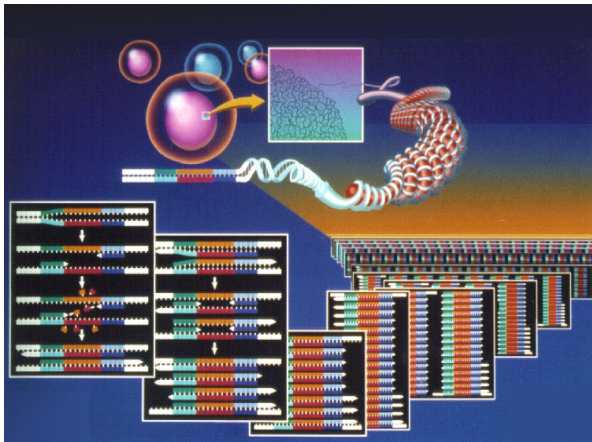


Overview:

- Introduction of students to basic principles of the polymerase chain reaction (PCR) technology and some of the applications in science.
- Students will amplify a variety of DNA and cDNA templates that they prepare themselves along with fun “forensic” DNA amplifications.



Lectures:

1. Introduction to PCR
2. Primer Design and Carry-Over Prevention
3. Optimizing PCR Reactions
4. Assymetric PCR and Cloning of PCR Products
5. Reverse Transcriptase PCR
6. Quantitative PCR Assays
7. QPCR Data Analysis

Labs:

1. Forensic PCR- DNA Fingerprinting and Circadian Rhythm Gene Amplification
2. Optimizing PCR Reactions and PCR-Based Genetic Markers
3. PCR Sequencing and SNP Detection
4. Reverse Transcriptase PCR and Melt Curve Analysis
5. Real-Time Quantitative PCR