

# Amelia E. Barber

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## Education

- 2016 **PhD**, *University of Utah*, Salt Lake City, UT, USA.  
○ Zebrafish reveal variable effects of *Escherichia coli* during sepsis.  
○ Doctoral advisor: Matthew Mulvey
- 2006 **BS**, *University of Wisconsin-Madison*, Madison, WI, USA.  
○ Medical Microbiology & Immunology; Women's Studies

## Experience

- 2016-present **Postdoctoral Fellow**, *Leibniz HKI - Jena*, Oliver Kurzai, PI.  
○ Quantified the impact of azole fungicides on the ecology and resistance status of *Aspergillus fumigatus* in the environment  
○ Population and comparative genomics of clinical and environmental *Aspergillus fumigatus* isolates  
○ NGS-based outbreak tracking of *Candida auris* isolates submitted to the National Reference Center for Invasive Fungal Infection in Germany
- 2009-2016 **Graduate Research Assistant**, *University of Utah*, Matthew Mulvey, PI.  
○ Characterized the host response to genetically distinct pathogenic *Escherichia coli* strains  
○ Determined contributions of bacterial flagellin and TLR5 signaling to host response during sepsis  
○ Established and validated zebrafish model of sepsis by comparing clinical symptoms of human sepsis patients to pathologies seen in infected zebrafish embryos  
○ Created transgenic zebrafish lines putting IL-1 $\beta$  and IL-10 under inducible control and knocking out IL-10
- 2007-2009 **Research Specialist**, *University of Wisconsin-Madison*, Clive Svendsen, PI.  
○ Examined the neuroprotective and neuroregenerative effects of neural progenitor cell transplants expressing GDNF, IGF-1, and VEGF in animal models of neurodegenerative disease  
○ Characterized five patient-derived Huntingtons Disease iPS cell lines and established a differentiation protocol for making DARPP-32 positive striatal neurons from iPS cells
- 2005-2007 **Undergraduate Researcher**, *University of Wisconsin-Madison*, Ken Raffa, PI.  
○ Defined the gut microbiome of the Emerald Ash Borer and the Southern Pine Beetle
- 2004-2005 **Undergraduate Researcher**, *University of Wisconsin-Madison*, Barbara St. Pierre Schneider, PI.  
○ Investigated the effects of effects of estrogen and progesterone on exercise-induced muscle injury

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## Research Support & Awards

- 2018 International Society for Human and Animal Mycology Attendance Grant.
- 2017 European Confederation of Medical Mycology Young Investigators Travel Award.
- 2015 ASM Richard and Mary Finkelstein Travel Award.
- 2015 University of Utah Graduate School Travel Award.
- 2012-2014 NIAID T-32 Microbial Pathogenesis Training Grant.

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## Publications

- 2019 **Comparative genomics of serial *Candida glabrata* isolates and the rapid acquisition of echinocandin resistance during therapy**, *AE Barber*, *M Weber*, *K Kaerger*, *J Linde*, *H Gölz*, *D Duerschmied*, ..., *Antimicrobial Agents And Chemotherapy*.
- 2019 ***Candida auris* in Germany and Previous Exposure to Foreign Healthcare**, *A Hamprecht*, *AE Barber*, *SC Mellinshoff*, *P Thelen*, *G Walther*, *Y Yu*, ..., *Emerging Infectious Diseases*.
- 2017 ***Escherichia coli* O78 isolated from septicemic lambs shows high pathogenicity in a zebrafish model**, *CK Kjelstrup*, *AE Barber*, *JP Norton*, *MA Mulvey*, *TM L'Abée-Lund*, *Veterinary Research*.
- 2016 **Strengths and limitations of model systems for the study of urinary tract infections and related pathologies**, *AE Barber*, *JP Norton*, *TJ Wiles*, *MA Mulvey*, *Microbiol. Mol. Biol. Rev.*.
- 2016 **Similarly lethal strains of extraintestinal pathogenic *Escherichia coli* trigger markedly diverse host responses in a zebrafish model of sepsis**, *AE Barber*, *BA Fleming*, *MA Mulvey*, *mSphere*.
- 2014 **Reply to Kaye and Sobel**, *AE Barber*, *MA Mulvey*, *Clinical Infectious Diseases*.
- 2013 **Urinary tract infections: current and emerging management strategies**, *AE Barber*, *JP Norton*, *AM Spivak*, *MA Mulvey*, *Clinical Infectious Diseases*.
- 2013 **The Cpx stress response system potentiates the fitness and virulence of uropathogenic *Escherichia coli***, *I Debnath*, *JP Norton*, *AE Barber*, *EM Ott*, *BK Dhakal*, *RR Kulesus*, ..., *Infection And Immunity*.

- 2010 **Ex vivo delivery of GDNF maintains motor function and prevents neuronal loss in a transgenic mouse model of Huntington's disease**, AD Ebert, AE Barber, BM Heins, CN Svendsen, Experimental Neurology.
- 2008 **Human neural progenitor cells over-expressing IGF-1 protect dopamine neurons and restore function in a rat model of Parkinson's disease**, AD Ebert, AJ Beres, AE Barber, CN Svendsen, Experimental Neurology.

## Presentations

- 2019 Trends in Medical Mycology. Nice, France. Poster: "Comparative genomics of *Aspergillus fumigatus* and the influence of agriculture on ecology and azole resistance."
- 2019 30th Fungal Genetics Conference. Pacific Grove, CA, USA. Oral Presentation and poster: "Influence of conventional vs. organic agricultural practices on the ecology and azole resistance status of *Aspergillus fumigatus*."
- 2018 16th Congress of the International Society for Human and Animal Mycology. Amsterdam, Netherlands. Poster: "Comparative genomics of environmental *Aspergillus fumigatus* and the role of agricultural azoles on the emergence of resistance."
- 2017 Trends in Medical Mycology. Belgrade, Serbia. Poster: "Incidence and mechanisms of azole resistance among *Aspergillus fumigatus* in Germany."
- 2017 Visions for Infection Control: InfectControl 2020 Strategy Conference. Jena, Germany. Oral presentation: "The State of Azole Resistance in *Aspergillus fumigatus* in Germany."
- 2017 InfectControl 2020 Advisory Board Meeting. Frankfurt, Germany. Oral presentation: "The State of Azole Resistance in *Aspergillus fumigatus* in Germany."
- 2017 Joint Conference of the DGHM & VAAM. Würzburg, Germany. Poster: "Incidence and mechanisms of azole resistance among *Aspergillus fumigatus* in Germany."
- 2016 InfectControl 2020 Advisory Board Meeting. Berlin, Germany. Poster: "FINAR – Management von Pilzinfektionen bei zunehmender Azolresistenz."
- 2015 ASM Microbe. New Orleans, LA, USA. Oral presentation and poster: "Differential stimulation of TLR5 by lethal strains of *Escherichia coli* triggers markedly diverse host responses during sepsis."
- 2015 Keystone Symposium on Innate Immunity and Determinants of Microbial Pathogenesis. Tahoe, CA, USA. Poster: "Differential stimulation of TLR5 by lethal strains of *Escherichia coli* triggers markedly diverse host responses during sepsis."
- 2013 8th European Zebrafish Meeting. Barcelona, Spain. Poster: "Fishing for a new sepsis model – using zebrafish embryos to study the innate immune response during septicemia."

- 2012 Institute for Biology Education, University of Wisconsin-Madison. Madison, WI, USA. Oral presentation: "Zebrafish as a model of *Escherichia coli* septicemia."
- 2012 Microbial Pathogenesis Retreat. Salt Lake City, UT, USA. Oral presentation: "Strains of extraintestinal pathogenic *Escherichia coli* elicit markedly diverse host responses in a zebrafish model of septicemia."
- 2012 Symposium on Biological Complexity: Immunity and Inflammation. La Jolla, CA, USA. Poster: "Strains of extraintestinal pathogenic *Escherichia coli* elicit markedly diverse host responses in a zebrafish model of septicemia."
- 2011 Microbial Pathogenesis and Host Response. Cold Spring Harbor, NY, USA. Poster: "Extraintestinal pathogenic *Escherichia coli* diversity critically impacts host response in a zebrafish model of septicemia."

## Supervisory Experience

- 2016-2017 Antonia Lange. Masters student
- 2016 Elmira Keramatfar. Laboratory assistant
- 2016 Alex Tran. Undergraduate research student
- 2013-2016 Kevin Nelson. Undergraduate research student
- 2011-2016 Various rotation students through the University of Utah Molecular Biology Program.

## Academic Teaching Experience

- 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

## Institutional Service

- 2012-2015 Graduate Biosciences Academic Misconduct Committee. University of Utah
- 2011 Department of Pathology Faculty Retention and Promotion Committee. University of Utah
- 2010 Molecular Biology Graduate Program External Review. University of Utah

## Outreach

- 2019 Skype a Scientist.
- 2017 Long Night of Science Jena.
- 2014-2015 Initiative to Bring Science Programs to the Incarcerated (INSPIRE).
- 2014 McMillian Elementary School.
- 2014 University of Utah Educational Outreach Program.
- 2013 Explore Utah Science.

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## References

**Oliver Kurzai**, postdoctoral advisor

Chair, Institute for Hygiene and Microbiology, University of Würzburg, Würzburg, Germany

Group Leader, Leibniz Institute for Natural Product Research and Infection Biology – Hans Knöll Institute, Jena, Germany

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**Matthew Mulvey**, doctoral advisor

Professor, Department of Pathology

University of Utah, Salt Lake City, UT, USA

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