Bioinformatics

CS300

Chapter 1:
Genetic disorders and Data

Spring 2021

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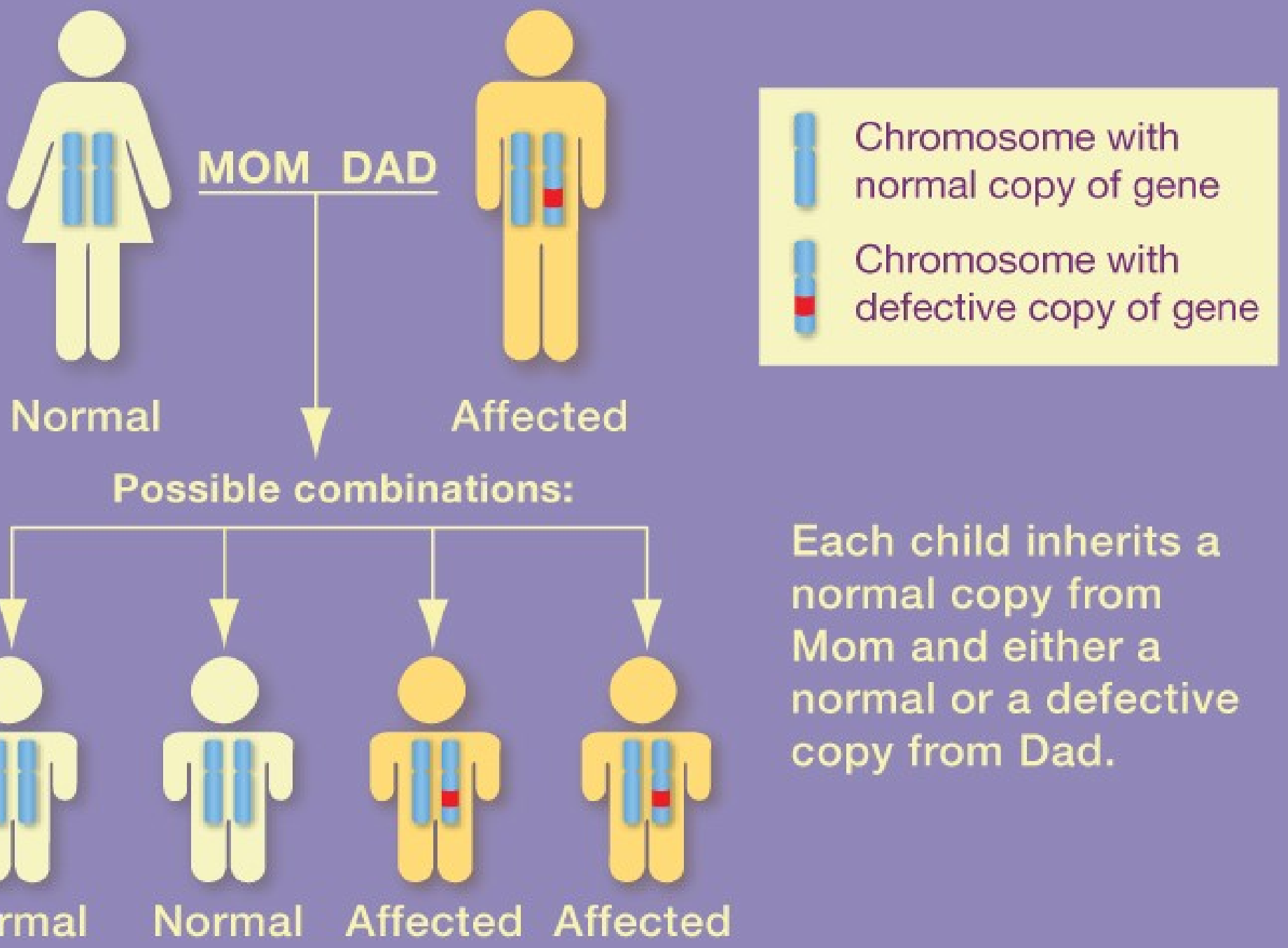
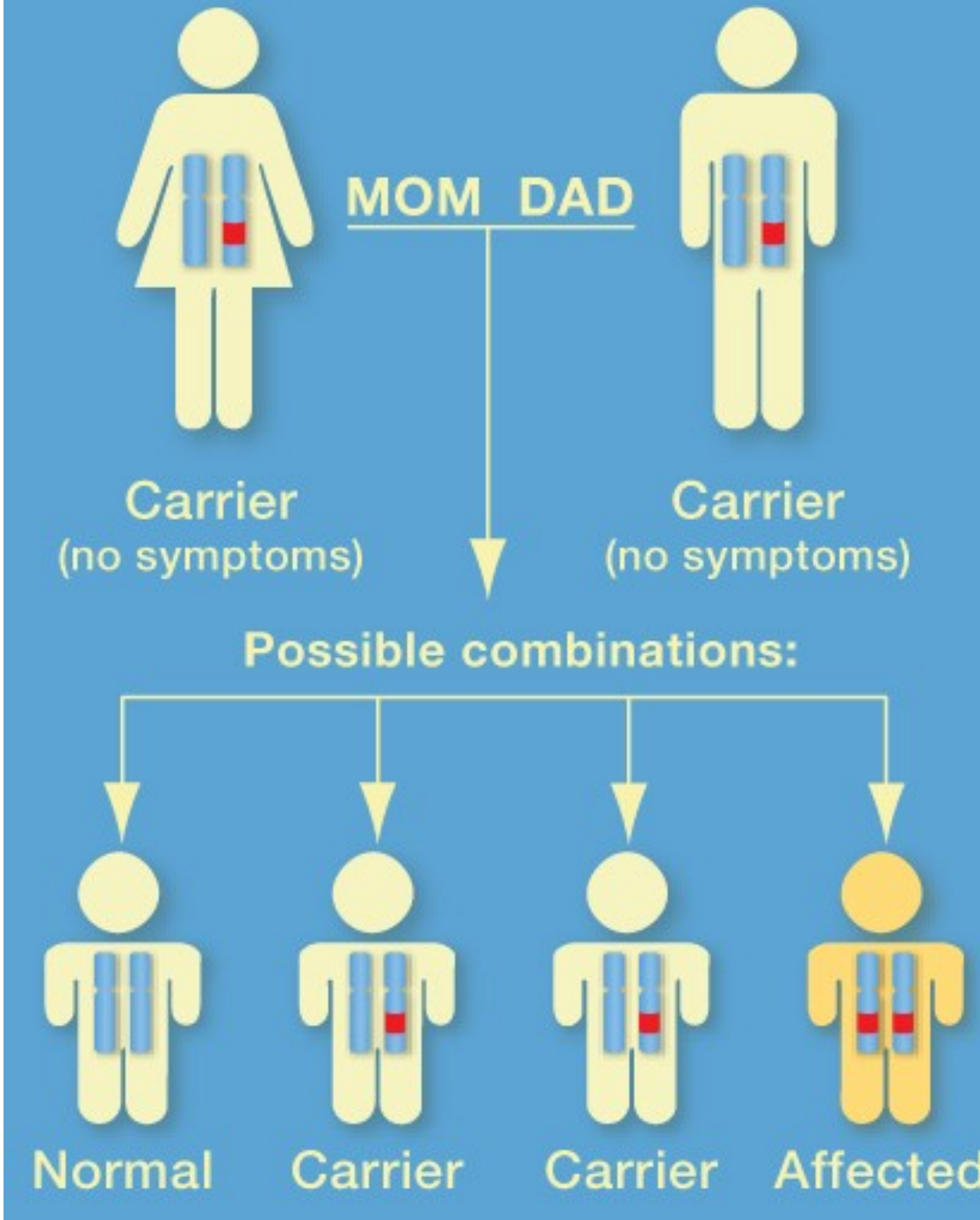
Where Do Some of These Mutations Come From?

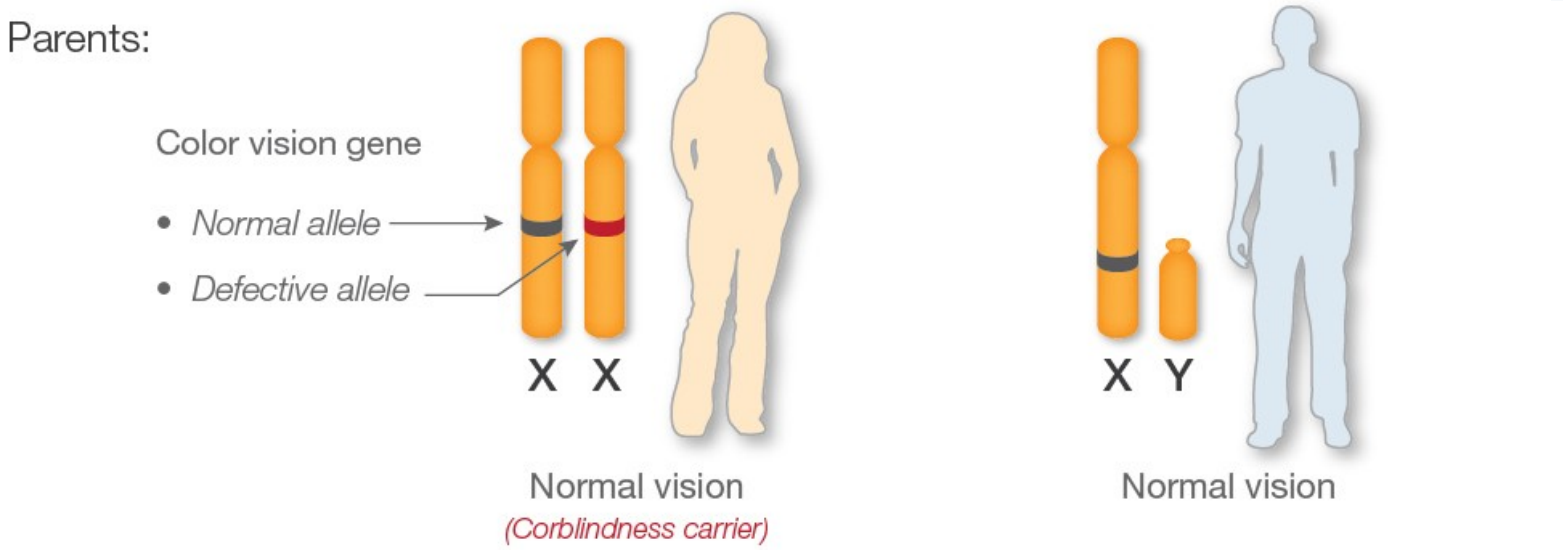
Autosomal Dominanant Inheritance

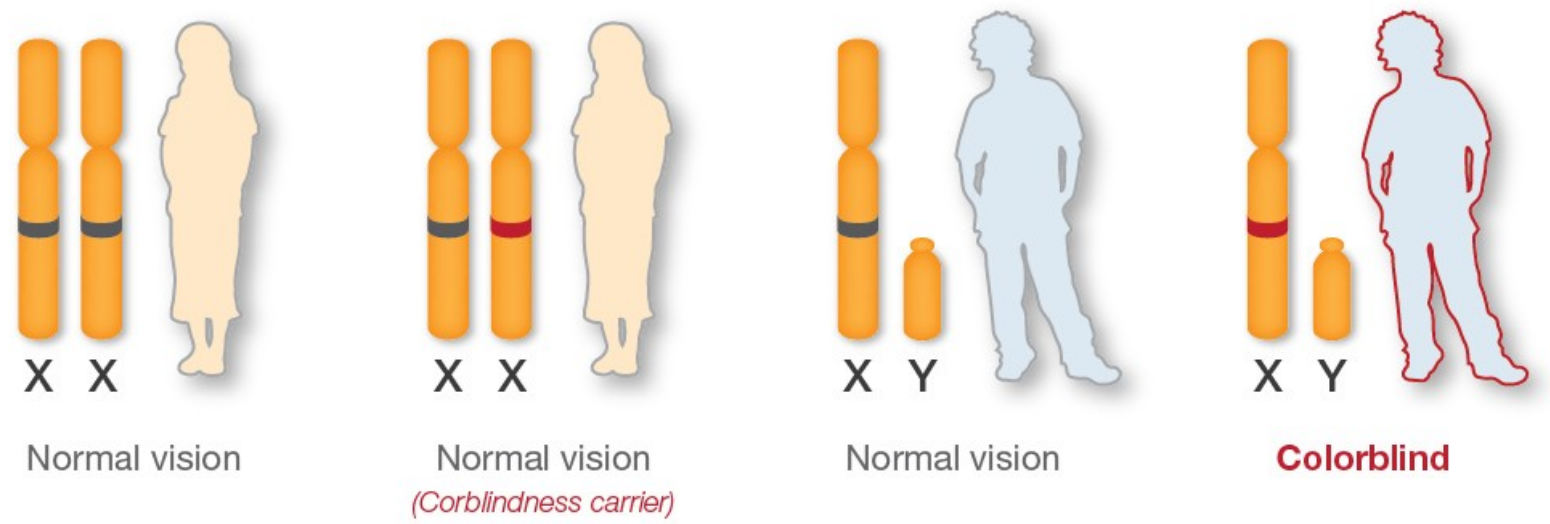


Autosomal Recessive Inheritance



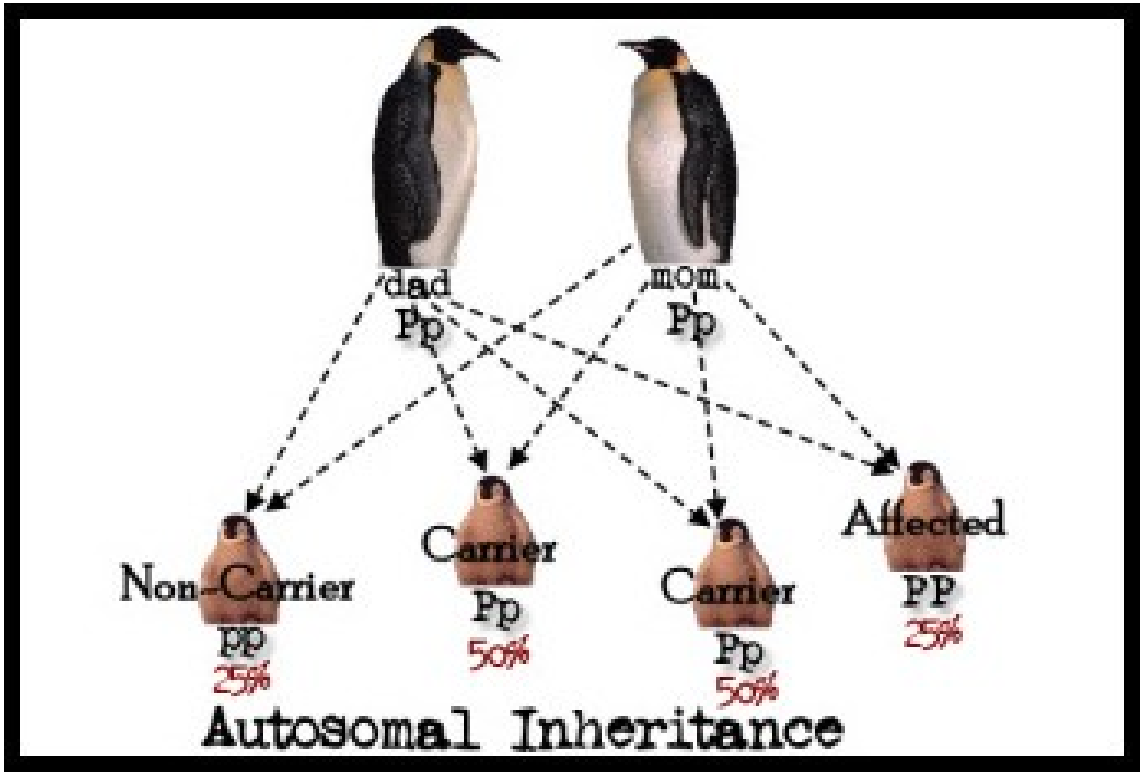
X-Linked Inharitance



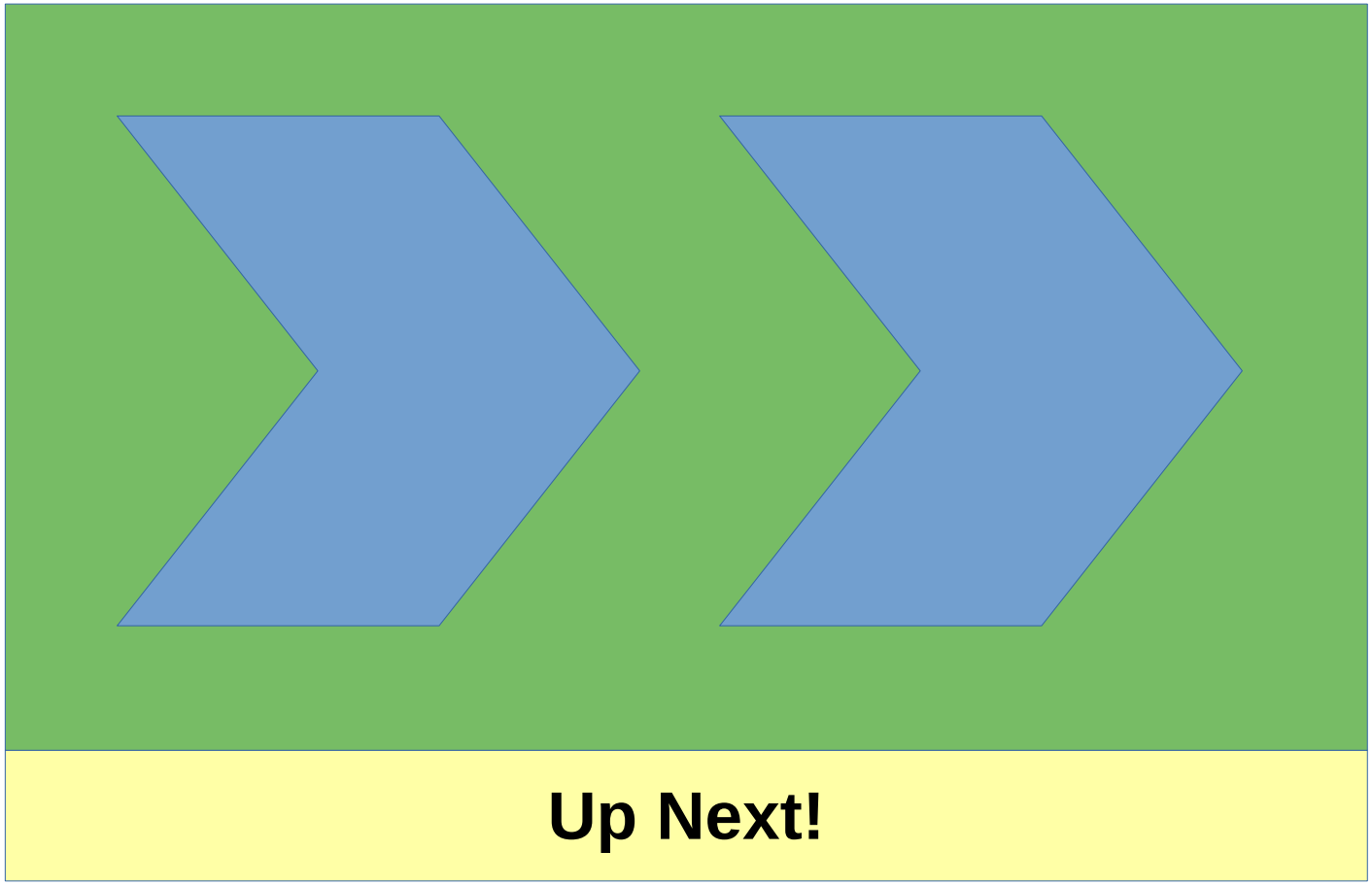


Single Gene Disorders

- Inheritance patterns are relatively simple
- Chances of inheritance in the text generation can be predicted by studying patterns in past generations.



Bring the Data!

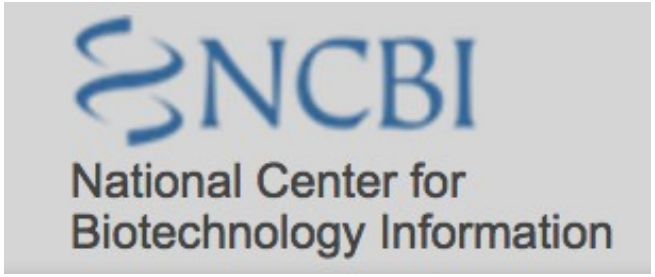


Up Next!

Sources of Data

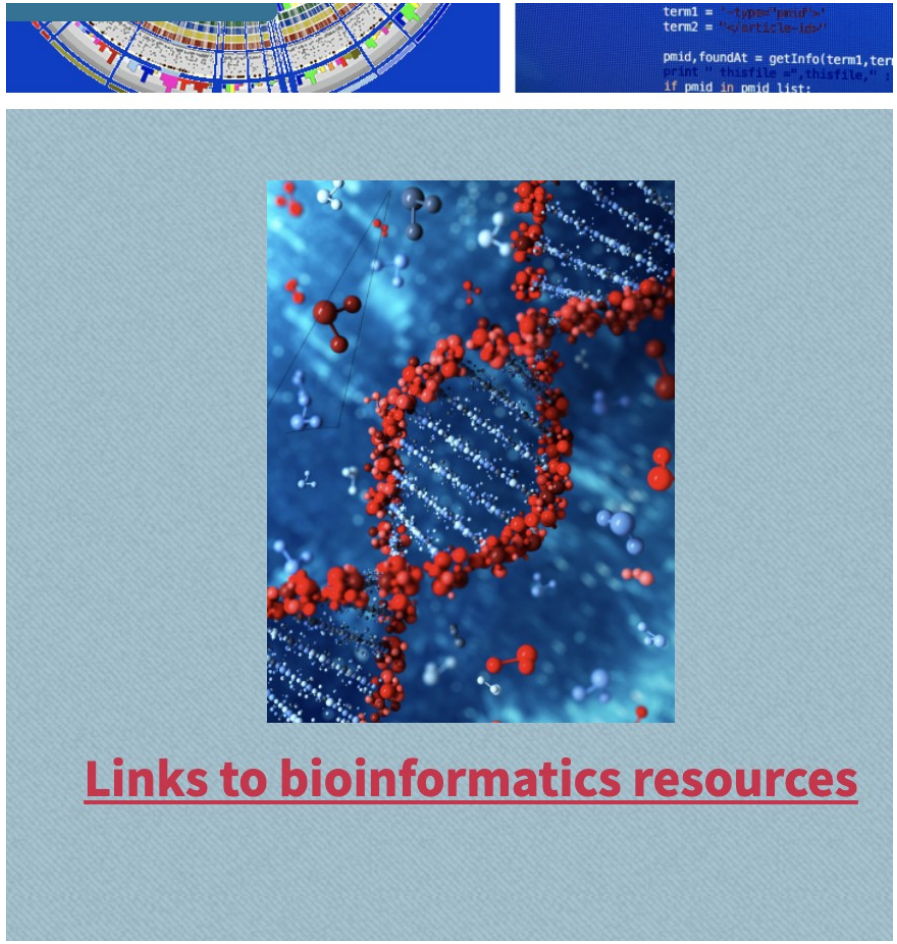
- Typically Protein: **Uniprot**
  - http://www.uniprot.org/
- Search: Pink1 (protein)

- Typically DNA and Genes: **National Center for Biotechnology Informatics (NCBI)**
  - https://www.ncbi.nlm.nih.gov/
- Search: “orchid” in Nucleotide database
  - (https://www.ncbi.nlm.nih.gov/nuccore/NC_030915.1)



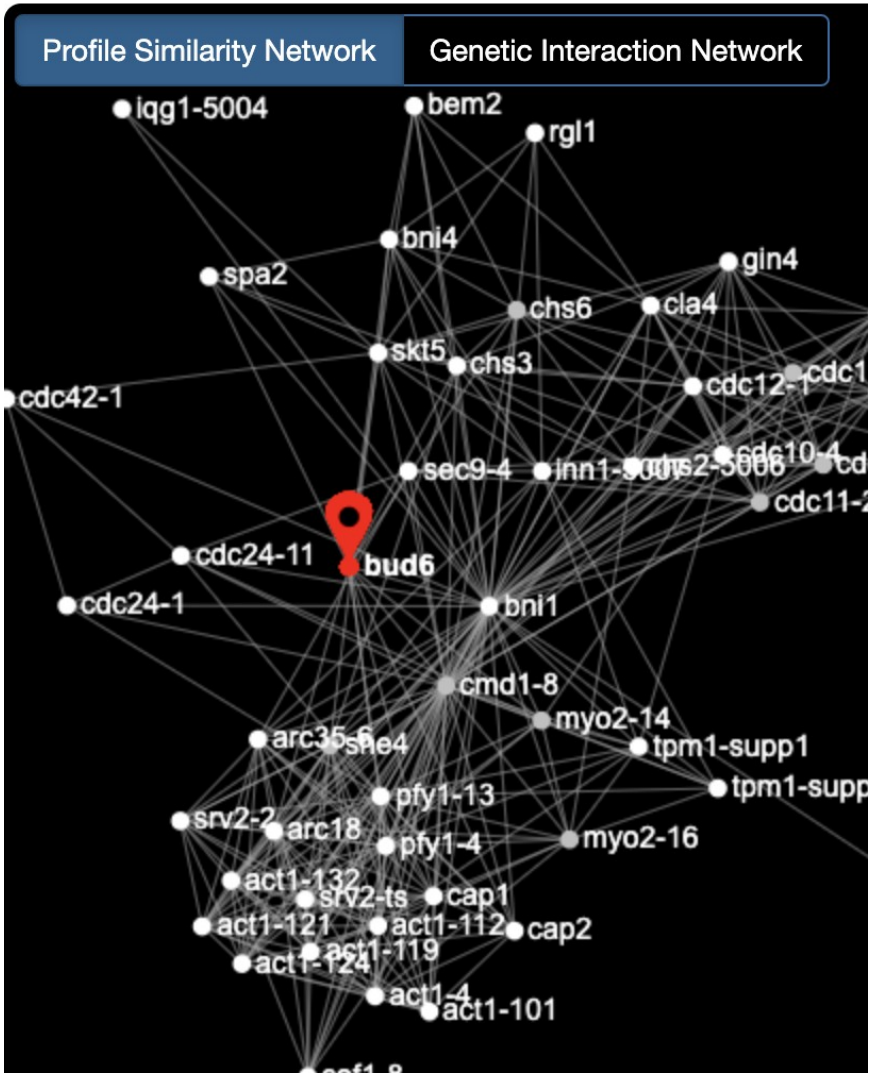
Let's Talk About It!

- Go to *Links to bioinformatics resources* at link https://www.cs.allegheny.edu/sites/obonhamcarter/bioinfo_i.html
- Find and pick an online database or analysis platform to investigate with your group
- Discuss the resources.
  - What use(s) does the resource have?



Let's Talk About It!

- Is data offered? Is it tools to work with data?
- Research interests?
- **Activity 4**: Complete the Google form; https://forms.gle/nKcJjcgG9gW9Z7ur6
- A check mark grade



Genetic Networks from the *Cell Map*