

**Brandy N. Roberts, Ph.D.**  
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## EDUCATION

**Doctor of Philosophy, Veterinary Medical Science.** Pathobiology and Population Medicine (Microbiology, Food Safety- Public Health). College of Veterinary Medicine, Mississippi State, MS. Graduation: May 2013

### **Bachelor of Science, Microbiology.**

Mississippi University for Women, Columbus, MS. Graduation: May 2006

## WORK EXPERIENCE

**Microbiology Lecture & Laboratory Instructor,** Biological Sciences, Mississippi State University, Mississippi State, MS June 2016 – present 40 hr/wk

- Develop graduate and undergraduate level lecture & laboratory courses
- Teach microbiology based courses: General Microbiology Pathogenic Microbiology, Parasitology, Bacterial Physiology, Virology, and Modern Microbiology (online).
- Coordinate Pathogenic Microbiology lab, General Microbiology summer labs and Parasitology labs including experiment prep, lab assignments and lectures
- Coordinate and supervised graduate and undergraduate teaching assistants
- Participate in the instruction of the Masters of Science in General Biology offered online through MSU.

**Post-Doctoral Research Microbiologist,** Biological Sciences, Mississippi State University, Mississippi State, MS. Jul 2015 – May 2016 40 hr/wk

- Conduct research on *Listeria monocytogenes* to determine survival in the human digestive system and genes essential to elude natural defenses
- Prepare research reports, manuscripts, and presentations by collecting, analyzing, and summarizing data
- Conduct team-based research, demonstrating techniques and aiding graduates and undergraduates assigned to projects

**Pathogenic Microbiology Laboratory Instructor,** Biological Sciences, Mississippi State University, Mississippi State, MS Aug 2015 – Dec 2015 10 hr/wk

- Senior undergraduate and graduate level laboratory
- Instruct students on the identification, properties and pathology of BSL-2 pathogens using microscopy, biochemical assays and aseptic technique
- Coordinate media prep, lab assignments and lectures for multiple sections
- Coordinate and supervised graduate and undergraduate teaching assistants

**Post-Doctoral Research Microbiologist**, United States Department of Agriculture -  
Agricultural Research Services, Mississippi State, MS. Jun 2013 - Jun 2015 40 hr/wk

- Conduct research on the impact of climate variability on foodborne pathogen survival in agriculture
- Led team-based research projects by organizing team members, manage time, and data acquisition
- Prepared research reports, manuscript, and presentations by collecting, analyzing, and summarizing data

**Biological Science Technician**, United States Department of Agriculture - Agricultural  
Research Services, Mississippi State, MS. Jan - Jun 2013 40 hr/wk

- Prepared research reports and manuscripts of data collected during graduate research

**Graduate Assistantship**, College of Veterinary Medicine, Department of Pathobiology and  
Population Medicine, Mississippi State, MS. Aug 2007 – Dec 2012 40 hr/wk

- Determined decay rates of zoonotic pathogens and viral surrogates in soils amended with biosolids and manures funded by the National Institute of Food and Agriculture
- Prepared research reports, manuscript, and presentations by collecting, analyzing, and summarizing data

**Research Technician**, Mississippi University for Women, Department of Science and  
Mathematics, Columbus, MS. Jun 2006 – Aug 2007 40 hr/wk \

- Conducted research funded by NIH working with *Shigella flexneri*.
- Trained and instructed undergraduate students in research and lab skills

## PUBLICATIONS

**Roberts, B.N.**, Bailey, R.H., McLaughlin, M.R., Brooks, J.P. 2018. Characterization of the quantitative microbial risks associated with foodborne pathogens due to exposure event post land amendment practices. In Preparation. *Sci Total Environ*

**Roberts, B.N.**, Bailey, R.H., McLaughlin, M.R., Brooks, J.P. 2016. Decay Rates of Zoonotic Pathogens and Viral Surrogates in Soils Amended with Biosolids and Manures and Comparison of qPCR And Culture Derived Rates. *Sci Total Environ*. 573:671-679

Morgan L. Wright, Ken Pendarvis, Bindu Nanduri, Mariola J. Edelman, Haley N. Jenkins, Joseph S. Reddy, Jessica G. Wilson, Xuan Ding, Paul R. Broadway, Mais G Ammari, Oindrila Paul, **Brandy Roberts**, and Janet R Donaldson. 2016. The Effect of Oxygen on Bile Resistance in *Listeria monocytogenes*. *J Proteomics & Bioinformatics*. 9(4): 107-119

White, S. J., McClung, D. M., Wilson, J. G., **Roberts, B. N.**, Donaldson, J. R. 2015. Influence of pH on bile sensitivity among various strains of *Listeria monocytogenes* under aerobic and anaerobic conditions. *J Med Microbiol*. 64:1287-1296

**Roberts, B.N.**, Bailey, R.H., McLaughlin, M.R., Miles, D.M., Brooks, J.P. 2013. Spatial and temporal analysis of microbial populations in production broiler house litter in the southeastern United States. *J Appl Poult Res*. 22:759-770.

## PRESENTATIONS

**Brandy Roberts**, Amber Thompson, Morgan L. Wright, Hossam Abdelhamed, Oindrila Paul, Daniel McClung, Janet R. Donaldson. 2016. The Resistance of *Listeria monocytogenes* to Conditions Encountered within the Gastrointestinal Tract. Invited Speaker to Math and Science Seminar. Mississippi University for Women. Feb 3. Columbus, MS

**Brandy Roberts**, Amber Thompson, Morgan L. Wright, Hossam Abdelhamed, Jessica G. Wilson, Sally White, Daniel McClung, Janet R. Donaldson. 2015. Role of the SOS Response in the Resistance of *Listeria monocytogenes* to Conditions Encountered within the Gastrointestinal Tract. Southeast Regional IDeA Conference. November 11-13. Biloxi, MS

**Roberts, B.N.**, McLaughlin, M.R., Brooks, J.P. 2015. Effects of Climate Variability on Bacterial Pathogen Decay in Spinach Bed Macrocosms. American Society of Microbiology, May 29-Jun 3; New Orleans, LA

**Roberts, B.N.**, McLaughlin, M.R., Brooks, J.P. 2012. Dissertation Defense: Spatial and Temporal Distributions of Microbial Pathogens in Poultry Litter, Development of Microbial Inactivation Constants in Waste Application, & Quantitative Microbial Risk Assessment of *Salmonella* Using Established Inactivation Rates. USDA -ARS Seminar. November 27; Mississippi State, MS

**Roberts, B.N.**, McLaughlin, M.R., Brooks, J.P. 2011. Survival of Bacterial and Viral Pathogens in Swine Effluent, Cattle Manure and Biosolids When Applied to Southeastern U.S. Soils. American Society of Microbiology, May 20-25; New Orleans, LA  
5 more presentations and proceedings upon request.

## TEACHING EXPERIENCE

**Lecturer:** General Microbiology, Parasitology, Pathogenic Microbiology Laboratory, Bacterial Physiology, and Virology– (MSU) Fall 2016 - Present

General Microbiology Lecturer and Lab Coordinator – (MSU) Summer Term II 2016

Parasitology Lecture & Lab Coordinator - (MSU) Summer Term I 2016

Pathogenic Microbiology Lab Instructor - (MSU). Fall 2015

**Distant Learning Instructor:** Modern Microbiology (online course) – (MSU) Fall 2016 & 2017

**Research Technician:** supervised and trained undergraduate students in a microbiology laboratory aseptic technique, biological safety standards, and specific microbiology protocols (USDA-ARS). Jan - July 2015

**Graduate & Undergraduate Tutor** - tutored college students chemistry, ecology, virology and microbiology (MUW & MSU). Jan 2005 - Oct 2010.

**Research Technician & Undergraduate Research Assistant** - recruited and taught undergraduate students in a molecular laboratory in media preparation, assays, and molecular techniques (MUW). June 2006 - August 2007.

**Undergraduate Teaching Assistant** -instructed secondary-school students in water chemistry and environmental science (MUW). Feb 2006.

**Undergraduate Teaching Assistant** - microbiology workshop for nurse practitioners (MUW). June 2005.

## ACADEMIC & PROFESSIONAL AFFILIATIONS

- American Society for Microbiology
- Mississippi Academy of Science
- Beta Beta Beta
- Phi Kappa Phi

## **AWARDS/ HONORS & CERTIFICATIONS**

- Distance Learning Training Certification for online teaching 2016
- USDA-ARS Graduate Assistantship Scholarship 2007 - 2012
- “Outstanding Microbiology Senior” award. 2006
- First place recipient - Cellular & Molecular Biology at MS Academy of Science Conf. 2006
- Recipient of the Lacey Scholarship. 2005 - 2006

## **REFERENCES**

Janet Donaldson, Ph.D.  
Associate Professor and Department Chair  
Biological Sciences  
University of Southern Mississippi  
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John P. Brooks, Ph.D.  
Research Microbiologist  
Genetics and Precision Agriculture Research  
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R. Hart Bailey, Ph.D.  
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Pathobiology and Population Medicine  
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