Cell-Cycle Control, Cell Death, Cancer

The Cell-Cycle Control System
How are the orderly events of the cell cycle orchestrated? How do cells ensure all the steps of the cell cycle are taken in the right order?

The central control system and checkpoints

Cyclically activated protein kinases

Cyclins

MPF

The accumulation and destruction of cyclin

How CDK activities are regulated
Different cyclin-Cdk complexes trigger different steps in the cell cycle

Checkpoints

The anaphase checkpoint

Control of cell numbers in multicellular organisms
Cell proliferation depends on signals from other cells

Programmed cell death
How programmed cell death works
Cancer
Evidence that cancer is caused by mutations

How cancer-causing mutations arise

Proto-oncogenes, oncogenes, tumor-suppressor genes

Cancer generally involves multiple mutations