- CURRICULUM VITAE –

Dr. Alexandra Weyrich

Date of birth: March 20th, 1979
Nationality: German
Gender: Female
Work address: Leibniz Institute for Zoo and Wildlife Research (IZW), Dept. Evolutionary Genetics, Alfred-Kowalke-Straße 17, 10315 Berlin, Germany
Private address: Großstraße 8, 12459 Berlin, Germany
Telefon Number: 0049 (0) 305168 - 334
E-Mail: weyrich@izw-berlin.de
Webpage: http://www.izw-berlin.de/de/alexandra-weyrich-de.html
Research Gate: https://www.researchgate.net/profile/AlexandraWeyrich
AcademiaNet: https://www.academia-net.org/profil/dr-alexandra-weyrich

- SCIENTIFIC CAREER -

Since 2024	**Staff Scientist, Group Leader** of the group **"Wildlife Epigenetics"**, Dept. Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW)
2022 – 2024	**Principle investigator "Inter-species Epigenetics (sInSpEc)",** German Center of integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig, Funding: DFG
2018 – 2022	**Principle investigator, SAW EpiRank project "Epigenetic stability and plasticity of social environmental effects"**, Dept. Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW), Funding: Leibniz Competitive Fund
Since 2018	**Group Leader** of the group **"Wildlife Epigenetics"**, Dept. Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW)
Since 2015	**Scientist** and **head of Epigenetic laboratory**, "Epigenetic effects and gene expression in Wildlife", Dept. Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW)
2011 - 2014	**Postdoc** and **Head of Epigenetic laboratory**, **"Paternal epigenetic effects in Wild guinea pigs",** Dept. Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW), Funding: Leibniz Competitive Fund
2010 - 2011	**Guest scientist** and Lab assistant, **"Glycogen, lactate and candidate gene expression studies of diverse muscles of *Mus musculus"*,** Breeding Biology and Molecular Genetics, Dept. Crop and Animal Sciences, Humboldt-University Berlin, Germany, Funding: DFG

2008 - 2009	**Postdoc**, **"Immune gene expression in Pallid Atlantic Forest Rat (*Delomys sublineatus*)"**, Dept. Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW), Funding: BMBF
2007 - 2008	**Postdoc**, **"Seasonal gene expression changes of the roe deer (*Capreolus capreolus*)"**, Dept. Evolutionary Genetics, Institute for Zoo and Wildlife Research (IZW), Funding: DFG
2004 – 2007	**Doctor rerum naturalium**, Johannes Gutenberg University Mainz, processed at the Chinese Academy of 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 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, Heredity, BMC Genomics, Scientific Reports, Journal of Comparative Physiology A, Human Frontier Science Program (HFSP), Journal of Applied Ichthyology, American Journal of Pimatology

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, Technical University Berlin, and University of Potsdam, Unversität Freiburg, University of Florence (Italy) & Fondazione Edmund Mach (Trentino, Italy)

- LIST OF THIRD-PARTY FUNDS –

2025-2028	**iDiv FlexPool** project grant, Co-PI, "Genomic analysis of human-mediated crested macaque migration: a conservation perspective", Widdig A, Weyrich A, Nowick K, Arandjelovic M, Stadler P, Winter M, Kühl H, € 30K
2022-2024	Female Scientist Career Fund for "**iDiv Female Scientists"** initiative, € 3K
2022-2024	German Center of integrative Biodiversity Research (iDiv), "**Inter-species Epigenetics – sInSpEc"**, PI, DFG sDiv postdoc grant, € 160K
2018–2022	Leibniz Association SAW Project; **"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; in Spanish, Chinese, French, PI, € 1.5K
2011-2013	Leibniz Competitive Fund (SAW), **"Paternal Epigenetic Effects in Male Wild guinea pig"**, PI, € 1.2M

- SCHOLARSHIPS AND AWARDS –

2024	**Science Integration Prize** for "iDiv Female Scientist" initiative, €1,5K
2023	Approval as **iDiv Associate member**
2023	**University Leipzig Publication Fund**
2020	Nomination for **AcademiaNet – Expert Database of Outstanding Women Academics**
2020	**DEAL Open Access Publication Fund**
2016, 2018, 2022	**Leibniz Open Access Publication Fund** of the Leibniz Association
2017	Invitation to Professorship position at Washington State University, School of Biological Sciences
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 of Sciences for **Diploma and PhD Thesis**

- OUTREACH & PUBLIC REALATION –

2025	**ARTE Podium discussion (live), Couchwissen** about "Jurrassic Park" by Cedric aka Doktor Whatson, with Dr. Weyrich A & Kellermann M, https://www.twitch.tv/arte_tv/videos?filter=archives&sort=time
2024	iDiv Newsletter Featuring Weyrich A, Dec 2024
2024	**ARTE Podium discussion (live), Behind the Story,** about the documentation „Können wir unsere Gene austricksen?", with Meissner A (MPI), Spork P (Wissenschaftsautor), Weyrich A (IZW), 29.04.2024
2024	Deutschlandfunk "Forschung aktuell" **Interview (live)** "Der soziale Status beeinflusst das Erbgut von Hyänen", 03.04.2024
2024	**Popular Science Interview** "When the environment affects genes", published 28.3.2024
2024	Chemical & Engineering news (c&en) **Interview**, "Social status changes hyenas' epigenetics", 08.04.2024
2024	Science Notes Interview „Geparde in Freiland und in zoologischen Gärten", Weyrich A and Wachter B, Title „12-Tiere", March 2024
2024	Science Notes Interview „Zoo & Epigenetik", publish in March 2024.
2023	Design of Graphical Abstracts for Livre GDR3E "Explique moi l'épigénétique", CNRS, France
2022	Interview in The Scientist "Do Epigenetics Changes Influence Evolution?" November 2022, Issue 1
2020-2023	**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"** (short video http://www.izw-berlin.de/de/vergleichende-umwelt-epigenetik-bei-wildtieren.html)
2018	**Public presentation**, Garbicz Festival, invited presentation **"Madame Epi and the Genetics"**
2016	**Science Comic: Epigenetics – Bridge between genome and environment**, Weyrich A, Nowacki O, Köhn A, publisher: JaJa-Verlag (https://www.jajaverlag.com/epigenetik-und-epigenetics/), Funding: BMBF
2016	**RBB Kulturradio** – Interview **"What is epigenetics and why is it important?"**
2011-2019	**Girlz Day** and the **Long Night of Sciences**

- LIST OF TEACHING AND SUPERVISION –

2024/2025	PhD Students, co-supervisor (3)
2023/2024	**Lecturer** and **organizer** of seminar **"Current Topics in Genetics"**, faculty genetics, University of Leipzig, Prof. Andreas Thum, Bachelor and Master Biology (2 SWS)
Since 2008	Annual **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 (9)**, 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
2006	**Assistance in EMBO-Workshop**, in Manila, Philippines, **"Gene Expression Analysis in Diagnostic Medicine"**; Manila, Philippines
2004	**Assistance in EMBO-Workshop**, in Wuhan, China, **"Proteomics and human diseases"**
2002-2003	**Tutor in Plant Physiology**, Scientific assistant of Plant Physiology, practical work and colloquium, Johannes Gutenberg University of Mainz

- PUBLICATION LIST –

1. Grunau C and **Weyrich A** (2024) L`épigenétique dans l`évolution, Chap. 11, Livre *Épigénétique en écologie et évolution*, ISTE editions, DOI : 10.51926/ISTE.9216.ch11
2. Vullioud C, Benhaiem S, Meneghini D, Szyf M, Shao Y, Hofer H, East M, Fickel J, **Weyrich A** (2024) *Commun Biol* **7**, 313. https://doi.org/10.1038/s42003-024-05926-y
3. **Weyrich A**, Guerrero-Altamirano TP, Yasar S, Czirják GA, Wachter B, Fickel J (2022) First Steps towards the Development of Epigenetic Biomarkers in Female Cheetahs, Life 2022, 12(6), 920; https://doi.org/10.3390/life12060920.
4. 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 (2021) Ecological specialisation and evolutionary reticulation in extant Hyaenidae, *Molecular Biology and Evolution*, https://doi.org/10.1093/molbev/msab055
5. Li K[#], Zhang S[#], Song X[#], **Weyrich A**[#], Wang Y, Liu X, Wan N, Iovy 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, [#]shared first author, Proc Natl Acad Sci USA Dec 22, 2020 117 (51) 32499-32508, https://doi.org/10.1073/pnas.2018123117
6. Wahedi A, Günther A, **Weyrich A,** Sondheimer N (2020) The mitochondrial genome of *Cavia aperea,* Mitochondrial DNA Part B: Resources, May 2020, 5:3, 2147-2148, DOI: 10.1080/23802359.2020.1768918
7. **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, April 2020, https://rdcu.be/b3ytT
8. 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
9. Al-khlifeh 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
10. 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
11. **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
12. **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

13. **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
14. **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
15. **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
16. 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
17. 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*
18. **Weyrich A**, Preparation of Genomic DNA from Mammalian Sperm. Curr Protoc Mol Biol. 2012; 2:2.13.1-3. doi: 10.1002/0471142727.mb0213s98
19. 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
20. **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
21. **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
22. **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

Public Education & Outreach Projects

Teaching is not restricted to the scientific audience, but can take many forms. The teaching of biology students or scientists differs from the teaching of a non-scientific audience. In recent years, I have been creating and supporting several **outreach projects** that have been positively received. I am looking forward to sharing my experience to design further outreach projects.

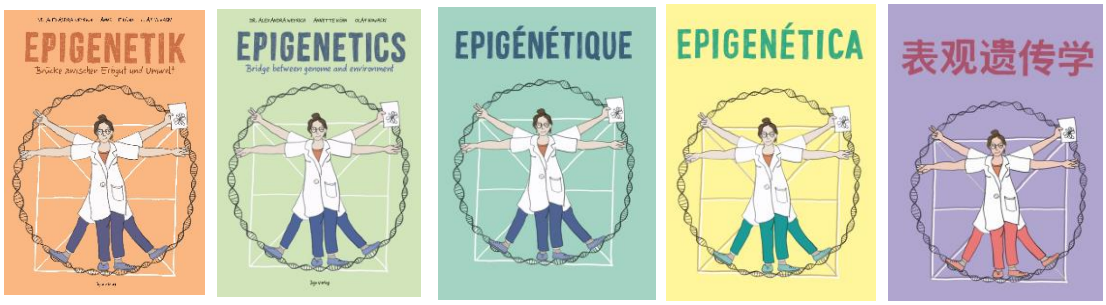
Epigenetic exhibition at Zoo Rostock "Epigeneum"

The exhibition **"Epigeneum – Treat yourself well!"** was developed together with the **Zoo Rostock** in collaboration with the Leibniz Institute for Zoo and Wildlife Research by Kathleen Röllig, Miriam Brandt (Dept. Knowledge Transfer) and myself. The exhibition was installed from March 2020 to January 2023, and currently changes location. In interactive stations and explanations, the field of epigenetics and its function for human wellbeing is illustrated to the visitor. Epigenetics serves as a bridge between the environment and the genome, by switching genes on and off in response to a changing environment. Thus, epigenetic processes regulate human development, as well as that of plants and animals.

Science Comic on Epigenetics

Comics are a great medium to illustrate abstract and complex fields such as molecular processes. With the intention of reducing the complexity and illustrating the field of **epigenetics** and its role as a **bridge between the genome and the environment**, I wrote this science comic to reach the public, including school classes and scientifically inclined taxpayers. This project was realized together with the illustrator Annette Köhn and a second author, Olaf Nowacki, and was funded by the German Federal Ministry for Education and Research (BMBF). The comic book was published in 2016. We provide it to schools and universities; it is available to the public in German and English online, in comic stores and at book fairs. To make it available to a greater international audience, funded by an ESEB Outreach grant, we also translated it into **French, Spanish and Chinese**.

German **English** **French** **Spanish** **Chinese**



Public relations

My research has been attractive to the media, leading to several **press releases** in renowned newspapers, magazines, newsletters and blogs.

The **Girlz Day** and the **Berlin Long Night of Sciences** are yearly occasions on which I educate the public on how to isolate DNA using common reagents.

Following several invitations to explain my research interest to a non-scientific audience, I have given **public talks** and **radio and journal interviews**, and designed and presented a **scientific art show**.

Organization of Scientific Workshops

Presenting my research results and concepts at **scientific conferences** provides an invaluable opportunity to discuss my own research as well as that of other scientists, as well as to form **collaborations** and build **networks**. In addition, I am active in organizing **series of workshops,** and am currently applying for a **network grant** to discuss the role of Evolutionary Epigenetics across species among international scientists.

Session chair at meeting Gesellschaft für Ökologie (GfÖ), 12.-16.9.2023, Leipzig, Germany, "Understanding the evolutionary response to global changes for biodiversity conservation", chairs: Alexandra Weyrich, Chloé Schmidt, Maria Mendez, Sreetama Bhadra, Talita Ferreira Amado, Martin Schlegel

Organizers of "iDiv Female scientists" initiative, since 1.4.2023-30.6.2024, supporting networking among women scientists with two event per month

Workshop on Environmental Epigenetics, organizer: Alexandra Weyrich, Mike Skinner, 10.2017 within the 11th International Conference on Behaviour, Physiology and Genetics of Wildlife Symposium, 4.10.-7.10.2017, Berlin, Germany

Organisation of weekly seminars of the Leibniz Institute for Zoo and Wildlife Research (IZW) with guest speaker, 01.2012-12.2016, Berlin, Germany

Interdisciplinary Project Meetings "EpiRank- Epigenetic stability and plasticity of social environmental effects", Nov 2018, May 2019, Dec 2019, June 2021, Leibniz Institute for Zoo and Wildlife Research (IZW), Berlin, Germany

Cheetah Epigenome Working Group Meeting, Leibniz Institute for Zoo and Wildlife Research (IZW), 21.05.2019, Berlin, Germany