

MAJOR EVENTS IN THE U.S. HUMAN GENOME PROJECT AND RELATED PROGRAMS

1983

LANL and LLNL begin production of DNA clone (cosmid) libraries representing single chromosomes.

1984

DOE OHER and ICPEMC cosponsor Alta, Utah, conference highlighting the growing role of recombinant DNA technologies. OTA incorporates Alta proceedings into a 1986 report acknowledging value of human genome reference sequence.

1985

- * Robert Sinsheimer holds meeting on human genome sequencing at University of California, Santa Cruz.

At OHER, Charles DeLisi and David A. Smith commission the first Santa Fe conference to assess the feasibility of a Human Genome Initiative.

1986

Following the Santa Fe conference, DOE OHER announces Human Genome Initiative. With \$5.3 million, pilot projects begin at DOE national laboratories to develop critical resources and technologies.

1987

DOE advisory committee, HERAC, recommends a 15-year, multidisciplinary, scientific, and technological undertaking to map and sequence the human genome. DOE designates multidisciplinary human genome centers.

- * NIH NIGMS begins funding of genome projects.

1988

- * Reports by OTA and NAS NRC recommend concerted genome research program.

HUGO founded by scientists to coordinate efforts internationally.

- * First annual Cold Spring Harbor Laboratory meeting held on human genome mapping and sequencing.

DOE and NIH sign MOU outlining plans for cooperation on genome research.

Telomere (chromosome end) sequence having implications for aging and cancer research is identified at LANL.

1989

DNA STSs recommended to correlate diverse types of DNA clones.

DOE and NIH establish Joint ELSI Working Group.

1990

DOE and NIH present joint 5-year U.S. HGP plan to Congress. The 15-year project formally begins.

Projects begun to mark genes on chromosome maps as sites of mRNA expression.

R&D begun for efficient production of more stable, large-insert BACs.

1991

Human chromosome mapping data repository, GDB, established.

1992

- * Low-resolution genetic linkage map of entire human genome published.

Guidelines for data release and resource sharing announced by DOE and NIH.

1993

International IMAGE Consortium established to coordinate efficient mapping and sequencing of gene-representing cDNAs.

DOE-NIH Joint ELSI Working Group's Task Force on Genetic Information and Insurance releases recommendations.

DOE and NIH revise 5-year goals [*Science* 262, 43-46 (Oct. 1, 1993)].

- * French Généthon provides mega-YACs to the genome community.

IOM releases U.S. HGP-funded report, "Assessing Genetic Risks."

GRAIL sequence interpretation service with Internet access initiated at ORNL.

ADA	Americans with Disabilities Act
ANL	Argonne National Laboratory
BAC	bacterial artificial chromosome
cDNA	complementary deoxyribonucleic acid
CGAP	Cancer Genome Anatomy Project
DNA	deoxyribonucleic acid
DHHS	Department of Health and Human Services (NIH)
DOE	Department of Energy
EEOC	Equal Employment Opportunity Commission
ELSI	ethical, legal, and social issues
GDB	Genome Database
GRAIL	Gene Recognition and Analysis Internet Link
HERAC	Health and Environmental Research Advisory Committee
HGP	Human Genome Project, Human Genome Program
HUGO	Human Genome Organisation
ICPEMC	International Commission for Protection Against Environmental Mutagens and Carcinogens
IMAGE	Integrated Molecular Analysis of Gene Expression
IOM	Institute of Medicine (NAS)