NC STATE UNIVERSITY

Comparative Medicine Institute

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Establishment of the pig as a model for *Chlamydia trachomatis* vaccine development

Research emphasis

Amanda Amaral's main research area is to establish the pig as a model for *Chlamydia trachomatis* (*Ct*) vaccine development. Her work focus is to determine the immunoprotective potential of killed *Ct* vaccines in a pig genital tract infection model. She will use i*n vitro* analysis systems to study the innate immune response, and infect pigs i*n vivo* with *Ct* to study the adaptive immune response. In addition, she will work on determining the influence of *C. suis* infections on sow performance and its impact on the North Carolina pig production.

Applications

- Pathogen detection via qPCR, flow cytometry (FCM) and fluorescent microscopy
- Cellular immune response analysis via qPCR and polychromatic FCM
- Detection of neutralizing antibodies against chlamydia using FCM

Research Strengths

- Cell culture + chlamydia culture
- DNA/RNA isolation + qPCR
- Flow Cytometry

Abstracts

Amaral AF, Lorenz L, Käser T. *Chlamydia trachomatis* infection in pigs: A new model for studying human STIs? CMI Annual Research and Innovation Summit, Raleigh, 2017.

Amaral AF, Rieder M, Lai K, Pasternak A, Hamonic G, Lorenz L, Gerdts V, Meurens F, Käser T. Porcine primary genital tract epithelial cells (GTEC) as an *in vitro* model to study the innate immune response to *Chlamydia trachomatis. Duke Innate Immunity Group Symposium*, Durham, 2017.

Amaral AF, Lorenz L, Käser T. Pig as a large animal model to study chlamydia infections. *Celebration of TPP Research*, Raleigh, 2017.