Role of Gut Microbiota in Disease and Stress among Shelter Cats

Shefali Kaul, Kelly Bosco, Jenny Howard, Aaron Ericsson, Amie Burling, Craig Franklin
University of Missouri - Columbia

Background
Cats are extremely susceptible to stressors in their environment. Many of these stressors are present in shelters, and they can significantly impact a cat’s wellbeing.

Purpose
We aim to understand how various stressors to shelter cats can correlate with changes in their gut microbiome (GM).

Methods
Assess cat for target parameters (shelter, age, sex, stress score, disease)
Collect fecal sample
Extract and purify DNA
16S rRNA sequencing

RESULTS!

Disease-associated Differences in GM

Stress-associated Differences in GM

Conclusions/Future Directions
Our initial findings show there may be a difference in the GM of cats that develop URIs and/or maintain a stress score above three.
Analysis also identified target species of bacteria that warrant further investigation about their role in disease and/or stress of shelter cats.
Sample collection is ongoing and will be processed in the coming weeks.

Acknowledgements
This project is supported by a grant from the Morris Animal Foundation and discretionary funds from the Franklin Lab.
We would like to thank the Central Missouri Humane Society (Roxie Richards) and Jefferson City Animal Shelter (Dr. Jessica Thiele) for their help with the project.
Special thanks to members of the Franklin Lab (Giedre Turner and Rebecca Dorfmeyer) and the entire VRSP faculty.