



We are seeking excellent applicants for two graduate students, one 2-year MS and one 3-year PhD. Students will be working with Dr. Khaled Abdelaziz in immunology and microbiology. Expected start date will be August 15, 2022.

**Areas of research:**

Master's degree: Nutritional modulation of chicken immunity.

PhD degree: Developing immune-based strategies to control foodborne pathogens in chickens.

Dietary supplementation of antibiotics in poultry feed enhances feed efficiency, growth performance and reduce levels of enteric pathogens. However, due to public health concerns about the impact of antibiotic residues on human health and the potential emergence of antibiotic-resistant strains of bacteria, in 2017, FDA regulations banned antibiotics use for growth promoting purposes across the US. The removal of infeed-antibiotics has resulted in re-emergence of the well-controlled diseases of poultry. Due to these concerns, there is an increased interest in the use of antimicrobial alternatives (such as prebiotics, probiotics, synbiotics, phytobiotics, essential oils, organic acids, enzymes, vaccines and immunostimulants) to fill this gap. Dr. Abdelaziz's current research focuses on developing novel immune-based strategies, including vaccines, immunostimulants, and investigating the potential use of probiotics as an alternative to antibiotics to:

- Promote poultry gut health and immune system development and function.
- Prevent or reduce intestinal colonization of chickens by bacterial pathogens of food safety concern, including *Campylobacter*, *Listeria monocytogenes*, and *Salmonella* sp.

Prior to matriculation, applicants must possess relevant qualifications, and meet the academic standards for admission by the Clemson University Graduate School. For the PhD position, preference will be given to those students who have completed a Master of Science thesis in Immunology, Poultry Science, Dairy Science, Animal Science, or a closely related field. Preferred characteristics include the following abilities: work with chickens, a keen interest in immunology, collect and analyze samples, analyze data, and write and speak English proficiently. Expectations will include thesis/dissertation completion within the given time for each program and presentations related to their research. Some evening and weekend commitments can be anticipated.

Interested applicants should send a current resume/CV, cover letter including preferred interest area, unofficial copy of transcripts, and contact information for three references to Dr. Khaled Abdelaziz ([khaled2@clemson.edu](mailto:khaled2@clemson.edu)). General queries about graduate studies in the Department of Animal and Veterinary Sciences should be directed to Dr. Nathan Long ([nlong2@clemson.edu](mailto:nlong2@clemson.edu)).

Clemson University (<https://www.clemson.edu/>) is located in Upstate South Carolina and the foothills of the Blue Ridge Mountains. We have approximately 26,000 enrolled students, of which 450 undergraduate and 23 graduate students are Animal and Veterinary Sciences majors. For more information visit our website at: [https://www.clemson.edu/cafls/departments/animal\\_vet\\_science/](https://www.clemson.edu/cafls/departments/animal_vet_science/).