



## Personal Information

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## Research Interests

Antifungal resistance  
Phylo- and population genomics of fungal pathogens  
Evolution and pathoecology of microbial virulence

## Education

August 2016 **PhD**, Microbiology and Immunology  
University of Utah, Salt Lake City, UT (USA)  
*"Zebrafish reveal variable effects of Escherichia coli during sepsis"*

December 2006 **BS**, Medical Microbiology & Immunology; Women's Studies  
University of Wisconsin-Madison, Madison, WI (USA)

## Academic Positions

2022 - present **Independent Junior Group Leader.**  
Institute for Microbiology, Friedrich Schiller University, Jena, Germany.

2020 - 2022 **Junior Group Leader.** Integrated into the group of Gianni Panagiotou.  
Leibniz-HKI, Jena, Germany.

2016 - 2020 **Postdoctoral Fellow**, Research group of Oliver Kurczai.  
Leibniz-HKI and University of Würzburg, Jena and Würzburg, Germany.

2010 - 2016 **Doctoral Researcher**, Research group of Matthew A. Mulvey.  
University of Utah, Salt Lake City, UT, USA.

2007 - 2009 **Associate Research Specialist**, Research group of Clive N. Svendsen.  
University of Wisconsin-Madison, Madison, WI, USA.

## Funding

2024 - 2027 Leibniz Competition. Fungal RNA Transmission Impacting Human Epigenome Regulation. *Role: Co-PI.*

2024 - 2026 FSU ProChance<sup>career</sup>. Functionalizing the Aspergillus fumigatus pangenome. *Role: PI.*

2023 - 2024 FSU Stipendium for Female Postdocs. Characterization of long non-coding RNAs associated with Aspergillus spp. virulence. *Role: Host.*

2023 Balance of the Microverse Flexible Funds.

2020 - 2026 Junior research group funded by the DFG Excellence Cluster Balance of the Microverse; UK MRC position declined.

2019 - 2022 Contributed to FINAR 2.0 funded by the BMBF/InfectControl.

2012 - 2014 T-32 Microbial Pathogenesis Doctoral Training Grant funded by NIAID.

## Five Selected Publications

Loos D<sup>+</sup>, **Pereira A<sup>+</sup>**, Dutilh B, **Barber AE<sup>\*</sup>**, Panagiotou G<sup>\*</sup>. A global survey of host, aquatic, and soil microbiomes reveals shared abundance and genomic features between bacterial and fungal generalists. Cell Reports. In press. <sup>+</sup>*equal contribution*, <sup>\*</sup>*corresponding author(s)*

Mirhakkak MH, Chen X, Sae-Ong T, Xu L, Heinekamp T, Kurzai O, **Barber AE**, Brakhage AA, Boutin S, Schäuble S, Panagiotou G. Genome-scale metabolic modeling of *Aspergillus fumigatus* strains reveals growth dependencies on the lung microbiome. Nature Communications. 2023.

**Barber AE**, Sae-Ong T, Kang K, Li J, Walther G, Panagiotou G, Kurzai O. *Aspergillus fumigatus* pan-genome analysis identifies genetic variants associated with human infection. Nature Microbiology. 2021.

**Barber AE<sup>\*</sup>**, Riedel J, Sae-Ong T, Kang K, Brabetz W, Panagiotou G, Kurzai O<sup>\*</sup>. Effects of Agricultural Fungicide Use on *Aspergillus fumigatus* Abundance, Antifungal Susceptibility, and Population Structure. mBio. 2020. <sup>\*</sup>*corresponding author(s)*

Hamprecht A, **Barber AE**, Mellinghoff SC, Thelen P, Walther G, Yu Y, Neurgaonkar P, Dandekar T, Cornely OA, Martin R, Kurzai O. *Candida auris* in Germany and Previous Exposure to Foreign Healthcare. Emerging Infectious Diseases. 2019.

Full publication list available at: <https://scholar.google.com/citations?user=COgbwJ4AAAAJ>

## Preprints and Submitted Manuscripts

**Brassington P**, Klefisch FR, Graf B, Pfüller R, Kurzai O, Walther G<sup>\*</sup>, **Barber AE<sup>\*</sup>**. Genomic reconstruction of an azole-resistant *Candida parapsilosis* outbreak and the creation of a multilocus sequence typing scheme. medRxiv. 2024. *Submitted*. <sup>\*</sup>*corresponding author*

Lerer V, Rocha M, Adeoye J, Hayby, H, **Fabre ML**, **Barber AE**, Shlezinger N. *Aspergillus* dsRNA virus drives fungal fitness and pathogenicity in the human host. *Submitted*.

**Perrier M**, **Barber AE<sup>\*</sup>**. 2024. Unraveling the Genomic Diversity and Virulence of Human Fungal Pathogens through Pangenomics. *Submitted*. <sup>\*</sup>*corresponding author(s)*

Janevska S, Weiser S, Huang Y, Lin J, Hoefgren S, Jojić K, **Barber AE**, Schäfter T, Fricke J, Hoffmeister D, Regestein L, Valiante V, Kufs JE. Optimized Psilocybin Production in Tryptophan Catabolism-Repressed fungi. *Submitted*.

## Honors and Awards

2022	Publication Prize, German Speaking Mycological Society
2021-22	Leibniz Mentoring Program
2021	Medac Research Prize
2018	International Society for Human and Animal Mycology Attendance Grant
2017	European Confederation of Medical Mycology Young Investigator Award
2015	ASM Richard and Mary Finkelstein Travel Award
2015	University of Utah Graduate School Travel Award
2012	University of Utah Alma Mater Travel Award

## Supervision

- Since 2021 Postdocs: *L. Fabre*  
PhD students: *P. Brassington, A. Pereira, M. Perrier*  
Masters student: *H. Lin*  
Visiting researchers: *A. Ryan, J. Adeoye, S. Cendon*
- 2012 - 2022 Co-supervision of: PhD students: *T. Sae-Ong, D. Loos* // Masters student: *A. Lange* // Bachelors students: *A. Tran, K. Nelson*

## Teaching

- 2022 - present Lecture and practical modules, Microbiology and Molecular Biology. Friedrich Schiller University.
- 2024 Invited lecture, Medical Mycology course run by Uppsala University and Swedish University of Agricultural Sciences
- 2014 - 2015 Instructor, Initiative to Bring Science Programs to the Incarcerated (INSPIRE) Utah State Prison and Salt Lake County Jail
- 2014 Instructor, Mechanisms of Bacterial Pathogenesis, University of Utah
- 2013 Teaching Assistant, Mechanisms of Bacterial Pathogenesis, University of Utah
- 2011 Teaching Assistant, Introduction to Medical Microbiology, University of Utah

## Academic Service and Society Memberships

Peer reviewer for mBio, PLoS Pathogens, Nature Microbiology, Microbial Genomics, G3, Antimicrobial Agents and Chemotherapy, Environmental Microbiology, Applied and Environmental Microbiology, Communications Biology.

External grant reviewer for UKRI and BSF.

- Since 2023 Elected member, Aspergillus Genomes Research Policy Committee
- Since 2023 Member, Association for General and Applied Microbiology (VAAM)
- Since 2021 Member, German Speaking Mycological Society (DMyKG)
- Since 2020 Invited member, Scientific Network for Antifungal Resistance (SN-AFR)
- Since 2020 National Research Data Infrastructure NFDI4Microbiota representative for the Microverse Cluster and the Leibniz-HKI
- 2020 - 2022 Support CRC/Transregio 124 FungiNet with infrastructure subproject
- 2018- 2020 Member, International Society for Human and Animal Mycology (ISHAM)
- 2013 - 2016 Member, American Society of Microbiology (ASM)
- 2012 - 2015 University of Utah Academic Misconduct Committee in Graduate Biosciences
- 2011 University of Utah Department of Pathology Faculty Retention and Promotion Committee

## Selected Presentations

- 2023 University of Exeter CMM MycoTalks. *Virtual*.  
2023 University of Neuchâtel. *Neuchâtel, CH*.  
2023 University of Gießen. *Gießen, DE*.  
2023 Jena Microbiome Meeting. *Jena, DE*.  
2023 Reinhardsbrunn Symposium. *Freidrichroda, DE*.  
2023 European Conference on Fungal Genetics. *Innsbruck, AT*.  
2022 Mykosen am Mittwoch. *Virtual*.  
2022 Microbial Communities: Current Approaches and Open Challenges.  
*Cambridge, UK*  
2022 FEBS Host-Pathogen Interactions in Human Fungal Pathogens.  
*La-Colle-sur-Loup, France*.  
2022 University of Basel Biozentrum. *Virtual*.  
2022 EMBL The Next Generation of Infection Biology. *Virtual*.  
2022 Advances Against Aspergillosis and Mucormycosis. *Virtual*.  
2021 Scientific Conference of the German-speaking Mycological Society. *Virtual*.  
2021 LIFE Mini-symposium. Friedrich Schiller University. Jena, Germany. *Virtual*.  
2020 Medical Mycology Trainee Seminar Series. *Virtual*.  
2020 European Conference on Fungal Genetics. *Rome, Italy*.  
2019 Fungal Genetics Conference. *Pacific Grove, CA, USA*.  
2017 Visions for Infection Control: InfectControl Strategy Conference. *Jena, Germany*.  
2015 ASM Microbe. *New Orleans, LA, USA*.

## Outreach

- 2019 Long Night of Science Jena  
2019 Skype a Scientist  
2018 World Sepsis Day  
2017 Long Night of Science Jena  
2014 McMillian Elementary School  
2014 University of Utah Educational Outreach Program  
2012 – 2013 Explore Utah Science