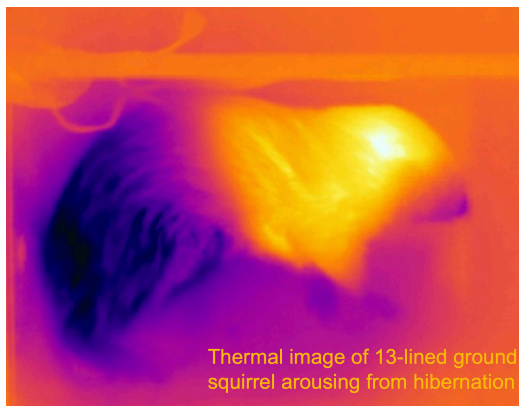




# A role for the gut microbiome in hibernation metabolism

Matthew D. Regan  
*University of Montreal*

Hibernation is a mammalian strategy that uses metabolic plasticity to reduce energy demands and enable long-term fasting during winter, when food is scarce. While fasting solves the hibernator's food scarcity problem, it also deprives its gut microbes of their primary nutrient source. This talk will explore how long-term fasting alters the hibernators' gut microbiome and how these alterations may in turn impact the metabolic phenotype of hibernation. It will focus on a new study in which we demonstrate a gut microbiome-mediated process of urea nitrogen recycling in 13-lined ground squirrels, which supplies the squirrel with nitrogen throughout the winter fast when it lacks a dietary nitrogen source. And unlike most processes during hibernation, this one increases over winter, facilitating tissue protein synthesis prior to the squirrel's emergence in spring.



**Friday, November 19<sup>th</sup> at 13.00 on Zoom**  
**<https://aarhusuniversity.zoom.us/j/65047335060>**