Ancestral Reconstruction of *Mycobacterium Tuberculosis* using BEAST and RASP

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CSC 334
Mycobacterium Tuberculosis

- Bacteria spread through air
- Common in highly populated areas in Asia and Southern Africa
- Largely affects those with compromised immune systems
Motivation

- Data publically available
- Higher-risk for marginalized groups
  - Stigma and co-morbidity
- MultiDrug-Resistance TB

Understanding its evolution allows us to better treat TB and stop its spread.
Methodology

Data from Mycobacterial Genome Database 2.0

BEAST (And BEAUTi)

RASP 3.2 (Reconstruct Ancestral State in Phylogenies)
Mycobacterial Genome Database 2.0

http://saclab.tamu.edu/genomeDB/

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Results/Future Work

- Move to stronger computer(s)
- Debugging Nexus Code
- Recalibrate BEAST
- Run RASP on BEAST tree files


