NextGenerationSequencing

Applications

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June 2020

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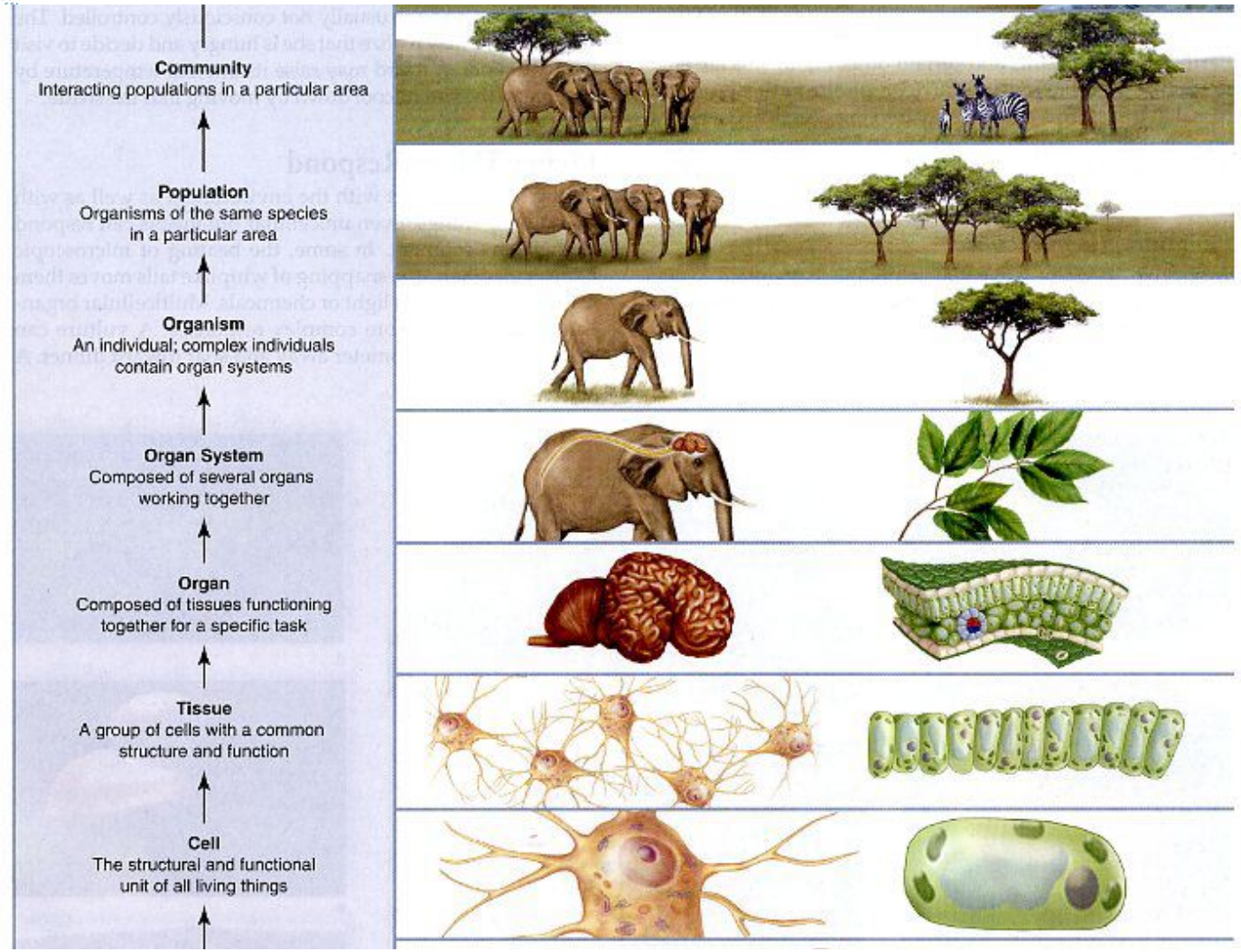
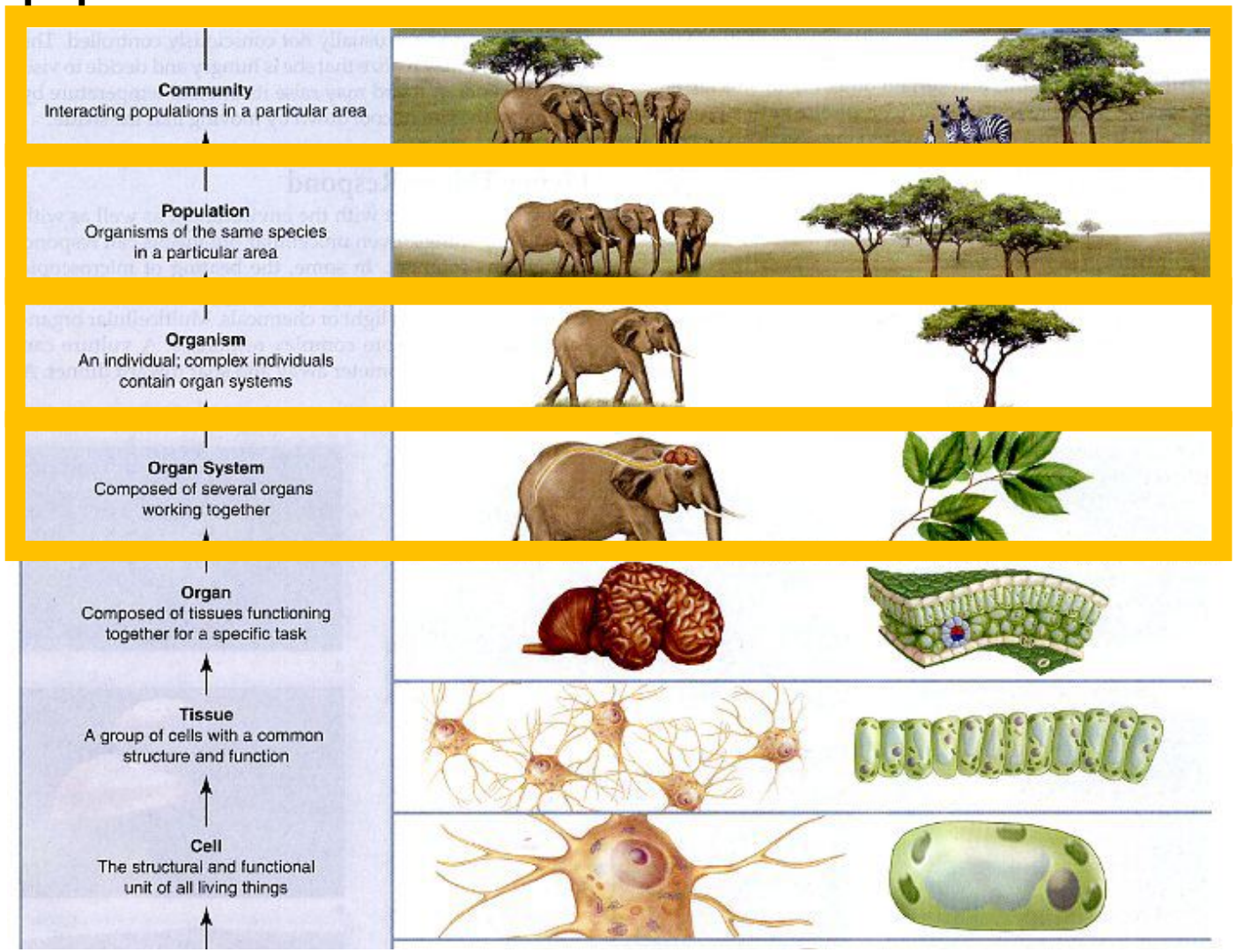
NGS applications

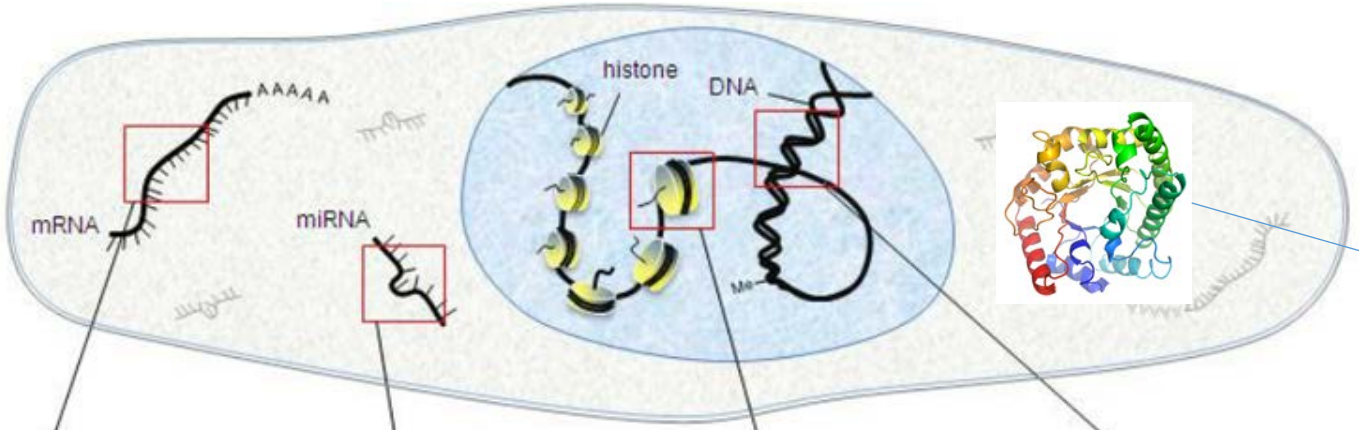


NGS applications



NGS applications

DNA -> RNA -> protein



Protein-Protein interactions

Transcriptomics

- gene expression analysis
- non-coding RNA analysis
- gene-fusion detection
- mRNA splice-analysis
- RNA editing

miRNomics

- expression analysis
- miRNA identification
- miRNA editing

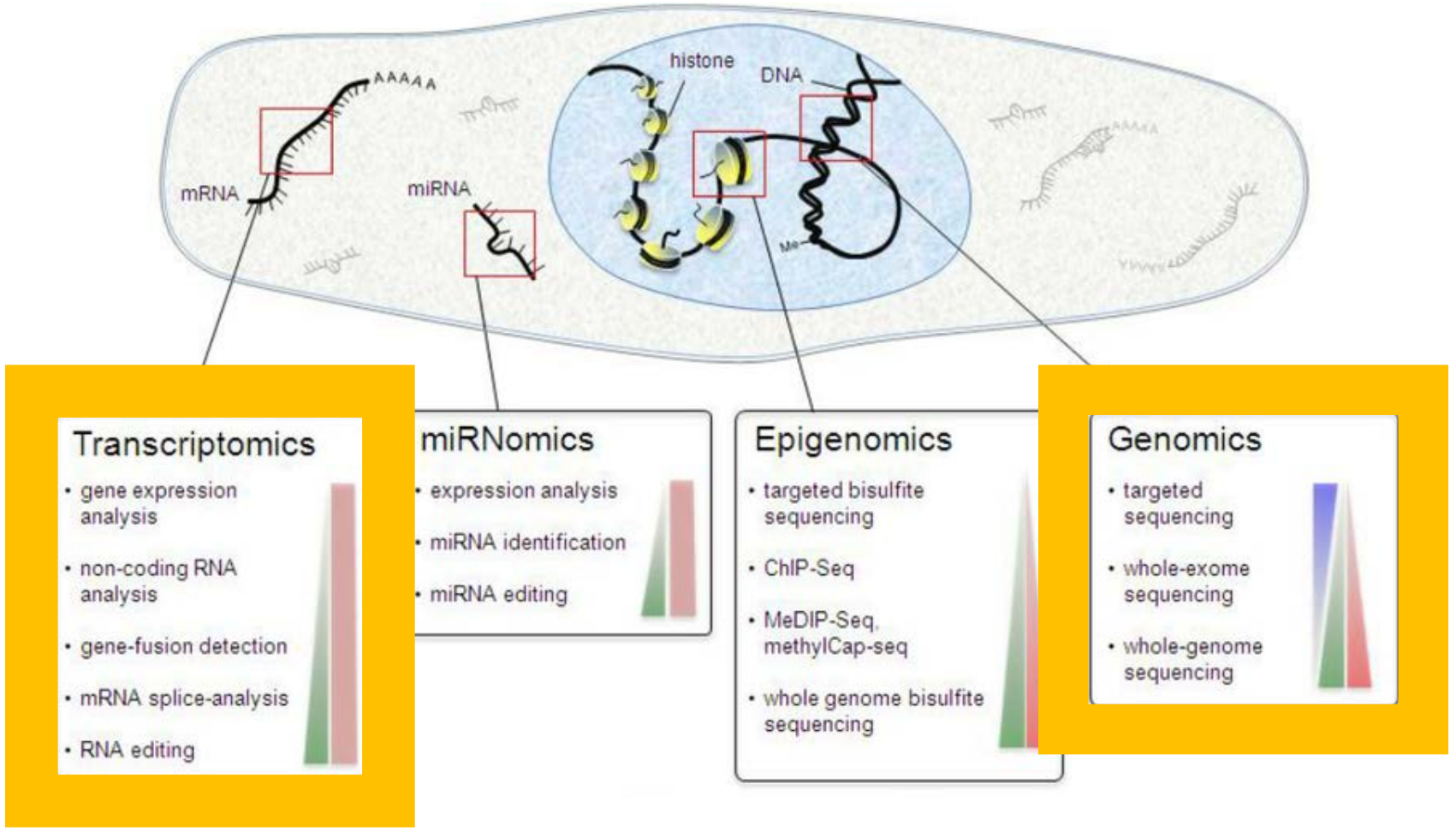
Epigenomics

- targeted bisulfite sequencing
- ChIP-Seq
- MeDIP-Seq, methylCap-seq
- whole genome bisulfite sequencing

Genomics

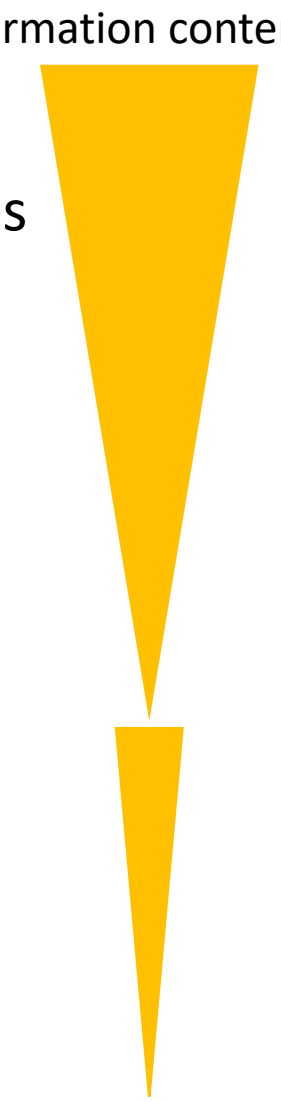
- targeted sequencing
- whole-exome sequencing
- whole-genome sequencing

NGS applications

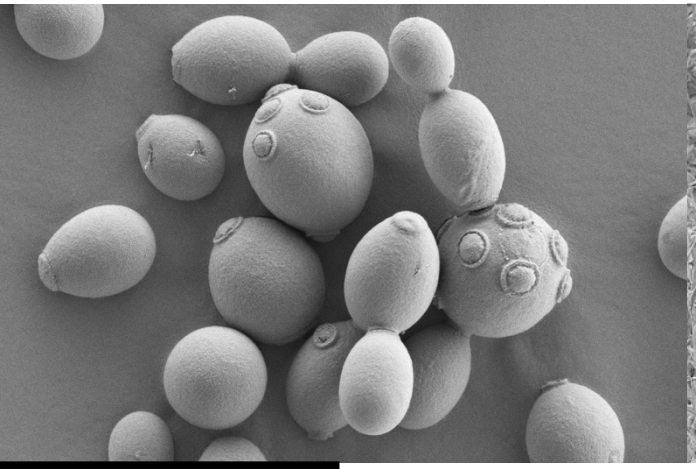


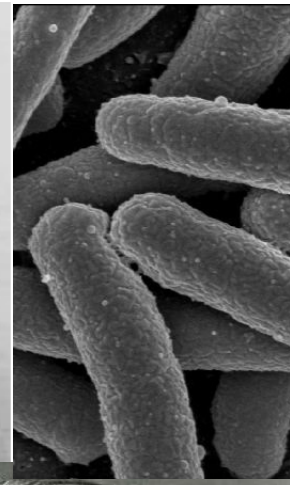
NGS applications/methods

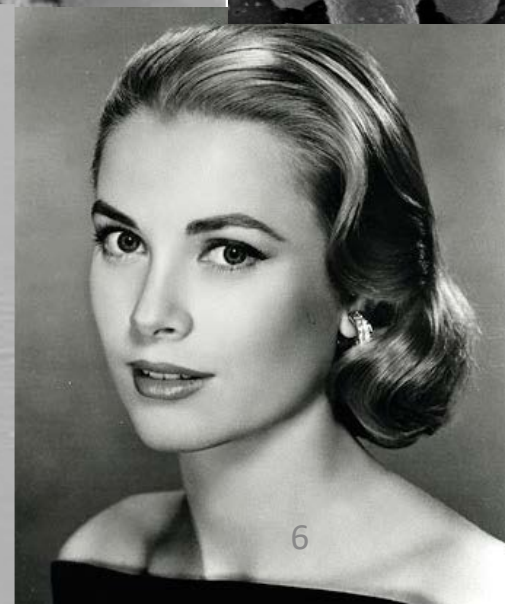
- Genomics
  - Metagenomics — e.g. screenings, functional analysis
  - DNAseq (WGS) — e.g. signature of selection, GWAS
  - Target enrichment sequencing
  - RNAseq — e.g. population genomics, GWAS
  - RADseq — e.g. population stucture
  - Ampseq — e.g. metabarcoding
- Transcriptomics
  - Metatranscriptomics — e.g. functional analysis
  - RNAseq — e.g. genome expresssion anylsis
  - Amplicon sequencing — e.g. expression anaylsis



Model organisms







Non-model organisms

Take home massage

- Nearly universal applicable
- Fastly developing
- Revolutionised genomics of non-model organisms
- Limitation in non-model organisms