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The US Department of Energy's Joint Genome Institute Microbial Sequencing Program.

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The U.S. Department of Energy (DOE) established the Microbial Genome Program in 1994. A principal goal of this project is to determine the complete genome sequence of a number of microbes that may be useful to DOE in carrying out its missions (including to produce energy sources, sequester excess atmospheric carbon affecting global climate, and to clean up contaminated environments).

Within the framework of the Microbial Genome Program over 50 genomes have been draft sequenced at the Joint Genome Institute. These genomes, as well as 5 finished ones are available at http://www.jgi.doe.gov/JGI_microbial/html/index.html. These pages contain background and collaborator information for each microbe, genome browsers, blast pages, assembly statistics, and a sequence download ftp site that is freely available for government, academic, medical, and industrial scientists. Many of these microbes have been sequenced in response to a DOE "Request for Suggestions" (<http://www.sc.doe.gov/ober/microbial.html>), a program where individual researchers may propose specific microbes for genome sequencing projects at the JGI.

Large-scale sequencing of entire microbial genomes has opened a new era in biology, but the greatest challenge will be to define gene function and complex regulatory networks at the whole-genome level. DOE's Genomes to Life program will use DNA sequences from microbes and higher organisms to study the essential processes of living systems. Advanced technological and computational resources will help to identify and understand the underlying mechanisms that enable organisms to develop, survive, carry out their normal functions, and reproduce under myriad environmental conditions.

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