Dr. Alexandra Weyrich

Date of birth: March 20th, 1979
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Current address: Leibniz Institute for Zoo and Wildlife Research (IZW), Dept. Evolutionary Genetics, Alfred-Kowalke-Str. 17, 10315 Berlin, Germany
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Employment

Since 2018	**Team Leader** of the group **"Wildlife Epigenetics"** at the Dept. of Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW)
Since 2015	**Scientist** 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	**Post-doctoral 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*"**
2007 - 2009	**Post-doctoral fellow**, Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW); **"Immune gene expression in Pallid Atlantic Forest Rat (Delomys sublineatus)"** (Funding: BMBF); *"Seasonal gene expression changes of the roe deer (Capreolus capreolus)" (Funding: DFG)*

Higher Education

2004 – 2007	**Doctor rerum naturalium**, Johannes Gutenberg University Mainz, processed at the Chinese Academy of Biological Sciences, Shanghai, China, Funding: Max Planck Scholarship, Dissertation topic: **"DNA methylation and histone modifications in the spermatogenesis of the fruit fly (*Drosophila*)"**
2002 - 2003	**Diploma**, Johannes Gutenberg University Mainz, Germany, processed at the Chinese Academy of Biological Sciences, Shanghai, China, Funding: Max Planck Scholarship, Thesis topic: **"Expression of mammalian methylases in the male germ line of the fruit fly (*Drosophila melanogaster*)"**
1998 - 2003	**Diploma student** in Biology, Johannes Gutenberg University Mainz, Germany

Editorial and Scientific Advisor Activities

Reviewer for Journal of Epigenomics, Nature Communications, Molecular Ecology, 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)

Commission member in defenses to obtain doctoral and master degree at Humboldt-Universität zu Berlin and University of Potsdam

Teaching and Supervision

Since 2008	**Lecturer of practical master course**, faculty of Molecular Ecology, Evolution and Conservation, Potsdam University, WS (5 days)
2018	**Co-Supervisor PhD thesis**, Humboldt University Berlin and Leibniz Institute for Zoo and Wildlife Research
Since 2014	**Supervisor Master Thesis in Wildlife Epigenetics (6)**, of Students graduating at Potsdam University, Unversität Freiburg, Technical University of Berlin, University of Central Lancashire- School of Forensic and investigative Science
Since 2011	**Supervisor Bachelor thesis in Wildlife Epigenetics (3),** of Students graduating at Freie Universität Berlin, Potsdam University
2004	**Assistance in EMBO-Workshop**, in Wuhan, China, Topic: Proteomics and human diseases
2002-2003	**Tutor in Plant Physiology**, Scientific assistant of Plant Physiology, practical work and colloquium, Johannes Gutenberg University of Mainz

Outreach

2020-2022	**Epigenetic exhibition** at Zoo Rostock Zoo **"Epigeneum"** (https://www.zoo-rostock.de/forschen-entdecken/epigeneum.html)
2018-2019	**Translation of Epigenetics Comic** into **French, Spanish, Chinese**; funded by ESEB Outreach grant
2018	**me-Convention**, Stockholm, Sweden, invited presentation, **"Epigenetics – Treat yourself well"**
2018	**Public presentation**, Garbicz Festival, invited presentation on topic: **"Madame Epi and the Genetics"**
2016	**Science Comic: Epigenetics – Bridge between genome and environment**, Weyrich A, Nowacki O, Köhn A, funding: BMBF, publisher: JaJa-Verlag
2016	**RBB Kulturradio – Interview**: What is epigenetics and why is it important?
2011-2019	**Girlz Day** and the **Long Night of Sciences**

Scholarships and Awards

2020	**DEAL Open Access Publication Fund**
2016, 2018	**Leibniz Open Access Publication Fund** of the Leibniz Association
2016	**COST Travel Grants (2x),** European Cooperation of Science and Technology (COST), financed two travels to EpiConcept conferences, the 1st in Velingrad, Bulgaria and the 2nd in Giardini Naxos, Sicily, Italy
2014-2015	**Fellowship for Leibniz-Mentoring Program** - Women in Leadership positions
2002-2007	**Max Planck Scholarship** at the Chinese Academy for Biological Sciences for Diploma and PhD Thesis
2020	Nomination for **AcademiaNet – Expert Database of Outstanding Women Academics**

Grants and fund raising

2011-2013	Leibniz Competitive Fund (SAW): **Paternal Epigenetic Effects in Male Wild guinea pig** (SAW-2011-IZW-2), Partner, € 1.2M
2018–2022	Leibniz Association SAW Project; **Title: Epigenetic stability and plasticity of social environmental effects**, (SAW-2018-IZW-3-EpiRank); PI, € 966K.
2018–2019	**ESEB Outreach grant**, Translation of Science Comic, Epigenetics – Bridge between genome and environment, Weyrich A, Nowacki O, Köhn A; PI, € 1.5K
2020	iDiv network proposal **Ecology, Evolution and Epigenetics**, pending

Peer-reviewed publications

Westbury MV, Le Duc D, Duchêne DA, Krishnan A, Prost S, Rutschmann S, Grau JH, Dalen L, **Weyrich A**, Norén K, Werdelin L, Dalerum F, Schöneberg T, Hofreiter M (2020) Ecological specialisation and evolutionary reticulation in extant Hyaenidae, in review

Li K#, Zhang S#, Song X#, **Weyrich A**#, Wang Y, Liu X, Wan N, lovy M, Cui H, Frenkel V, Titievsky A, Panov J, Brodsky L, Nevo E (2020) Genome evolution of blind subterranean mole rats: Adaptive peripatric *versus* sympatric speciation, https://doi.org/10.1073/pnas.2018123117 (#shared first author)

Wahedi A, Günther A, **Weyrich A,** Sondheimer N (2020) The mitochondrial genome of *Cavia aperea,* Mitochondrial DNA Part B: Resources, 5:3, 2147-2148, DOI: 10.1080/23802359.2020.1768918

Weyrich A, Yasar S, Lenz D and Fickel J (2020) Tissue-specific epigenetic inheritance after paternal heat exposure in male Wild guinea pigs, invited to special issue in Mammalian Genome, Springer, https://rdcu.be/b3ytT

Guerrero TP, Fickel J, Benhaiem S, **Weyrich A** (2020) Epigenomics and gene regulation in mammalian social systems. Invited to special issue on "Social behavior and evolution in the omics era" in *Current Zoology,* https://doi.org/10.1093/cz/zoaa005

Al Klifeh E, Balard A, Jarquín-Diaz VH, **Weyrich A,** Wibbelt G, Heitlinger E (2019) Eimeria falciformis BayerHaberkorn1970 and novel wild derived isolates from house mice: differences in parasite lifecycle, pathogenicity and host immune reactions, BioRxiv, Preprint

Somerville V, Schwaiger M, Hirsch PE, Walser JC, Bussmann K, **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 behavior. Invited to special issue on "Epigenetics and Adaptation" in *Genes 10*(3), 219

Weyrich A, Lenz D and Fickel J (2019) Environmental change-dependent transgenerational epigenetic response. Invited to special issue on "Epigenetics and Adaptation" in *Genes 10*(1), 4, doi: 10.3390/genes10010004

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. Invited to *Environmental epigenetics*, *4*(2), dvy011

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. Invited to special issue on "Epigenetic Studies in Ecology and Evolution" in *Molecular Ecology*, doi: 10.1111/mec.13494

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* 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, *BMC Genomics* 16;14(1):16, doi.org/10.1186/1471-2164-*14-16*

Weyrich A, Preparation of Genomic DNA from Mammalian Sperm. Curr Protoc Mol Biol. 2012; 2:2.13.1-3. doi: 10.1002/0471142727.mb0213s98

Fickel J and **Weyrich A** (2010) Female mate choice in rodents, in: Kaoru Hashimoto, From gene to animal behaviour, *Springer-Verlag* (Japan) 4(19), ISBN 978-4-431-53892-9

Weyrich A, Axtner J, Sommer S (2010) Selection and validation of reference genes for real-time RT-PCR 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

Weyrich A, Mahr JA, Jauernig O, Göritz F, Fritzenkötter A, Blottner S, Fickel J (2010), Seasonal changes of gene expression in roe deer (*Capreolus capreolus*) testis measured by expression microarray analysis, *Trends in Animal & Veterinary Sciences Journal* 1(2):49-64

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* 86(5):380-5, doi: 10.1139/o08-096