

Bioinformatics - Course Overview

by Ahmet Sacan

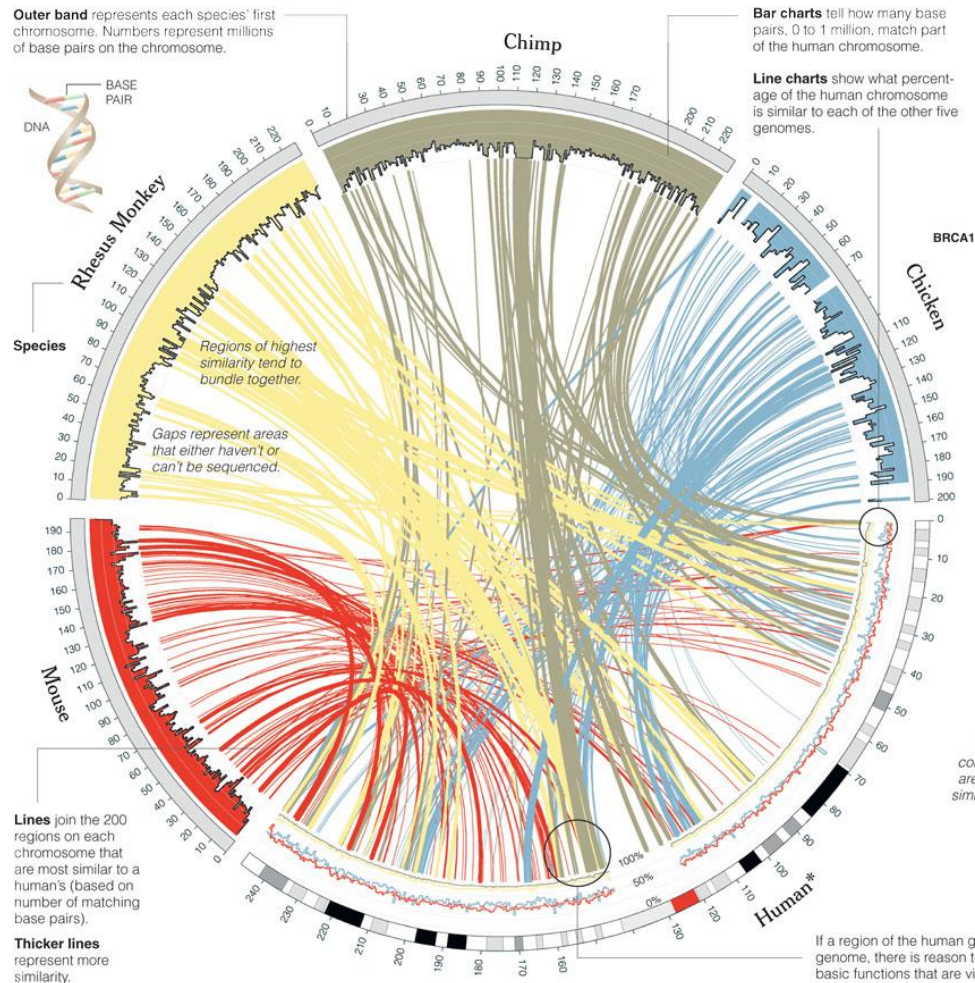
Course Content

- Sequence
- Phylogeny
- Structure
- Expression
- Pathways

What is Bioinformatics?

- Representation/storage/retrieval/analysis of "biological data":
 - sequence
 - structure
 - function
 - interaction
- Transfer of information from known to the unknown, based on similarity.
- Discovery of patterns in data.

What do these species have in common?



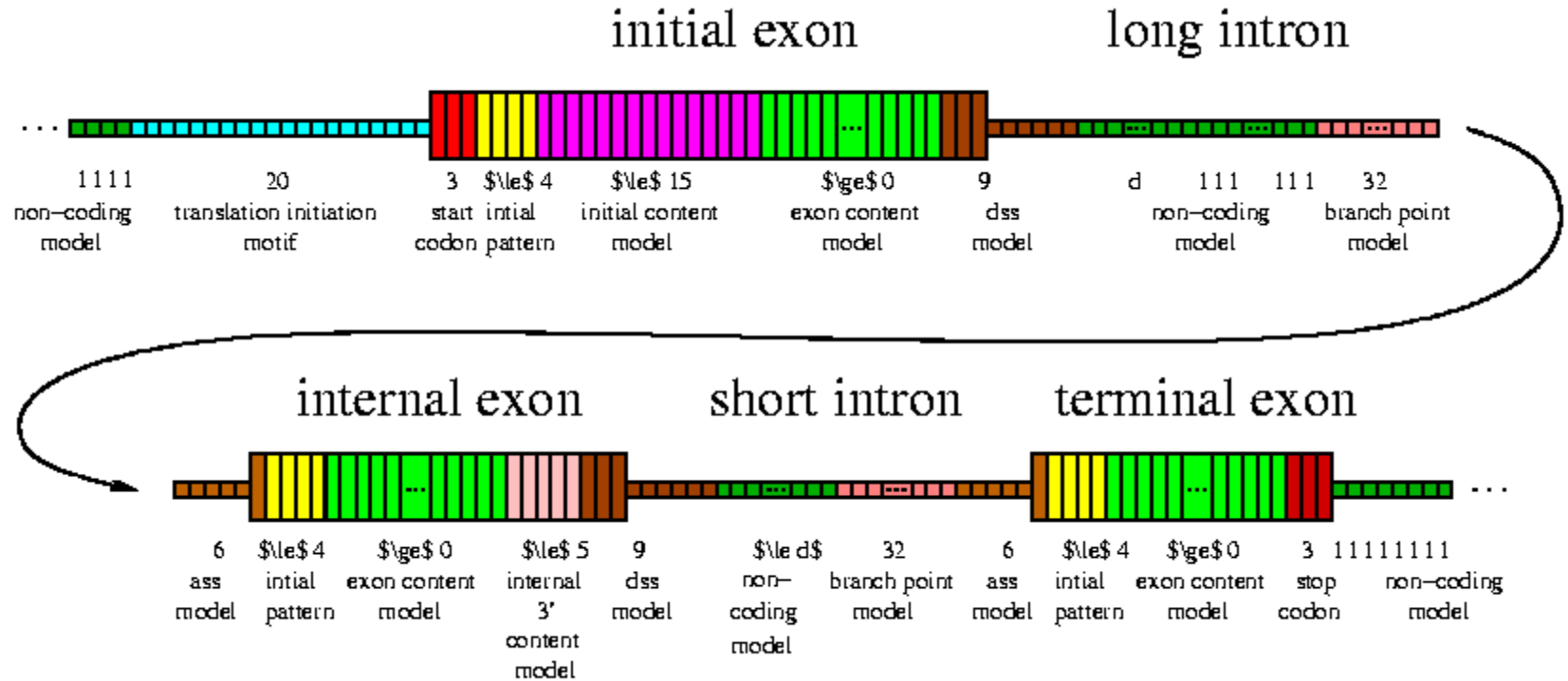
Source: Martin Krzywinski, Michael Smith Genome Sciences Center, Canada

*Length shown at 200% compared to other species. Shadings on outer band represent how

What genes does this organism have?

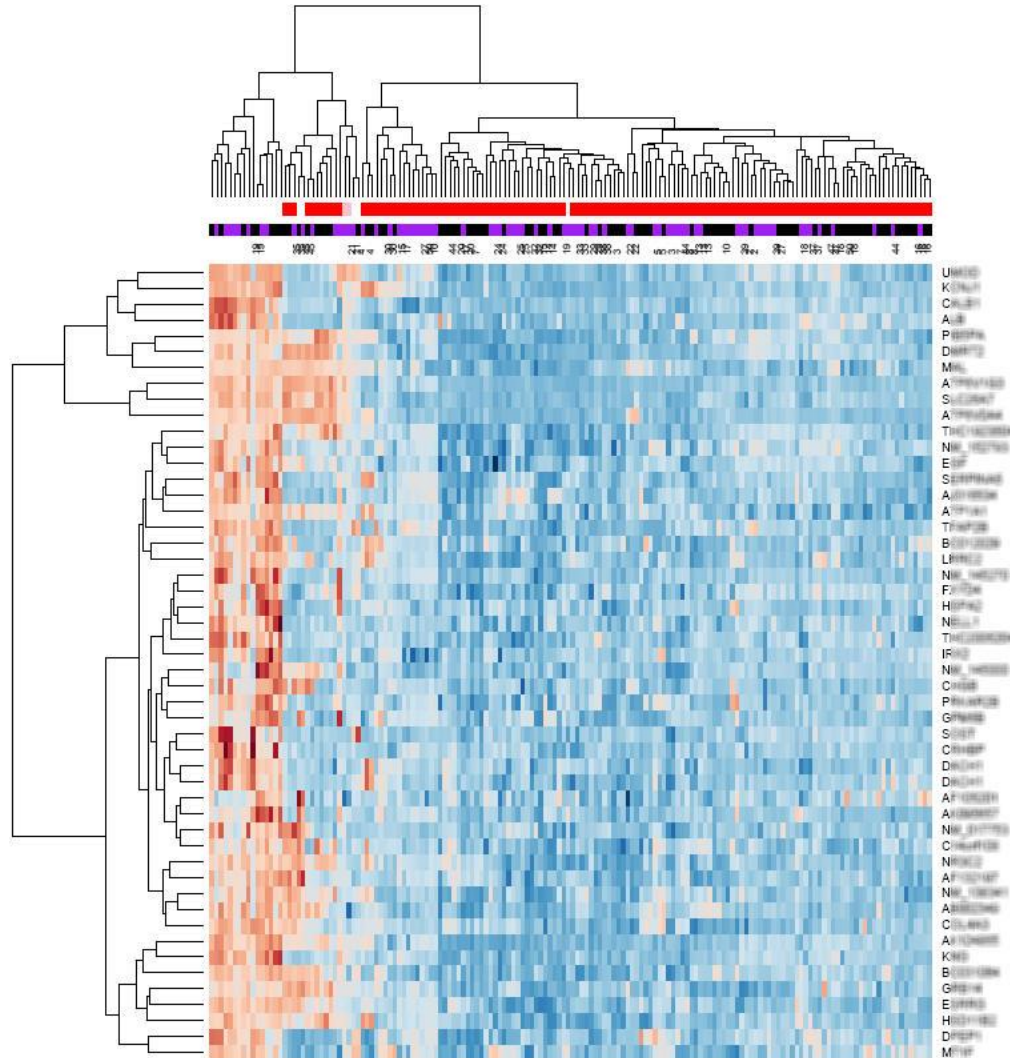


What does this gene do?



- Where does it go?
- What other proteins does it interact with?

Which genes are "responsible" for prostate cancer?



How can the biofuel production be optimized?

