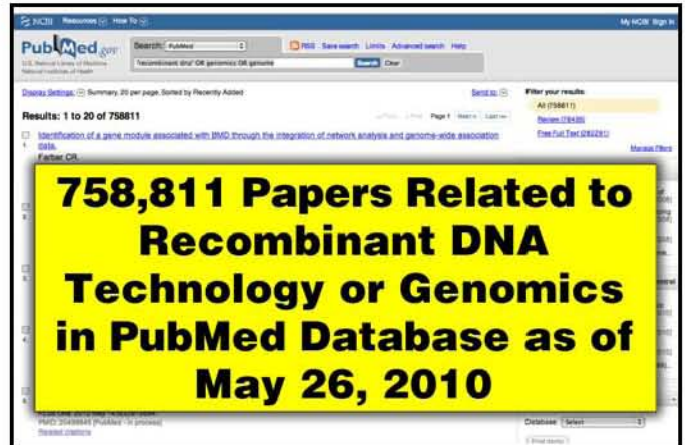


Examples of NIH-Supported Genomics and Related Research

- Sequencing of the human genome
- Sequencing of thousands of bacteria, viruses, and other microbes
- Studies of the human microbiome
- Use of recombinant DNA technology for medical interventions such as drugs and vaccines
- Other research — bioinformatics, proteomics, systems biology



Genomics → Synthetic Biology

Sequence of existing genomes

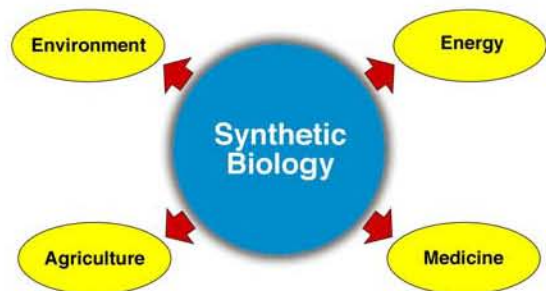
Synthesis of genes/genome fragments from naturally occurring blueprint

Insertion of genes/genome fragments into vectors (i.e., recombinant DNA technology)

Synthesis of whole genome from naturally occurring blueprint

Synthesis of genes and genome using novel blueprint

Potential Applications of Synthetic Biology



Review and Oversight

- Recombinant DNA Advisory Committee (RAC)
- National Science Advisory Board for Biosecurity (NSABB)
- President's Commission for the Study of Bioethical Issues
- Others to be determined

A Culture of Responsibility

Fostering/
Enabling
Scientific
Research and
Innovation

Preventing
Dangerous
Uses of
Technology

