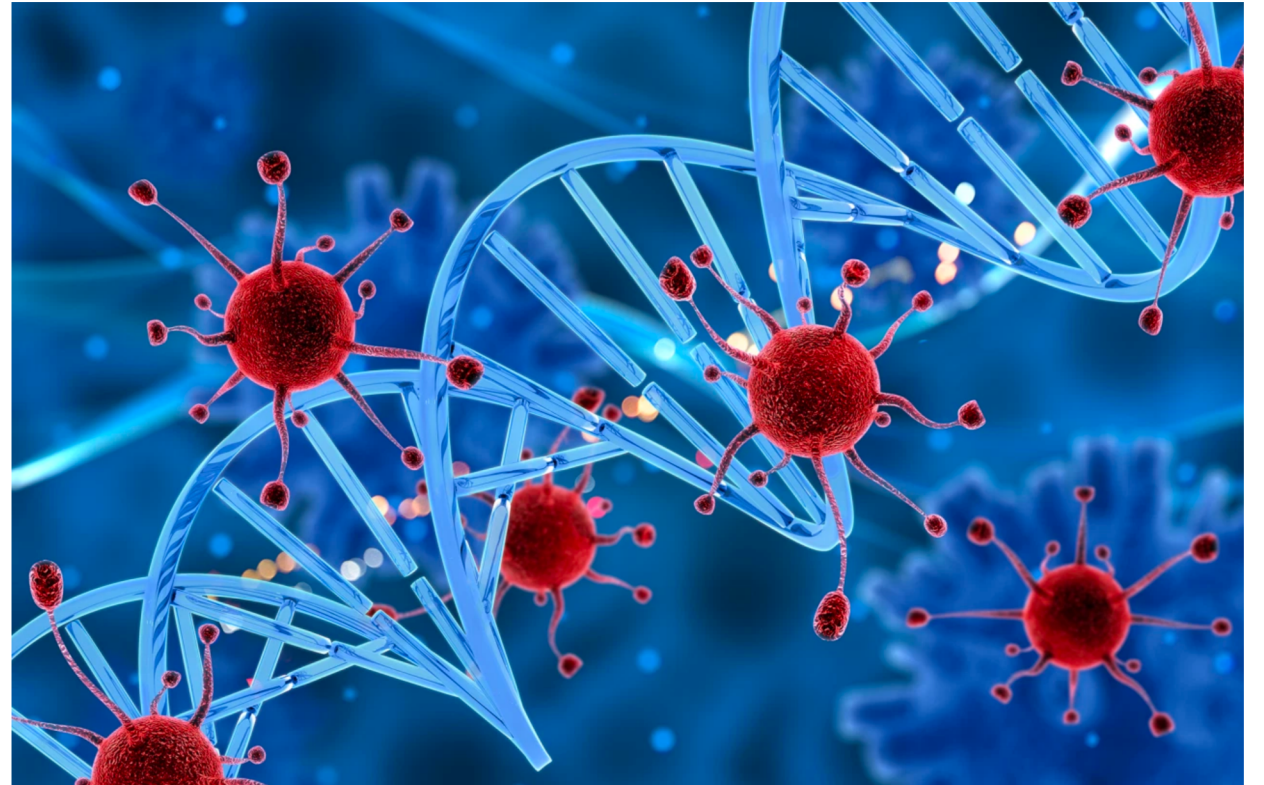
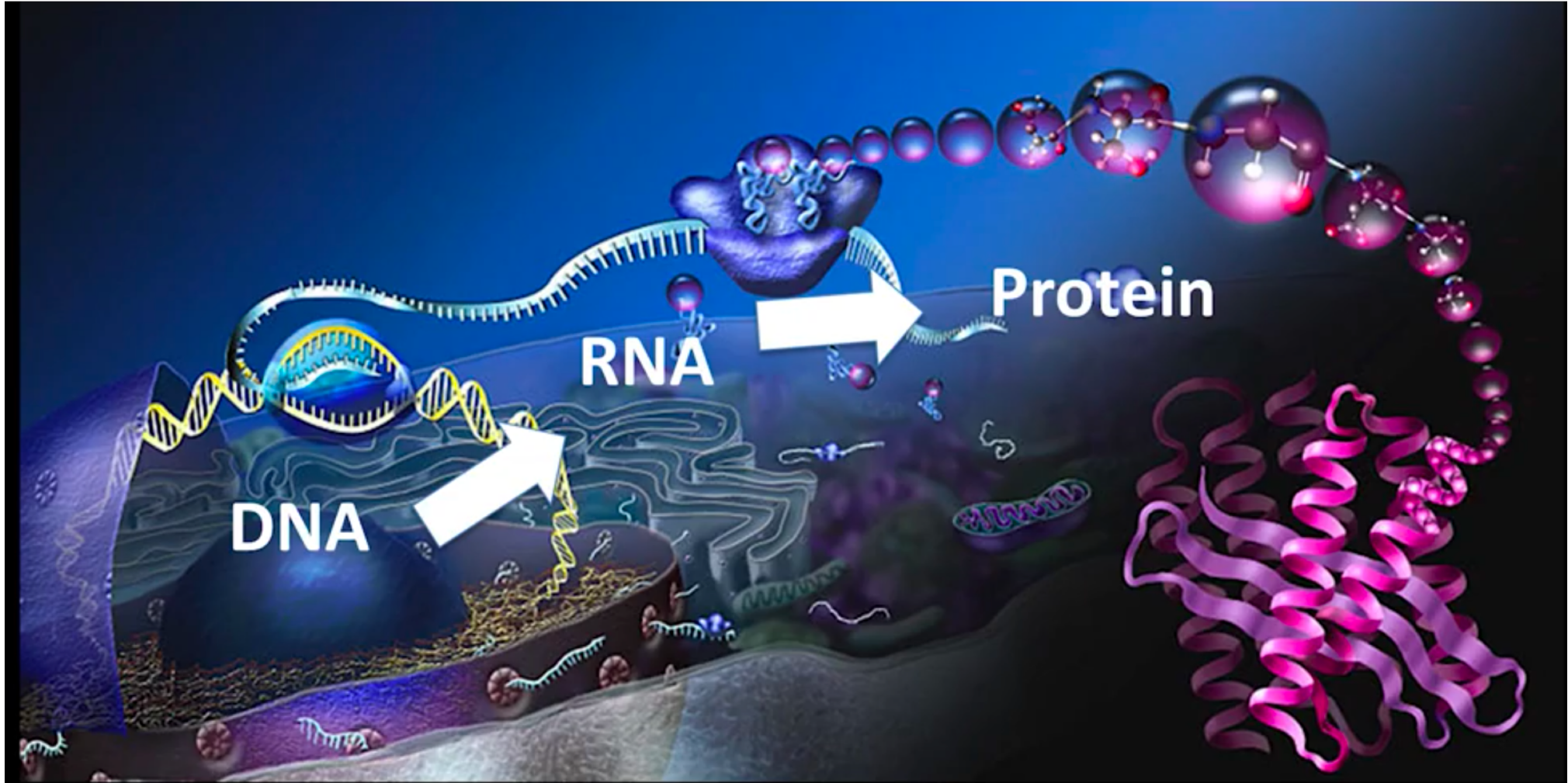


# Lesson 9

## Genes and DNA rules

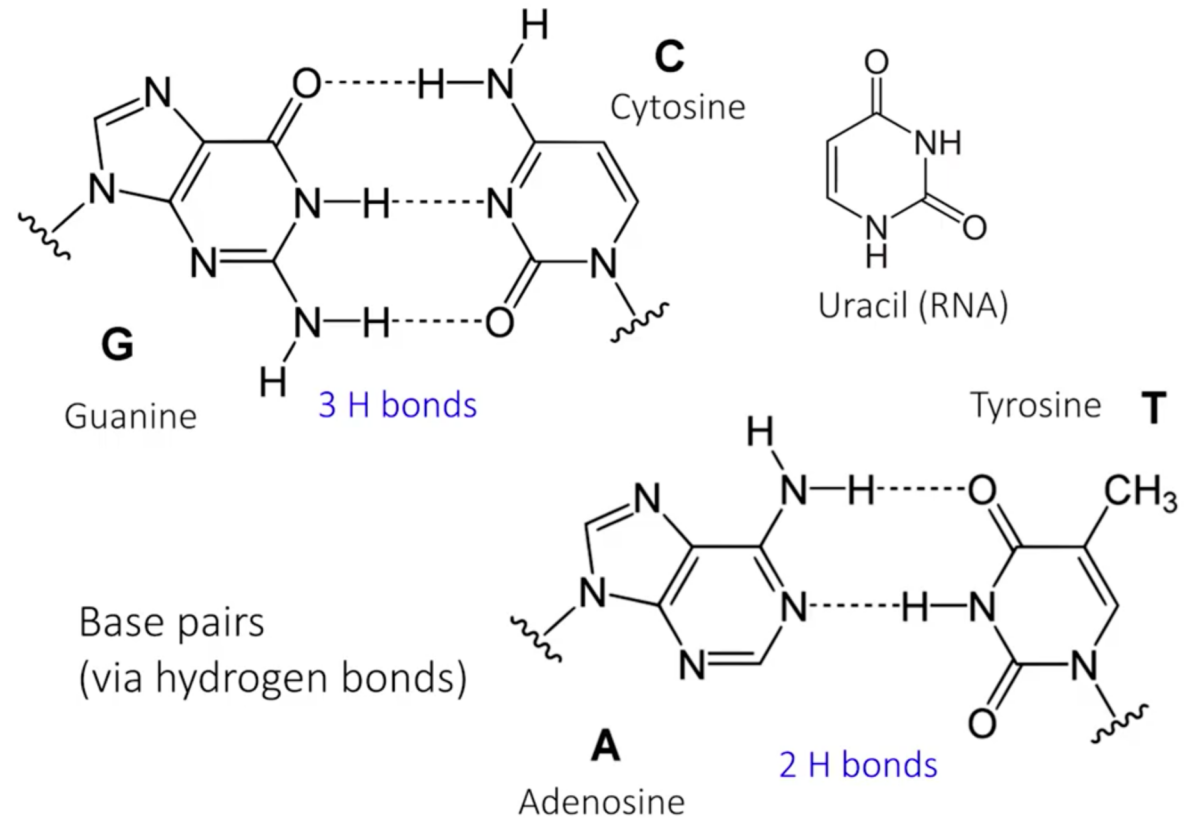


# The MB central dogma (information transfer)



# DNA rules

- DNA base pairing rule
  - **A** makes **2 hydrogen bonds** with **T**
  - **G** makes **3 hydrogen bonds** with **C**



# DNA rules

- DNA base pairing rule
  - A makes **2 hydrogen bonds** with T
  - G makes **3 hydrogen bonds** with C
- Base pairing is associated with **complementary DNA strands**

A A T C  
T T A G

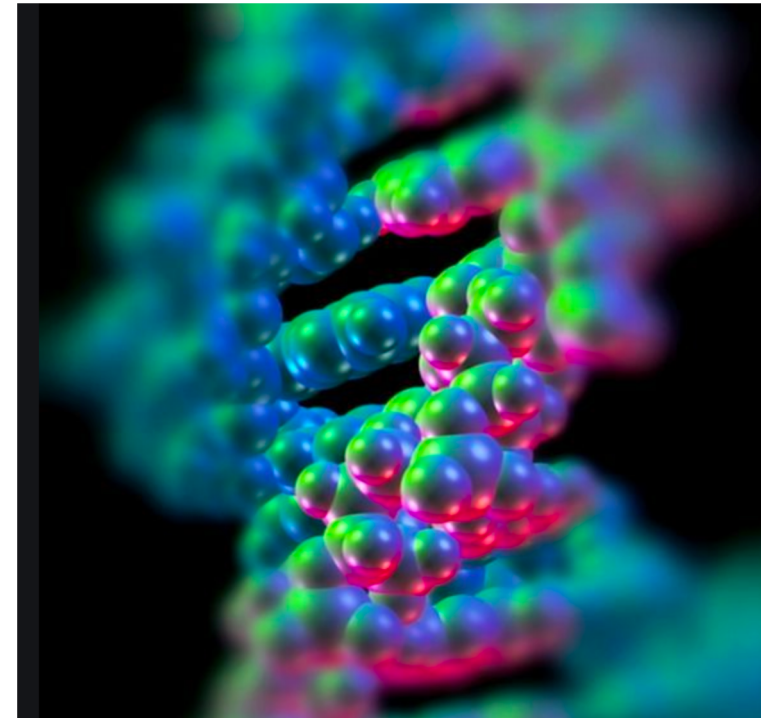
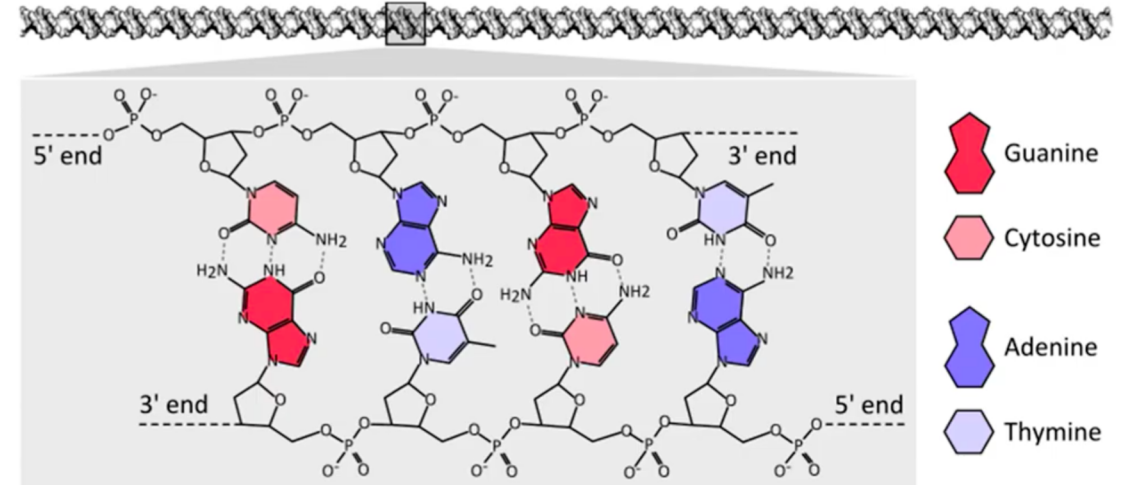
# DNA rules

- DNA base pairing rule
  - A makes **2 hydrogen bonds** with T
  - G makes **3 hydrogen bonds** with C
- Base pairing is associated with **complementary DNA strands**

5' A A T C 3'  
3' T T A G 5'

# DNA rules

- DNA base pairing rule
  - A makes **2 hydrogen bonds** with T
  - G makes **3 hydrogen bonds** with C
- Base pairing is associated with **complementarity**
- DNA is made of 2 complementary = **antiparallel** strands
  - Very stable double-helical structure

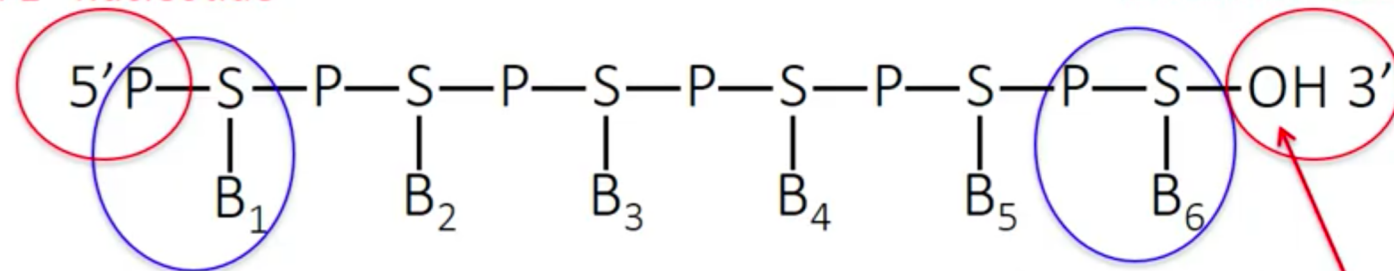


# DNA rules

- Reminder!

Nucleic acid: 3' OH end addition!

Free phosphate  
on 1<sup>st</sup> nucleotide



Free hydroxyl group  
on last nucleotide

1<sup>st</sup> nucleotide

Polymerization direction

last nucleotide

next nucleotide  
adds here

Polymer grows from 5' to 3'

# Genes and DNA rules

- Take assignment 9: **Genes and DNA rules**