology, Johannes Gutenberg University Mainz, Germany

### **Editorial and Scientific Advisor Activities**

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Editorial Board, Trends in Animal & Veterinary Sciences (since 2011)

Commission member, Master of Science defense, Martina Schneemann 2017

Commission member, PhD dissertation defense, Humboldt-Universität Berlin, Jens Assmus, January 2013 and Sebastian Heise, 2013

Reviewer for Journal of Epigenomics, BMC Genomics, Human Frontier Science Program (HFSP), Journal of Applied Ichthyology

Reviewer for the funding agency Human Frontier Science Program (HSFP), Swiss National Science Foundation (SNSF), Graduate Woman in Science Fellowship Program (GWIS)

2018      Co-Supervisor PhD thesis, Enas Al-khlifeh, Institute of Life Science, Humboldt University Berlin and Leibniz Institute for Zoo and Wildlife Research, (Prof. Emanuel Heitlinger, Dr. Gudrun Wibbelt) Topic: "Infection and Reproduction Dynamics of Laboratory and Wild- derived Isolates of *Eimeria* spp.; their Pathology and Immune Reactions Induced in Mice"

2018      me-Convention, Stockholm, Sweden, invited presentation, "Epigenetics – Treat yourself well"

2018      Translation of Epigenetics Comic into French, Spanish

2018      Science Talk, Garbicz Festival, "Madame Epi and the Genetics"

2018      Supervisor of Master thesis, Jennifer Hoos, Master of Science medizinischen Biotechnologie an der Technischen Universität Berlin Institut für Biotechnologie, "Genvorhersage von *Cavia aperea* mittels RNA-Seq Daten"

2017      Invention: "Novel method for DNA-methylation analysis"; inventors: Alexandra Weyrich, IZW and Yoav Soen, Weizmann Institute of Science

2017      Practical course Master of Sciences Ecology, Evolution und Conservation, Potsdam University/IZW, WS 2016/17; Lecture on epigenetics and project development (4 hours)

2016      Science Comic: Epigenetics – Bridge between genome and environment, Alexandra Weyrich, Olaf Nowacki, Annette Köhn, funding: BMBF, publisher: Jaja-Verlag

2016      RBB Kulturradio – Interview: What is epigenetics and why is it important?

2016      Supervisor of Bachelor thesis, Selma Yasir, Potsdam University, "Paternally induced gene expression changes in the offspring of Wild Guinea Pigs (*Cavia aperea*)"

2016-2017      Supervisor of Master thesis, Martina Schneemann, Potsdam University; "Paternally induced gene expression changes in the offspring of Wild

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- Guinea Pigs (*Cavia aperea*) subjected to nutrition changes – implications for vegetation changes due to climate change”
- 2011-2016 Girlz Day and the Long Night of Sciences are yearly occasions during which I educate the public on how to isolate DNA using common reagents
- 2015, 2016 Practical Labor Course, Master of Sciences Molecular Ecology, Evolution and Conservation, Potsdam University, WS 2015/16 (5 days)
- 2014-2015 Supervisor of Master thesis, Stephanie Benz, University of Central Lancashire- School of Forensic and investigative Science “Paternally induced gene expression changes in the offspring of Wild Guinea Pigs (*Cavia aperea*) subjected to heat – implications for climate change”)
- 2011-2012 Supervisor of Bachelor thesis of Tino Schüllermann; Bioinformatics, Freie Universität Berlin; “Creating a reference sequence and annotation file for the wild Guinea pig to find potential methylation sites”)
- 2008 Practical Labor Course, Evolutionary Genetics, Potsdam University
- 2004 Assistance in EMBO-Workshop on proteomics and human diseases- China
- 2002-2003 Tutor in Plant Physiology, Scientific assistant of Plant Physiology, practical work and colloquium, Johannes Gutenberg University of Mainz

### Scholarships and Awards

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- 2016, 2018 Open Access Publication Fund of the Leibniz Association
- 2016 Travel grants two COST Travel Grants, The European Cooperation of Science and Technology (COST) financed my travels to two EpiConcept conferences to Velingrad, Bulgaria and Giardinin Naxos, Sicily, Italy
- 2014-2015 Fellowship, Leibniz-Mentoring Program - Women in Leadership positions
- 2002-2007 Max Planck Scholarship in combination with Chinese Academy for Biological Sciences for Diploma and PhD Thesis

### Project fund raising

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- 2011-2013 Leibniz Competitive Fund (SAW): **Paternal Epigenetic Effects in Male Wild guinea pig** (SAW-2011-IZW-2) (Partner, 1.2 Mio €)
- 2018 – 2022 Leibniz Association SAW Project; **Title: Epigenetic stability and plasticity of social environmental effects**, (SAW-2018-IZW-3-EpiRank); PI, € 1 Mio.
- 2018 – 2019 **ESEB Outreach grant**, Translation of Science Comic, Epigenetics – Bridge between genome and environment, Alexandra Weyrich, Olaf Nowacki, Annette Köhn; PI, € 1.5K
- 2019 Morris Animal Foundation, submitted
- 2019 ESEB Meeting proposal, submitted

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### Peer-reviewed publications

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- Somerville V, Schwaiger M, Hirsch PE, Walser J-C, Bussmann K, Gebhardt I C, **Weyrich A**, Burkhardt-Holm P, Adrian-Kalchhauser I (2019) DNA methylation patterns in the round goby hypothalamus support an on-the-spot decision scenario for territorial behaviour, *Genes - Special Issue on Epigenetics and Adaptation* (invited), accepted
- Weyrich A**, Lenz D and Fickel J (2018) Environmental change-dependent transgenerational epigenetic response. *Genes - Special Issue on Epigenetics and Adaptation*, doi: 10.3390/genes10010004 (invited)
- Weyrich A**, Jeschek M, Schrapers KT, Lenz D, Chung TH, Rübensam K, Yasar S, Schneemann M, Ortmann S, Jewgenow K & Fickel J (2018). Diet changes alter paternally inherited epigenetic pattern in male Wild guinea pigs. *Environmental epigenetics*, 4(2), dvy011 (invited)
- Weyrich A**, Benz S, Karl S, Jeschek M, Jewgenow K, Fickel J (2016) Paternal heat exposure causes DNA methylation and gene expression changes of *Stat3* in Wild guinea pig sons. *Ecology and Evolution* doi: 10.1002/ece3.1993
- Weyrich A**, Lenz D, Jeschek M, Chung TH, Rübensam K, Göritz K, Jewgenow, K, Fickel J (2016) Paternal intergenerational epigenetic response to heat exposure in male Wild guinea. *Molecular Ecology – Special Issue on Epigenetic Studies in Ecology and Evolution* doi: 10.1111/mec.13494 (invited)
- Weyrich A**, Schüllermann T, Heeger F, Jeschek M, Mazzoni CJ, Chen W, Schumann K, Fickel J (2014) Whole genome sequencing and methylome analysis of the wild guinea pig, *BMC Genomics*. 2014, 15:1036; doi: 10.1186/1471-2164-15-1036
- Hennig W and **Weyrich A** (2013) Histone Modifications in the Male Germ Line of *Drosophila*; *BMC Developmental Biology*; 13:7. doi: 10.1186/1471-213X-13-7
- Kärst S, Strucken EM, Schmitt AO, **Weyrich A**, de Villena FPM, Hyuna Yang, Brockmann GA (2013) Effect of the myostatin locus on muscle mass and intramuscular fat content in a cross between mouse lines selected for hypermuscularity; 16;14(1):16; *BMC Genomics* doi.org/10.1186/1471-2164-14-16
- Weyrich A** (2012) Preparation of genomic DNA from mammalian sperm. *Current Protocols of Molecular Biology*, Chapter: Unit 2.12.1-3, April 2012; Taylor G (ed), Wiley-Blackwell, Pagosa Springs, USA, doi.org/10.1002/0471142727.mb0213s98
- Fickel J and **Weyrich A**, Female mate choice in rodents, in: Kaoru Hashimoto, From gene to animal behaviour, Springer-Verlag (Japan), Sep 2010, Chap 4(19), ISBN 978-4-431-53892-9
- Weyrich A**, Mahr JA, Jauernig O, Göritz F, Fritzenkötter A, Blottner S, Jörns Fickel (2010), Seasonal Changes of Gene Expression in Roe Deer (*Capreolus capreolus*) Testis Measured by Expression Microarray Analysis; *Trends in Animal and Veterinary Sciences Journal* 2010 1(2):5-20
- Weyrich A**, Axtner J, Sommer S (2010) Selection and validation of reference genes for real-time RTPCR studies in the non-model species *Delomys sublineatus*, an Brazilian rodent. *Biochemistry and Biophysical Research Communications* 392:145-149. doi: 10.1016/j.bbrc.2009.12.173

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**Weyrich A**, Tang X, Xu G, Schrattenholz A, Hunzinger C, Hennig W (2008) Mammalian DNMTs in the male germ line DNA of *Drosophila*. *Biochemistry and Cell Biology* 2008 Oct;86(5):380-5. doi: 10.1139/o08-096