Introduction

Thus far our team has completed the 4 steps involved in analysis of our 50 genomes from the CDC.

Now the final step is to integrate everything we’ve worked on into a predictive webserver for analysis of future samples.

LOKI: E. coli Outbreak Investigator
Objectives

● To create a predictive webserver that allows for automated breakout analysis
  ○ Easy to use
  ○ Visually appealing
● Provide interactive, informative visualizations
● Virulence factor and resistance profile for each isolate
● Determine whether isolate is outbreak or sporadic strain
● Provide user with downloadable results
Analysis Toolset

Genome Assembly: SPADES
Gene Prediction: PRODIGAL
Functional Annotation: CARD, VFDB
Comparative Genomics: kSNP3, MASH
Graphical User Interfaces

Success!

Follow this link for results:
http://predict2019t1.biosci.gatech.edu/output
Results
Results

Antimicrobial Resistance Profile
Antimicrobial resistance genes identified from the CARD database

Virulence Factors
Virulence factors identified from the Virulence Factor Database for

Isolate 1335 is resistant to ermB

Isolate Timeline

Isolate Distribution

Isolates from Georgia
WEBSERVER DEMO!