

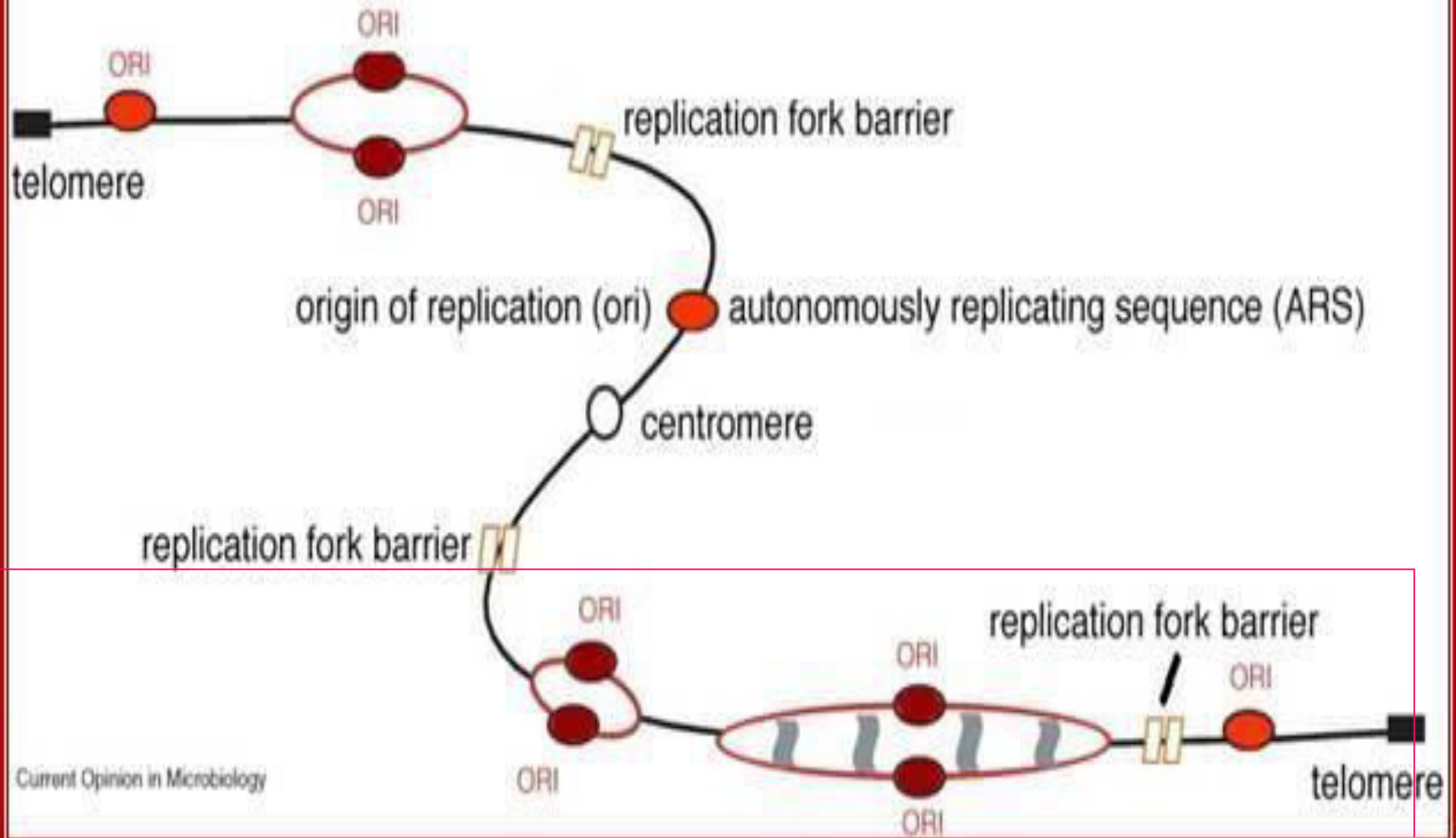


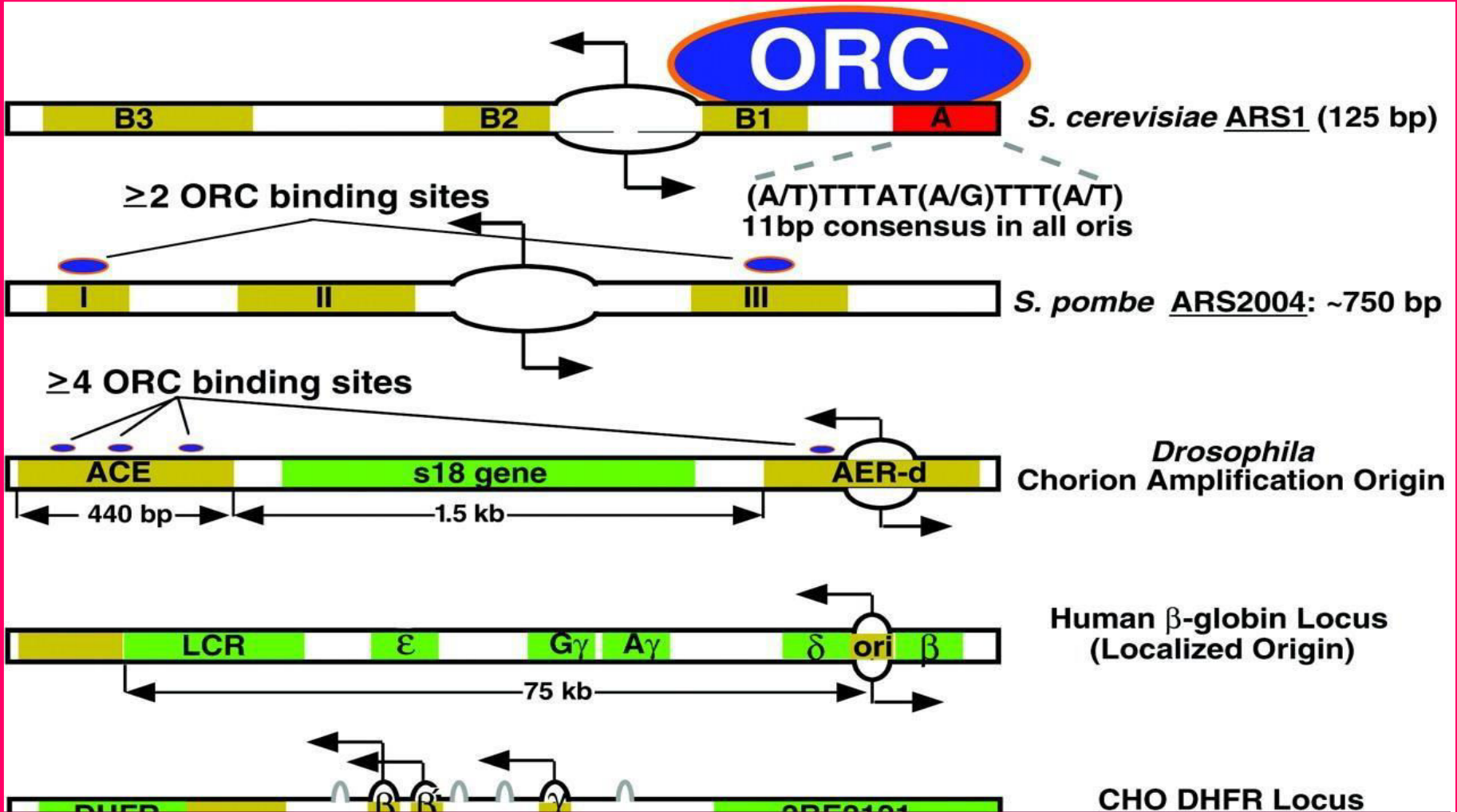
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FACULTY OF ENGINEERING & TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY

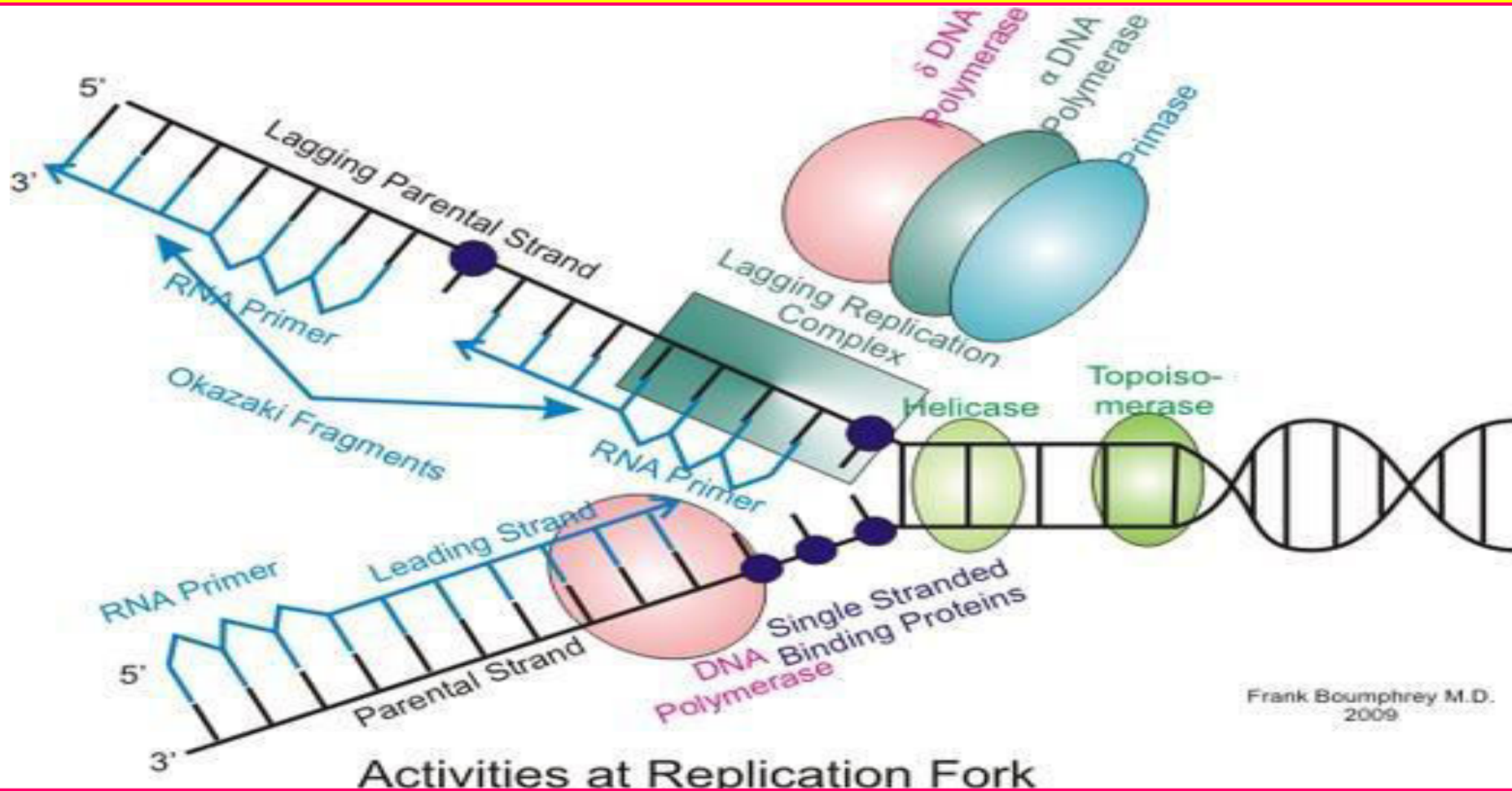
- In **Eukaryotic DNA Replication** occurs in the **S phase of the cell cycle**.
- Eukaryotic DNA Replication is bidirectional occurring at the multiple sites simultaneously .
- The **Replication origins** are present in **clusters** called **Replication units**. In human ,there are about 100 ori of replication consisting of 1000 base pairs each.
- Each **replicon** consist of replication bubbles with two replication forks moving in opposite directions. **Replication** continues until the replication bubbles merge together.
- **The mechanism is similar to that seen in prokaryotes.**
- There are 5 different types of DNA polymerases which catalyze replication and repair . (**Pol α** , **Pol β** , **Pol γ** , **Pol ϵ** , **Pol δ**)





- **Functions of proliferating cell nuclear antigen (PCNA):** PCNA binds to DNA polymerase δ (function similar to polymerase III of E.Coli). The binding of PCNA to polymerase δ , increases enzyme processivity and starts replicating long stretches of deoxyribonucleotides .
- This process is called **polymerase switching** because polymerase δ replaces polymerase α .





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2009

The mechanism of Eukaryotic DNA replication is similar to that seen in prokaryotes.

