**Following the MAP**

**What is MAP?**
- *Mycobacterium avium ssp. paratuberculosis*
- Johne's Disease
- Causes: Chronic progressive wasting in ruminants resulting in death or euthanasia

**Why is it impactful?**
- In 2007, USDA found almost 70% of US dairy herds had at least one sick cow
- Economic losses: US Dairy Farms lose $200 million per year
- Johne's Disease is highly contagious, not treatable, and has no effective vaccines for prevention

**Survivability**
- MAP is able to survive the host's immune system attacks
- It is not cleared out of the body, and will continue to grow
- Able to survive highly acidic environments

**The Unknown**
- A gene has been found in TB that is required for survival in a host
- We now have to determine if MAP also has that gene
- If is does, it may be a target for Johne's Disease treatments or prevention

**Current Research**
- Macrophages should be able to clear infection
- MAP can survive harsh environments in macrophage for unknown reasons
- With no knowledge of how MAP can infect hosts, treatments cannot be made