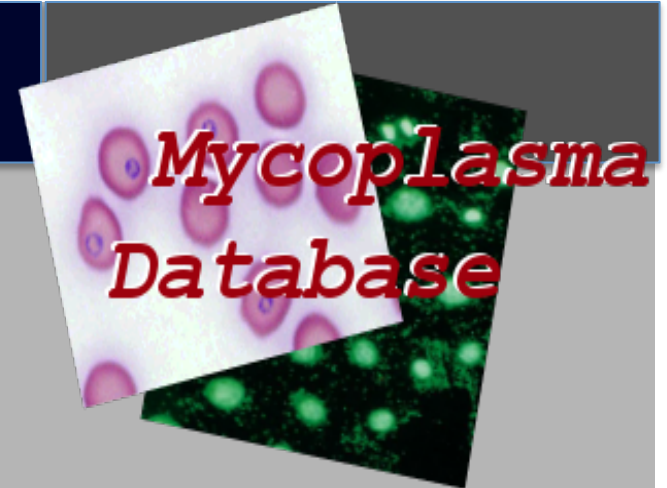


Home

GBrowse

BLAST

Pictures



The Mycoplasma Genome Database

marrying microscopy and genomics

Andrew Oberlin
Iddo Friedberg
Mitchell Balish

Department of Microbiology
Department of Computer Science

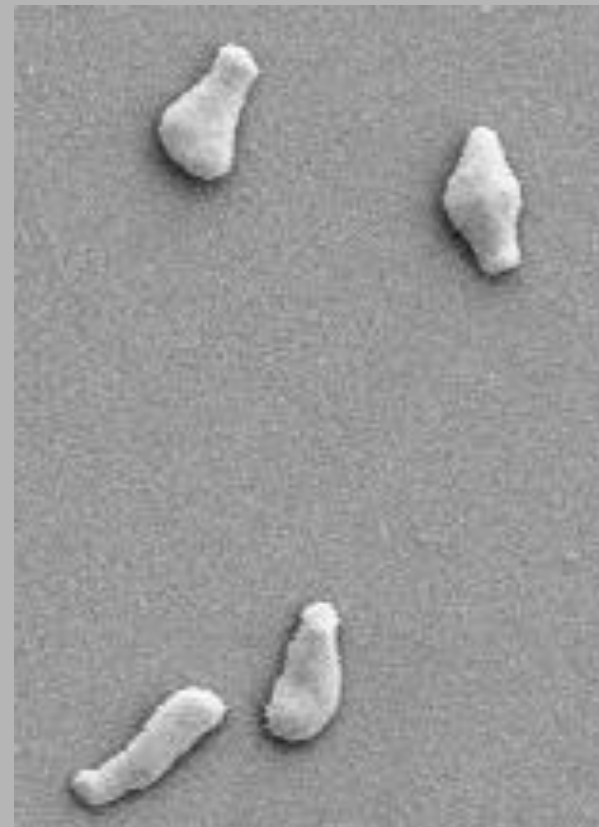


MIAMI
UNIVERSITY



Overview

1. The Mycoplasma Genus
2. DOME Webtool
 - a. Home Page
 - b. Gbrowse
 - c. Blast
 - d. Image Browse
 - e. Image Tagging
3. Database
4. Users
5. Future Research





The Mycoplasma Genus

- Parasitic bacteria in animals and humans
- Mollicute class of bacteria
- Rapid evolution
- Unaffected by penicillin
- Phylogenetic separation




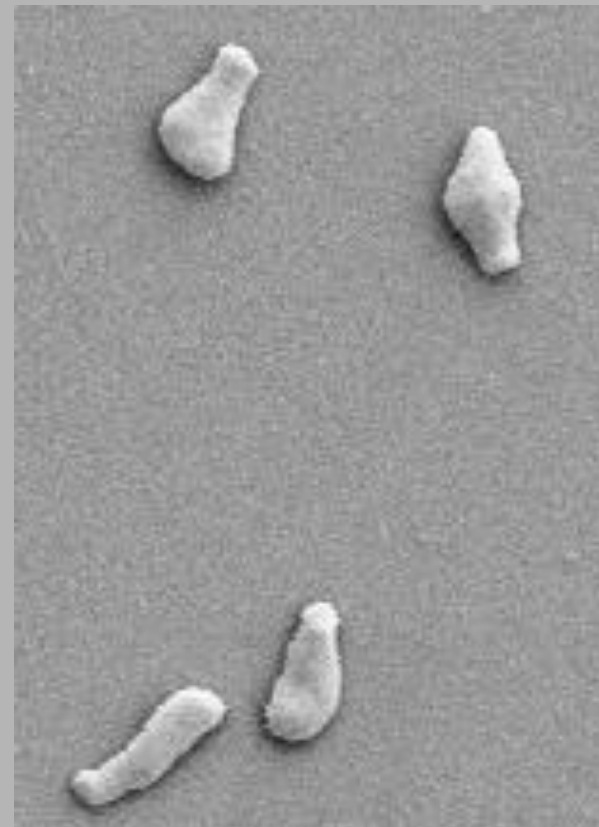
Why Mycoplasma?

- Important for study of pathogenesis
- Small genome makes it candidate
 - for genomic study
 - for finding the “minimal cell”
- Rapid adaptation within enclosed clade
 - Physiology, biochemistry, and unusual codon usage



Overview

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Home

GBrowse

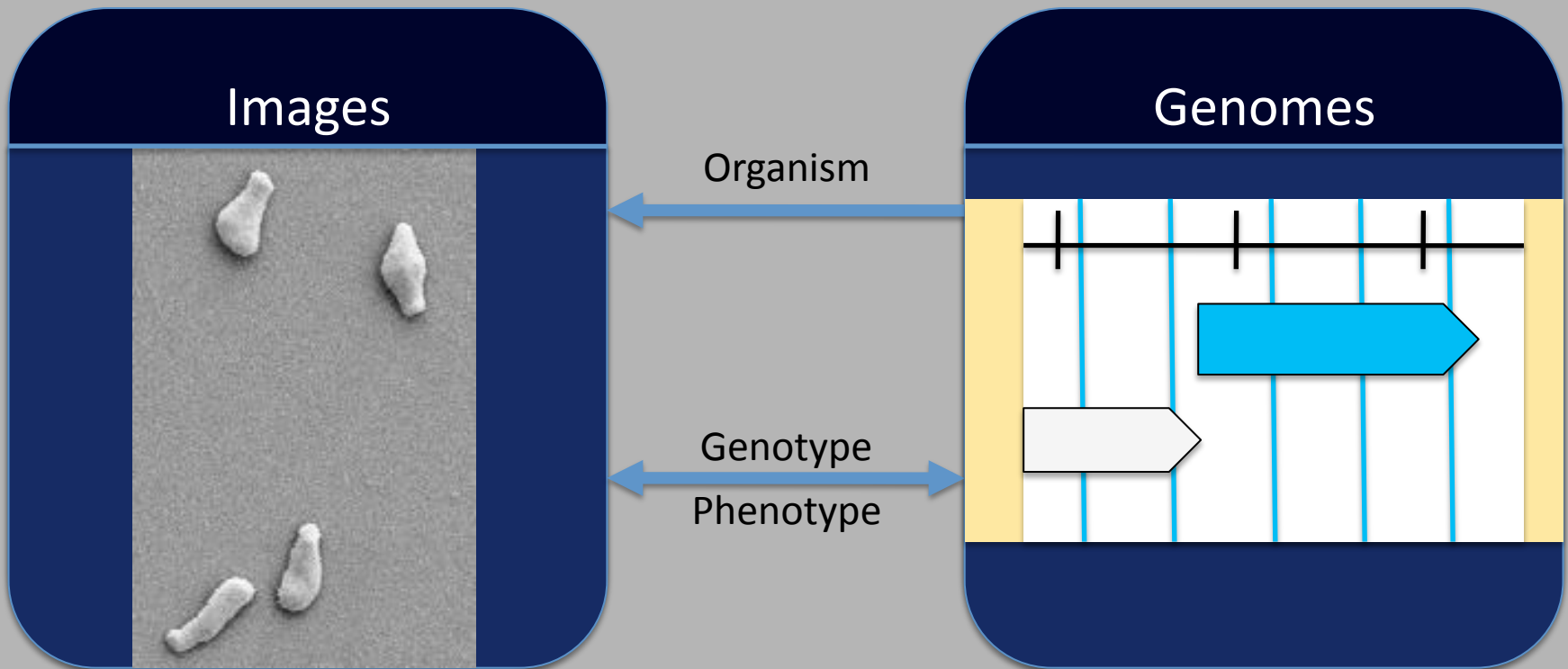
BLAST

Pictures



DOME

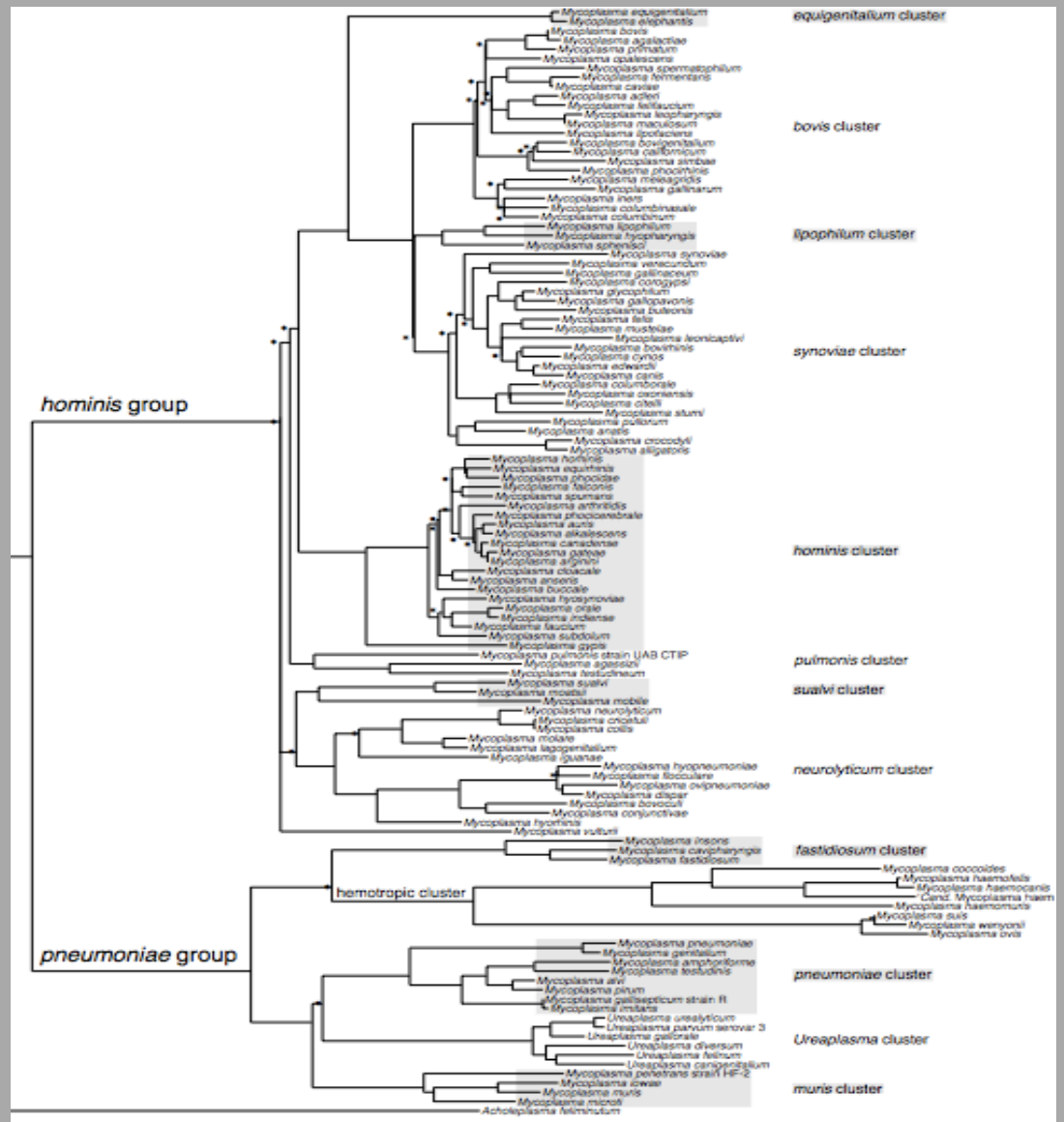
Database of Mycoplasma Evolution





search

Photo Genome search



- Mycoplasma agalactiae
- Mycoplasma agassizii
- Mycoplasma arthritis**
- Mycoplasma bovis
- Mycoplasma capricolum
- Mycoplasma conjunctivae
- Mycoplasma crocodyli
- Mycoplasma fermentans**
- Mycoplasma gallinarium
- Mycoplasma gallisepticum
- Mycoplasma genitalium
- Mycoplasma haemofelis
- Mycoplasma hominis
- Mycoplasma hyorhinae
- Mycoplasma leachii
- Mycoplasma mobile
- Mycoplasma mycoides
- Mycoplasma penetrans

 search

Mycoplasma pneumoniae: 50 kbp from NC_000912:1..50,000

Browser [Select Tracks](#) [Community Tracks](#) [Custom Tracks](#) [Preferences](#)

Search

Landmark or Region:

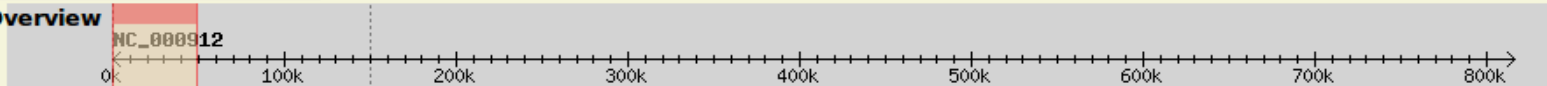
 Search

Examples: [NC_000912](#).

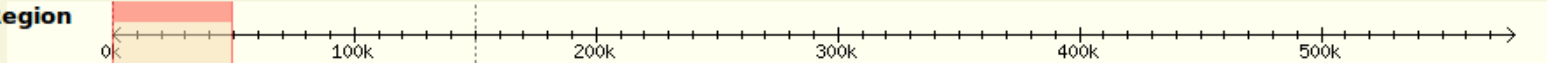
Data Source

Scroll/Zoom: Flip

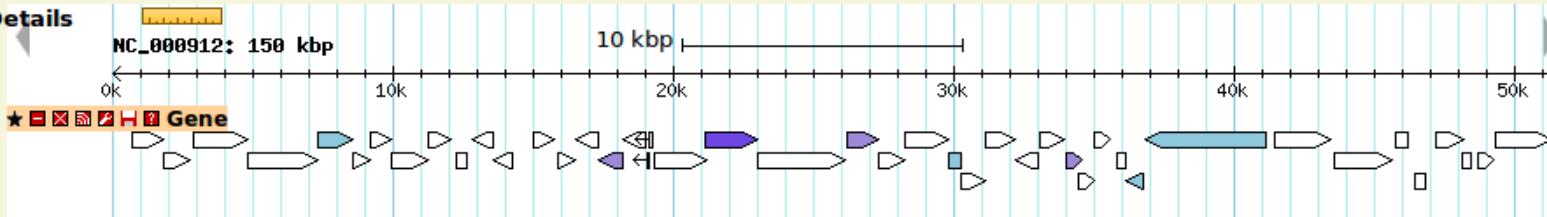
Overview



Region

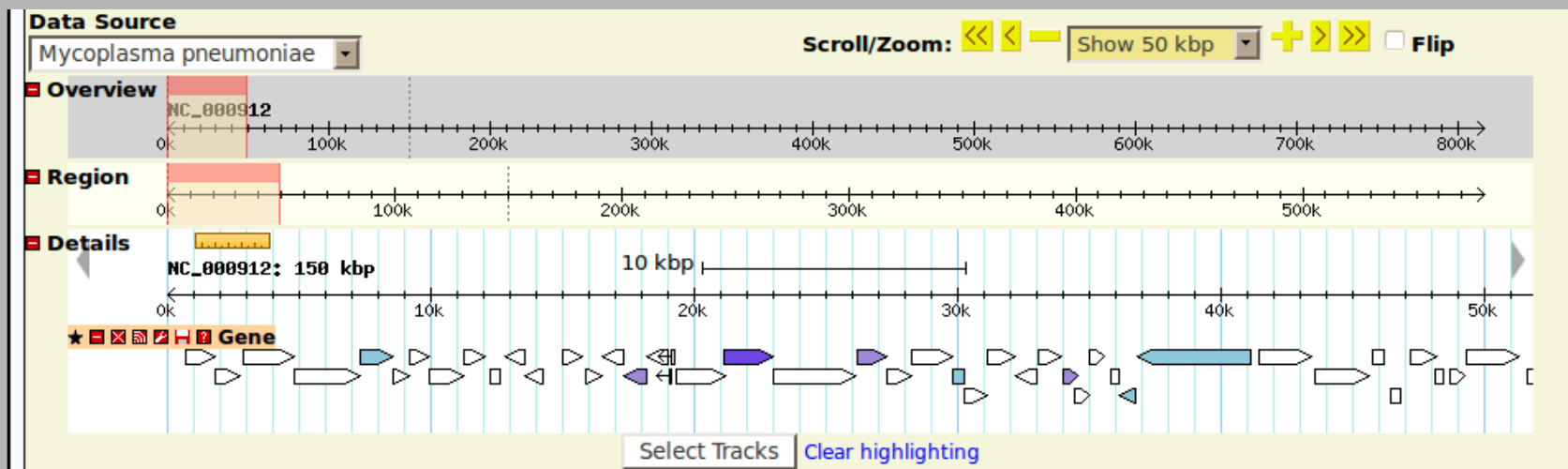
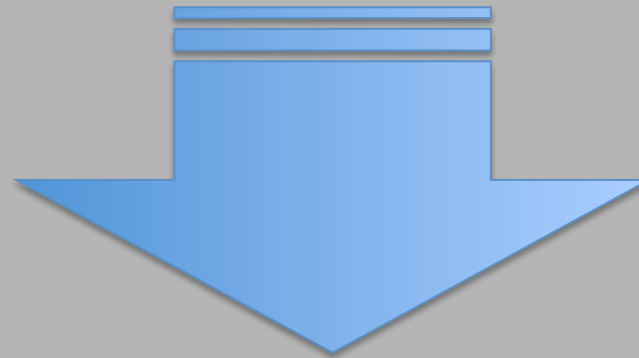
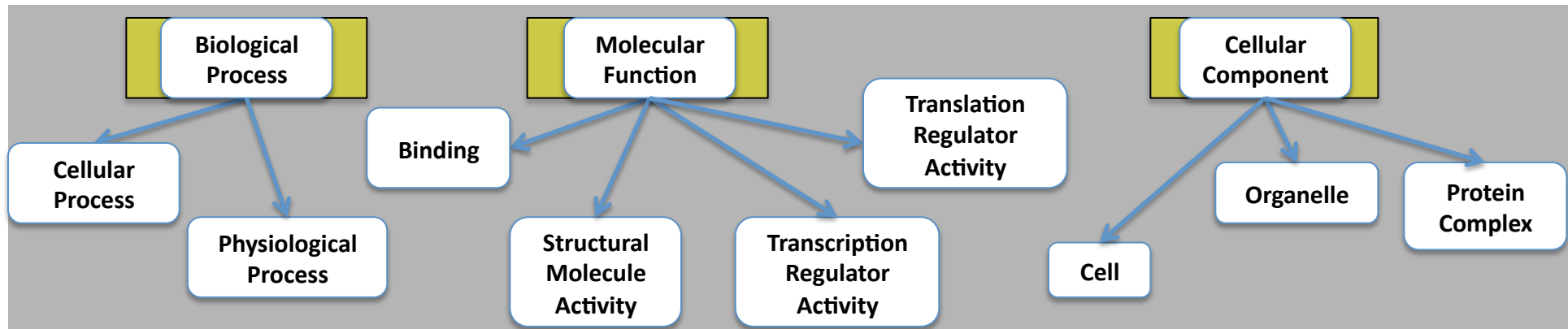


Details



[Select Tracks](#) [Clear highlighting](#)

Generic Genome Browser version 2.33. For questions about the data at this site, please contact its webmaster. For support of the browser software *only*, send email to gmod-gbrowse@lists.sourceforge.net or visit the [GMOD Project](#) web pages.



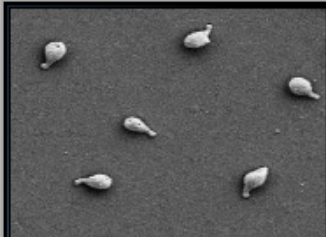


BLAST

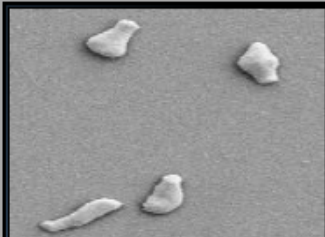
Sequence File

Sequence

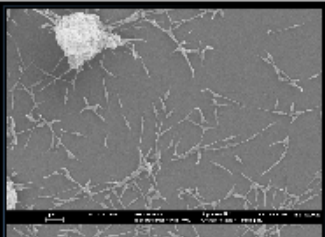
Database
Mycoplasma agalactiae ▼

 search

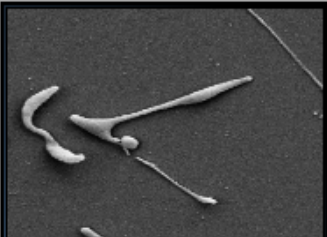
Mycoplasma genitalium



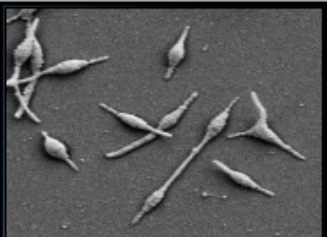
Mycoplasma mobile



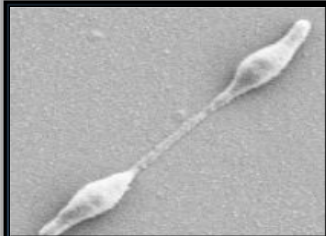
Mycoplasma pneumoniae



Mycoplasma penetrans



Mycoplasma pneumoniae



Mycoplasma genitalium



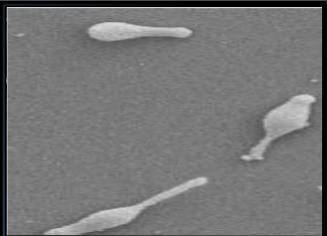
Mycoplasma mobile



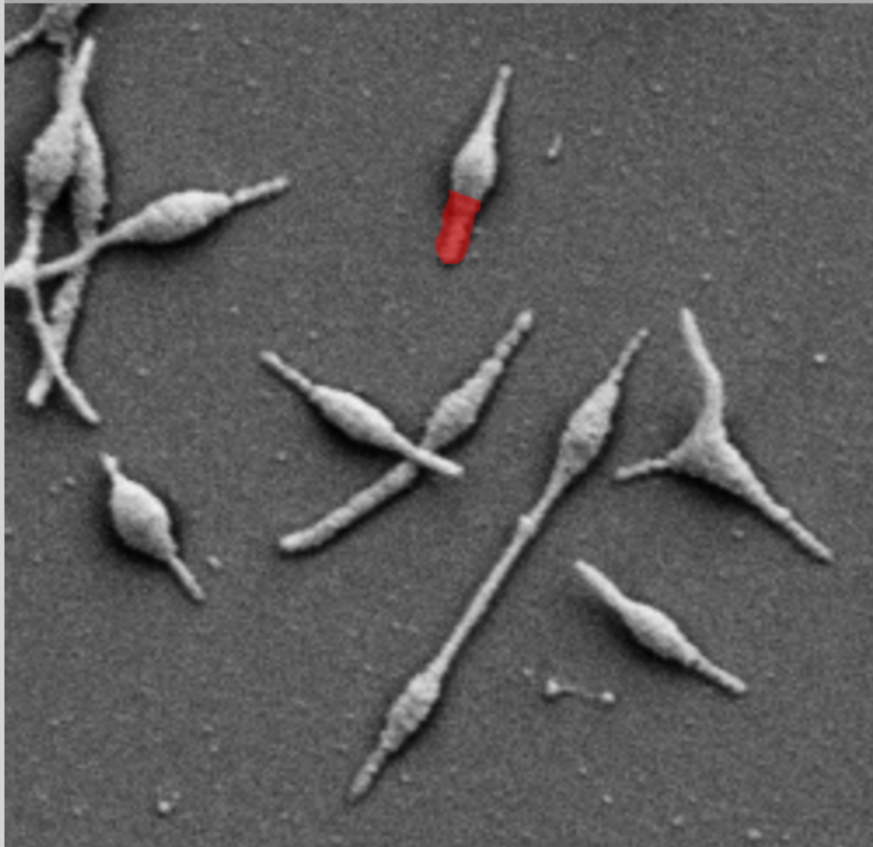
Mycoplasma pneumoniae



Mycoplasma penetrans

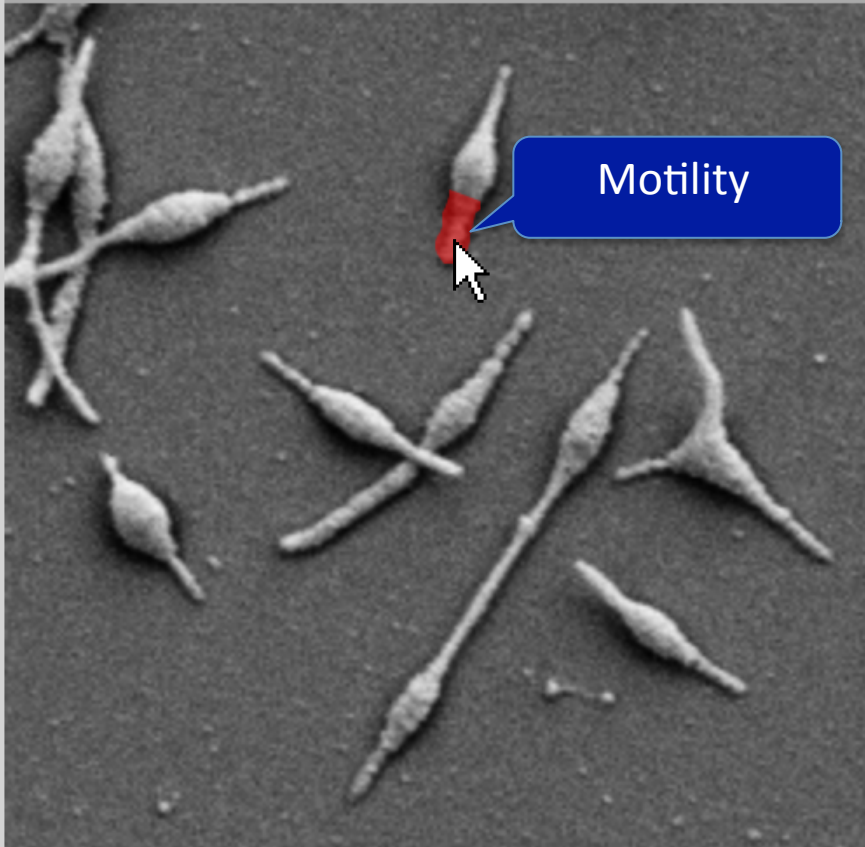


Mycoplasma pneumoniae

 search

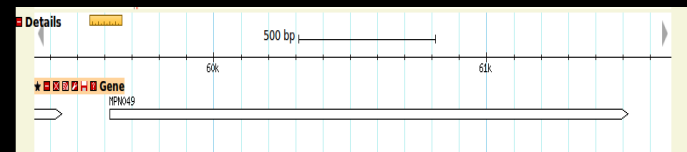
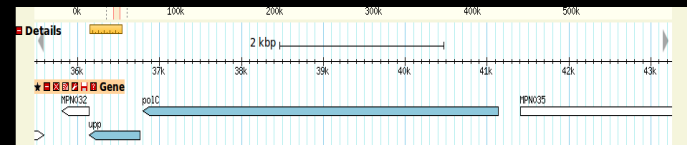
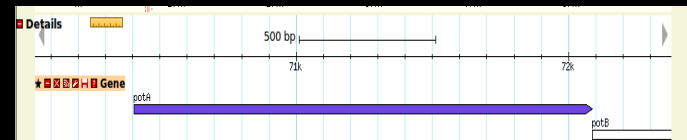
Mycoplasma pneumoniae

Stop Tagging Description:

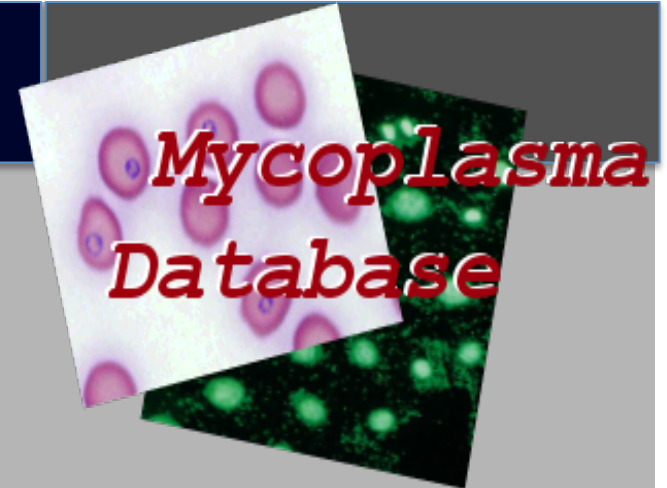
 search

Motility

Mycoplasma pneumoniae



Stop Tagging Description:



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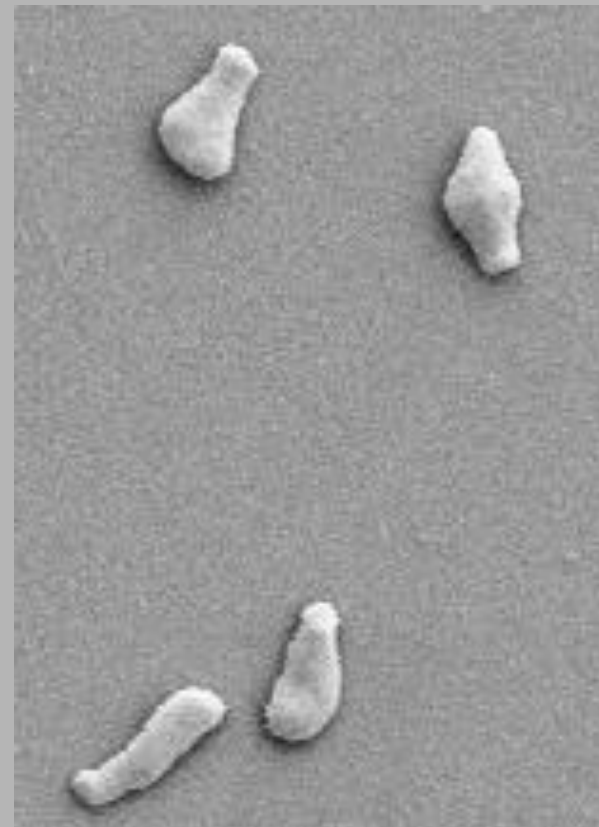
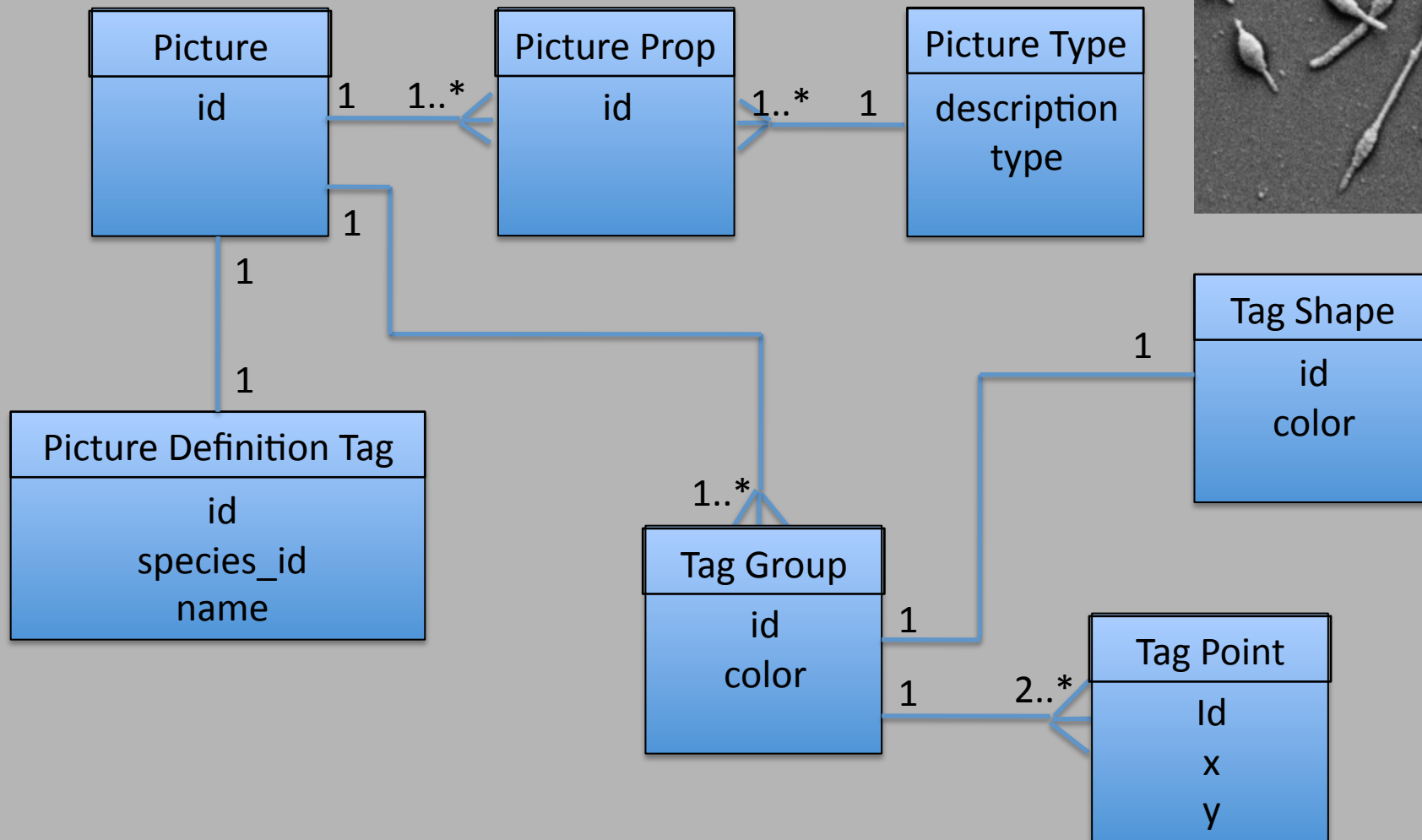
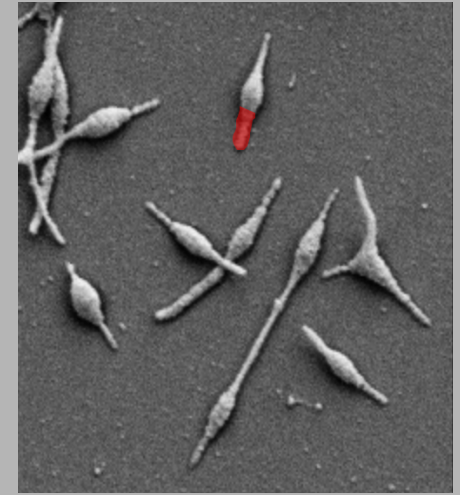


Image Database Schema

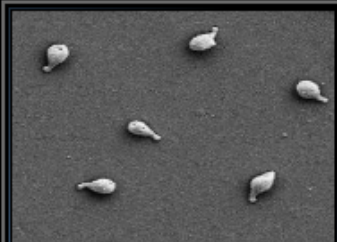


Mycoplasma genitalium, Mycoplasma pneumoniae

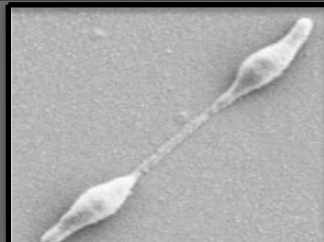
Minimize

M. genitalium

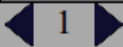
M. pneumoniae



Mycoplasma genitalium



Mycoplasma genitalium



Minimize

M. genitalium

M. pneumoniae

Search

Landmark or Region:

NC_000908:1..50,000

Search

Examples: [NC_000908](#).

Scroll/Zoom:

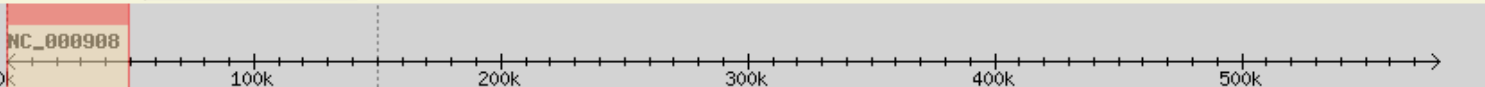


Show 50 kbp

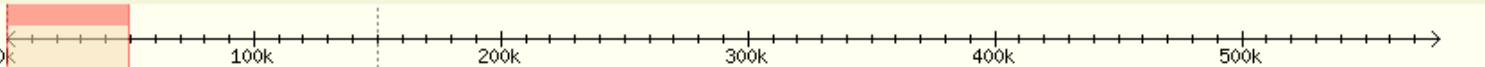


Flip

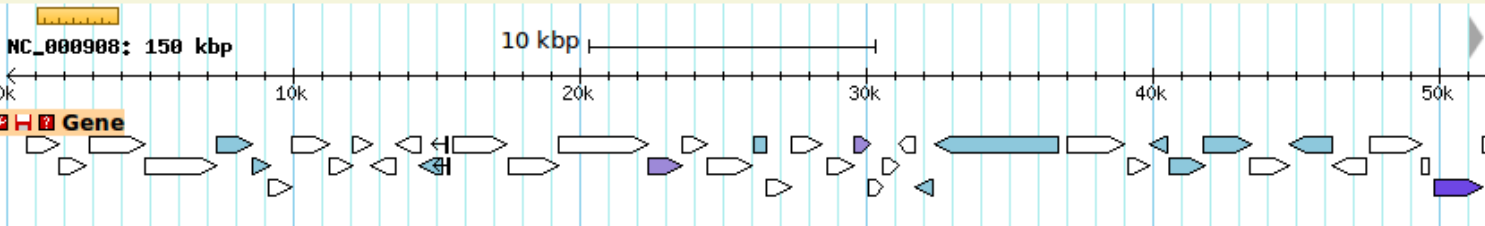
Overview



Region



Details

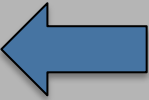


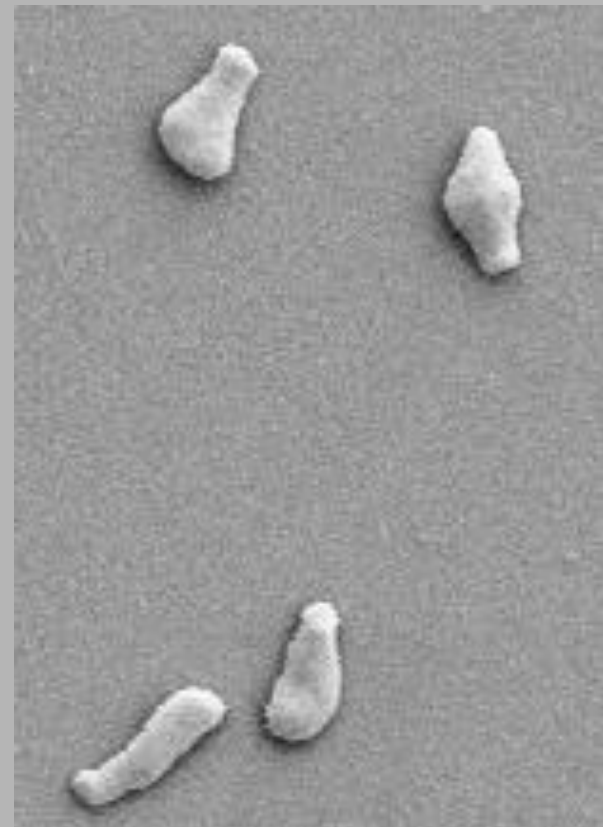
Select Tracks

Clear highlighting



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User Levels

Experts

Edit databases

Approve
image tagging
and gene
annotation

Upload
images and
genomes

Annotators

Annotate genes in Gbrowse

Tag images

*pending approval
from admins

General Users

Gbrowse feature

BLAST against our
Mycoplasma databases

View images and their
tags

Search by organism

search

+ Add files... + Start upload - Cancel upload - Delete files

You can select Multiple files at once using Ctrl(Win) or Command(Mac), or you can drag'n'drop your files on this form.

An image gallery interface showing a sequence of six images of mycoplasma cells. The first image is labeled '(a)' and shows three stages of cell development with arrows indicating progression. Below the images are numbered tabs from 1 to 6. A 'Start' button is located at the bottom right of the gallery.

Expert – uploads image



Annotator – annotates image



Future Research

- Converting from GBrowse to Jbrowse for quicker searches
- Providing automatic updating of Chado database for the administrator
- Adding annotator level users for gene and image annotation



Acknowledgements

- Dr. Iddo Friedberg
- Dr. Mitchell Balish
- GMOD Community (especially Scott Cain)
- Miami University Undergraduate Presentation Award