**From Transcription → to Translation → to Proteins**

* Transcription – synthesis of RNA from DNA template
  + in the nucleus
  + DNA code converted into complimentary RNA code
  + 1st step in protein synthesis
  + mRNA produced from DNA
  + bases – A, C, G and U (instead of T)
  + 3-base segments = “triplets”
    - triplets – mRNA “codons”
    - determine which amino acids are used to synthesize the protein
    - 64 codons
      * some code for specific amino acids
      * the rest are “stop” or “start” codons
* Translation – synthesis of a protein from mRNA template
  + in the ribosome
  + mRNA code converted into amino acid sequence – “polypeptide”
  + multiple amino acid sequences = protein
    - tRNA has complimentary “anticodons”
    - anticodons bind with the mRNA codons
    - enables tRNA to transport correct amino acids to ribosomes
    - amino acids – building blocks of proteins
  + Ribosomes interpret mRNA codon information
  + tRNA aligns appropriate amino acids to build a complex protein
  + Protein synthesis stops when the ribosome encounters a stop codon

