Problems

Query by phylogenetic profile

- Find how many genes are orthologous between *A.fumigatus* and *A.nidulans*

- How many are also syntentic orthologs?

- How many genes are orthologs between *C. neoformans* and *C. albicans*?

Query for Locations

- You've mapped a region that is associated with your phenotype to 25kb region in *Coccidioides* chromosome 1 between 680300 and 720300

- You think it is a kinesin related protein

Motif query

- Pheromone Response Element (PRE) motif bound by STE12 (A or T)TGAAACA

- Can you find the number of genes likely to be regulated

- http://bit.ly/fdb_premotif

How many kinase domain genes in *A.fumigatus*?

- How many kinases are there?

Gene expression

- How many genes are highly (e.g. 4x or 10x) upregulated in the RNA seq for Rhizopus oryzae between the tip (3Hr) and colony (20Hr)

- How many of these genes have orthologs in filamentous fungi (e.g. Neurospora, Magnaporthe)

Phylogenetic profiling

- How many genes are specific to the filamentous fungi Neurospora, Aspergillus but not found in yeast (C.albicans, S.cerevisiae)

Explore other sites

- Try using http://fungi.ensembl.org to explore Aspergillus genome data.

  - Can you count the number of kinase domains in A.nidulans?

  - Try using BioMart