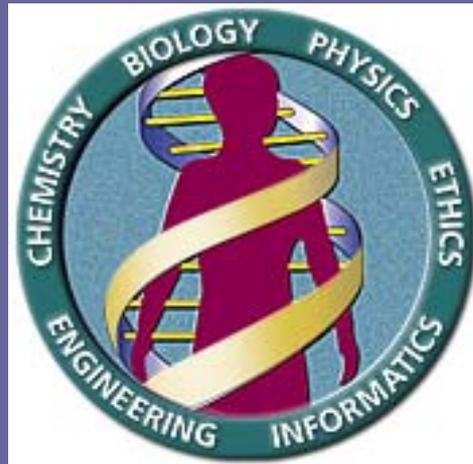


# The Human Genome Project



# What is the Human Genome Project?

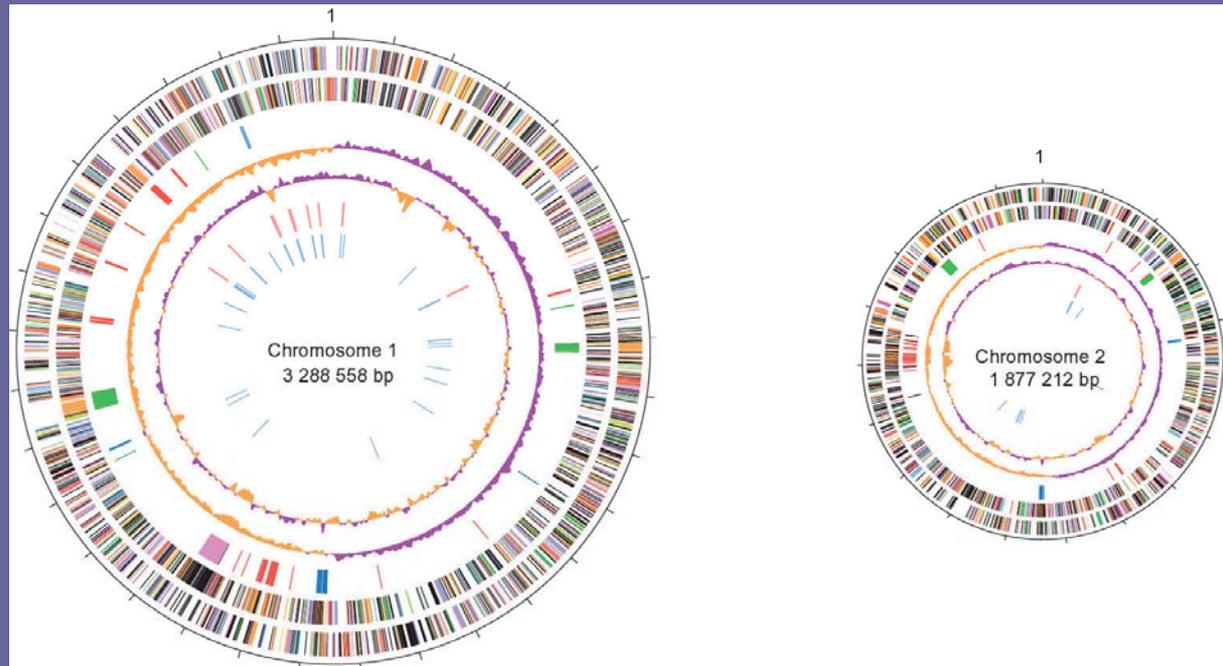
- U.S. govt. project coordinated by the Department of Energy and the National Institutes of Health, launched in 1986 by Charles DeLisi.

Definition: GENOME – the whole hereditary information of an organism that is encoded in the DNA.

- Aims of the project:
  - to identify the approximate 100,000 genes in the human DNA.
  - determine the sequences of the 3 billion bases that make up human DNA.
  - store this information in databases.
  - develop tools for data analysis.
  - address the ethical, legal, and social issues that arise from genome research.

# Whose genome is being sequenced?

- the first reference genome is a composite genome from several different people.
- generated from 10-20 primary samples taken from numerous anonymous donors across racial and ethnic groups.



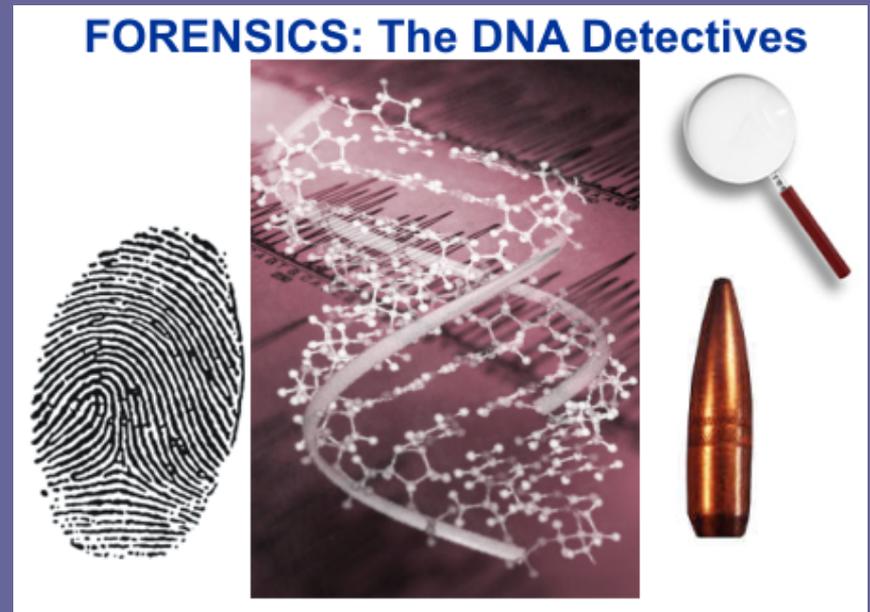
# Benefits of Human Genome Project research

- improvements in medicine.
- microbial genome research for fuel and environmental cleanup.
- DNA forensics.
- improved agriculture and livestock.
- better understanding of evolution and human migration.
- more accurate risk assessment.



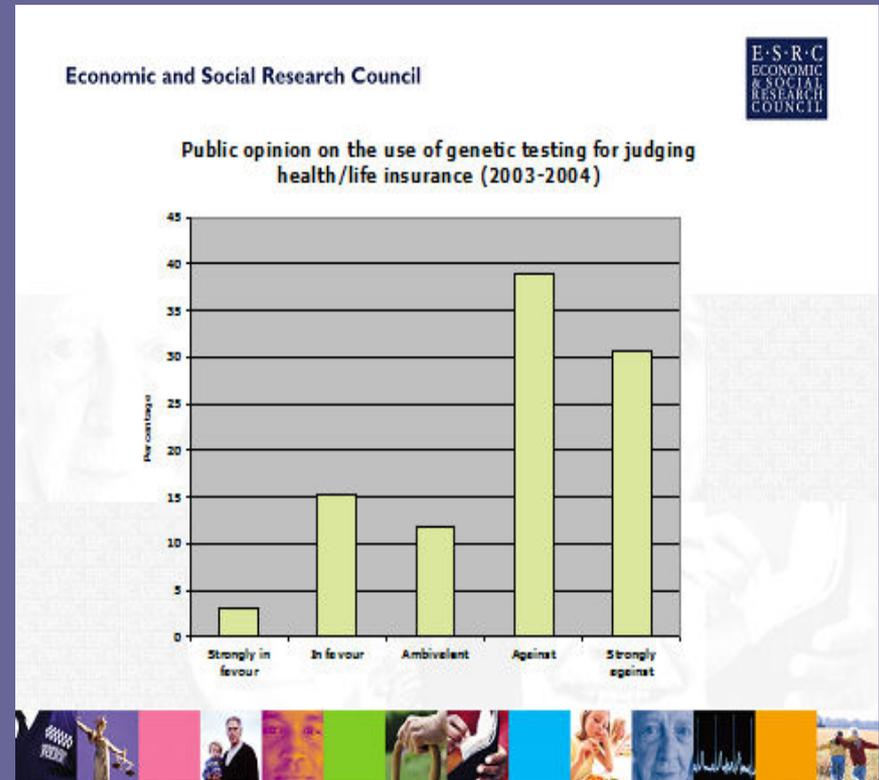
# How is each area benefited specifically by the Human Genome Project?

- Improvements in medicine: improved diagnosis of disease.
- Microbial research: new energy sources, bio fuels.
- DNA forensics: identifying potential suspects at a crime scene.
- Agriculture: more nutritious produce.
- Evolution and human migration: study migration of different population groups based on female genetic inheritance.
- Risk assessment: reduce the likelihood of heritable mutations.



# Ethical, legal and social implications of the Human Genome Project

- fairness in the use of genetic information.
- privacy and confidentiality.
- psychological impact and stigmatization.
- genetic testing.
- reproductive issues.
- education, standards, and quality control.
- commercialization.
- conceptual and philosophical implications.



# What are the implications of the Human Genome Project specifically to each of these areas?

Some questions to consider:

- Fairness and privacy: who should have access to your genetic information?
- Psychological stigmatization: how does knowing your predisposition to disease affect an individual?
- Genetic testing: should screening be done when there is no treatment available?

Some other issues:

- Reproductive issues: use of genetic information in decision making.
- Clinical issues: implementation of standards and quality control measures in testing procedures.



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