Applied Biosystems

A History of Innovation in Genetic Analysis

1953
The molecular structure of the DNA molecule is discovered.

1972
The first gene is sequenced at the University of Ghent and the first recombinant DNA molecule is created by scientists at Stanford University.

1977
Teams at Harvard University and the U.K. Medical Research Council (MRC) independently develop methods for sequencing DNA. Frederick Sanger will later be awarded the Nobel Prize for his work.

1981
Applied Biosystems founded, and begins to provide innovative tools for the genetic gold rush.

1983
Kary B. Mullis develops the polymerase chain reaction (PCR), a technique that enables scientists to rapidly amplify DNA. He will receive the 1993 Nobel Prize in Chemistry for his accomplishment.

1984
Alec Jeffreys of the University of Leicester introduces technique for DNA finger-printing to identify individuals using RFLPs, enabling genetic fingerprinting to enter the courtroom the following year.

1986
Applied Biosystems commercializes the first automated DNA sequencer, Model 370A.

1989
The gene responsible for cystic fibrosis, one of the most common inherited diseases is identified.

1990
The Human Genome Project officially begins amid forecasts that the project could be completed in 15 years from its 1990 starting date, at a cost of US $3 billion.

1993
The Huntington disease gene is identified, ending the decade-long search.

1994
The first breast cancer gene, BRCA1, is discovered.

1995
The Flavr Savr tomato, the first genetically engineered food product, is approved for market. • Applied Biosystems introduces systems that automate and standardize DNA-based technology for forensic investigation. • DNA fingerprinting using PCR becomes accepted in court as reliable forensic evidence and is brought to public attention in the O.J. Simpson trial.

1997
"Dolly," a sheep, is the first mammal to be cloned from an adult.

1998
DNA sequencing becomes industrial scale with the launch of the ABI PRISM® 3700 DNA Analyzer, which would enable the Human Genome Project to be completed years ahead of schedule.

2000
At a White House ceremony, Human Genome Project and Celera leaders jointly announce their working drafts of the human genome sequence, which would be published the following year in *Science* and *Nature*.

2001
Applied Biosystems human identification technology is used to identify 9/11 World Trade Center victims.

2002
Applied Biosystems introduces the 3730 DNA Analyzer and the Applied Biosystems 3730*x*l DNA Analyzer, expected to improve data quality and increase productivity by a factor of two or more compared to current technology platforms. • NHGRI launches the International HapMap Project with the goal of mapping all of the common genetic variations in the human genome.

2003
Researchers sequence the severe acute respiratory syndrome (SARS) virus using Applied Biosystems DNA analyzers, enabling the rapid development of a diagnostic test and vaccine. • The 50th anniversary of the discovery of the DNA double helix is widely celebrated.

2004
Applied Biosystems teams with Northrop Grumman and Cepheid of Sunnyvale, California, to detect *Bacillus anthracis* during the anthrax contamination case of the U.S. Postal Service. • The finished human genome sequence is published, reducing the estimated number of human protein-coding genes from 35,000 to only 20,000-25,000.

2005
Applied Biosystems launches a global initiative to identify and track infectious diseases, starting with the "avian flu" strain of Influenza A Subtype H5N1. • The Genographic Project is launched: a five-year genetic anthropology study to map historical human migration patterns by collecting and analyzing DNA samples from hundreds of thousands of people across five continents.

2006
Applied Biosystems acquires Agencourt Personal Genomics, a private developer of next-generation sequencing technologies.

2007
Applied Biosystems launches the SOLiD™ System, its next-generation sequencing platform leveraging clonal cluster sequencing and other novel technologies to perform highly parallel sequential ligation reactions to generate four gigabases of mappable data per run.

Myriad scientific achievements in genomics, biotechnology, and much of today's understanding of molecular biology would not have been possible without DNA sequencing and genetic analysis technology. Here are a few highlights of these many advances and the discoveries that they enabled.