
PhD Graduate Research Assistantship

Rumen Microbiology, Host Genomics & Single-Cell Biology
University of Tennessee, Knoxville – Department of Animal Science

Start Date: Fall 2026

Degree: PhD in Animal Science

Funding: Fully funded (tuition, stipend, benefits)

Project Overview

We are seeking a highly motivated PhD student to join a USDA-NIFA funded research project investigating host-microbiome interactions at the rumen wall in beef cattle. This project uses cutting-edge single-cell RNA sequencing, metatranscriptomics, and genomic association approaches to uncover how host genetics and ruminal microbial communities interact to regulate nutrient absorption and feed efficiency in beef cattle.

Research Focus

The successful PhD student will lead discovery-driven research that characterizes individual rumen epithelial cell populations, defines the active microbial communities residing on the rumen wall, and determines how host genetic variation influences both tissue gene expression and microbial composition. Through these efforts, the student will help build foundational knowledge that can transform breeding, nutritional, and management strategies to enhance resilience and productivity in beef production systems.

Training will be truly interdisciplinary and hands-on. The student will gain experience in rumen epithelial tissue sampling and cell dissociation, metagenomics, single-cell RNA-seq library preparation, metatranscriptomic profiling of rumen microbial communities, and advanced bioinformatic and statistical analyses. The work will be supported by UT's world-class genomics and high-performance computing infrastructure and will be tightly integrated with large-scale Angus feed efficiency trials conducted at UT AgResearch facilities.

Qualifications

Applicants should hold an MS degree in Animal Science, Microbiology, Genomics, Bioinformatics, or a related discipline and demonstrate a strong interest in rumen biology, microbiomes, or quantitative genomics. Prior experience with R, Python, Linux, or high-throughput sequencing data is highly desirable, along with strong written and verbal communication skills.

Funding & Support

This is a fully funded PhD assistantship that includes tuition, a competitive stipend, health insurance, and professional development support. The student will have opportunities for national and international conference travel, Extension and producer engagement, and collaboration with industry and academic partners. Graduates of this program will be well-positioned for careers in academia, government research, biotechnology, and the animal agriculture industry.

To apply, please submit a single PDF containing a CV, transcripts, a brief statement of research interests, and contact information for three references to pmyer@utk.edu.

Dr. Phillip R. Myer

Associate Professor & Graduate Director
Department of Animal Science
University of Tennessee, Knoxville

NEW **PhD OPPORTUNITY** IN THE MYER LAB AT THE UNIVERSITY OF TENNESSEE!

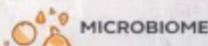
We're recruiting a fully funded PhD student

to study how rumen microbes and host genetics drive feed efficiency and sustainability in beef cattle using single-cell technologies & metatranscriptomics.



BIG SCIENCE. BIG DATA. REAL-WORLD IMPACT.

 pmyer@utk.edu



#Vols #UTKnoxville #PhDPosition

#CattleResearch #Microbiome #Genomics

#SingleCell #SustainableAg



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