Favorite Tick and Why: I have listed the Lone Star Tick, *Amblyomma americanum,* but I am not really a "tick person". I am, however, interested in pathogens which spend time within ticks and have adapted to survive in that environment, thus my interest in ticks. I'm just glad the real tick researchers let me hang out on the fringes. It is fascinating.

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Education: PhD, University of South Alabama College of Medicine.

Title: Assistant Professor, Department of Microbiology and Molecular Genetics

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Area of Research Expertise: Molecular Pathogenesis of Obligate Intracellular Bacteria (Coxiella burnetii and Rickettsiae sp.)

Research Interests: I am interested in the molecular pathogenesis of obligate-intracellular bacterial pathogens. I have research ongoing with Coxiella burnetii and Ricketsiae species in my lab. My main focus centers on C. burnetii, the causative agent of Q fever. Usually, C. burnetii is acquired through close contact with animals (particularly ruminants), making it a zoonotic pathogen. However, both C. burnetii and the Rickettsial species (spotted fever group) are harbored and transmitted by ticks. C. burnetii lives and replicates within a phagolysosomal compartment of its mammalian host cell while Rickettsiae live free within the cytoplasm. Efforts in my lab are currently centered on identifying and characterizing bacterial systems used to secrete effector proteins into the host cell during infection and the host cells gene expression response to these infections. Understanding bacterial and host factors which may be involved in the invasion, intracellular trafficking, host immune-avoidance, and subsequent replication of these unique organisms are the broad focus of my lab.

Teaching: I teach undergraduate general biology (BIOL1114) and a graduate level Cellular Microbiology course (MICR6133).

Selected Publications: (Last 3-5 years)

Carrie Y. Pierce, John R. Barr, Adrian R. Woolfitt, Hercules Moura, Edward I. Shaw, Herbert A. Thompson, Robert F. Massung, and Facundo M. Fernandez. Strain and phase identification of the U.S. category B agent Coxiella burnetii by matrix assisted laser desorption/ionization time-of-flight mass spectrometry and multivariate patter recognition. Analytica Chimica Acta 583:1 (2007) 23-31.

McQuiston, J. H., Nargund, V., Miller, J. D., Priestley, R., Shaw, E. I., and Thompson, H. A.. Prevalence of Antibodies to Coxiella burnetii among Veterinary School Dairy Herds in the United States, 2003. Vector-Borne and Zoonotic Diseases, (2005) Spring 5(1), 90-91.

Shaw, Edward I., Moura, H., Woolfitt, A. R., Ospina, M., Thompson, H. A., and Barr, J. R.. Identification of Biomarkers of Whole Coxiella burnetii Phase I by MALDI-TOF Mass Spectrometry. Analytical Chemistry. (2004) July 15; 76(14), 4017-4022.

Thompson, Herbert A., Hoover, T. A., Vodkin, M. H., and Shaw, E. I.. Do Chromosomal Deletions in the Lipopolysaccharide Biosynthetic Regions Explain All Cases of Phase Variation in Coxiella burnetii Strains? An Update. In Rickettsiology: Present and Future Directions. Annals of the New York Academy of Science. (2003) Vol. 990. pg 664-670.

Miller, J. D., E. I. Shaw, H. A. Thompson. Coxiella burnetii, Q fever, and Bioterrorism. In: Microbial Infection and Bioterrorism.B. Anderson, H. Friedman, M. Bendinelli, Eds. January 2006

The link to my lab web page within the Department of Microbiology and Molecular Genetics is

http://microgenetics.okstate.edu/~eshaw/