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Education

- 2016 **PhD**, *University of Utah*, Salt Lake City, UT.
○ Zebrafish reveal variable effects of *Escherichia coli* during sepsis.
○ PI: Matthew Mulvey
- 2006 **BS**, *University of Wisconsin-Madison*, Madison, WI.
○ Medical Microbiology and 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-1b and IL-10 under inducible control and knocking out IL-10
- 2013-2016 **Associate faculty member**, *F1000 Prime*.
○ Composed recommendations on recent scientific literature in the fields of cellular microbiology and pathogenesis
○ Check contents of Science, Nature, Cell Host & Microbe, and PLoS Pathogens to identify quality research for evaluation on F1000 Prime.
- 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

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.

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 Mellinghoff*, *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. Poster "Comparative genomics of *Aspergillus fumigatus* and the influence of agriculture on ecology and azole resistance."
- 2019 30th Fungal Genetics Conference. 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. Poster: "Comparitve genomics of environmental *Aspergillus fumigatus* and the role of agricultural azoles on the emergence of resistance."
- 2017 Trends in Medical Mycology. Poster: "Incidence and mechanisms of azole resistance among *Aspergillus fumigatus* in Germany."
- 2017 Visions for Infection Control: InfectControl 2020 Strategy Conference. Oral presentation: "The State of Azole Resistance in *Aspergillus fumigatus* in Germany."
- 2015 ASM Microbe. Oral presentation and poster: "Differential stimulation of TLR5 by lethal strains of *Escherichia coli* triggers markedly diverse host responses during sepsis."
- 2013 8th European Zebrafish Meeting. 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. Oral presentation: "Zebrafish as a model of *Escherichia coli* septicemia."
- 2017 InfectControl 2020 Advisory Board Meeting. Oral presentation: "The State of Azole Resistance in *Aspergillus fumigatus* in Germany."
- 2017 Joint Conference of the DGHM & VAAM. Poster: "Incidence and mechanisms of azole resistance among *Aspergillus fumigatus* in Germany."
- 2016 InfectControl 2020 Advisory Board Meeting. Poster: "FINAR – Management von Pilzinfektionen bei zunehmender Azolresistenz."
- 2015 Keystone Symposium on Innate Immunity and Determinants of Microbial Pathogenesis. Poster: "Differential stimulation of TLR5 by lethal strains of *Escherichia coli* triggers markedly diverse host responses during sepsis."

- 2012 Microbial Pathogenesis Retreat. 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. Poster: "Strains of extraintestinal pathogenic *Escherichia coli* elicit markedly diverse host responses in a zebrafish model of septicemia."
- 2011 Microbial Pathogenesis and Host Response. 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 Co-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 Molecular Biology/Biological Chemistry Academic Misconduct Committee.
- 2011 Department of Pathology Faculty Retention and Promotion Committee.
- 2010 Molecular Biology Graduate Program External Review.

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.

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

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