

W204 GENOMIC AND PROTEOMIC TECHNOLOGIES AND THEIR RELEVANCE TO CLINICAL DIAGNOSTICS
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In this workshop, I will describe briefly the newest developments with the Human Genome Project and the evolution of new technologies, now known as "genomics and proteomics". Among these developments and technologies are included the complete annotation of the human genome (identifying the genes and their precise localization within the genome), the efforts to produce proteins from these genes in recombinant forms and the development of parallel assays that will scan the whole genome. Particularly, I will outline some major technologies, which have potential applicability to clinical diagnostics such as production of recombinant proteins, development of specific reagents (antibodies and other recognition probes), use of microarrays and mass spectrometry. It appears that the combination of powerful bioinformatics with high-throughput parallel information devices (like microarrays) and mass spectrometry will revolutionize the way we diagnose, prognose, monitor and treat human disease. Clinical Biochemists and other laboratorians should become familiar with these emerging technologies, which promise to change the face of current clinical diagnostics.

Objectives:

1. Update participants on the status of the Human Genome Project and the annotation effort;
2. Describe the principles of microarray devices;
3. Outline the principles of mass spectrometry for large molecules;
4. Describe how these high-throughput technologies are used to discover the new diagnostics of the future;
5. Integrate this information to underline that these technologies will be part of clinical diagnostic testing over the next 2-4 years.