initiative, deriving from the fact that with so many investigators using genetic approaches to explore the biological wilderness, it is time to build some roads. The study of DNA structure does unapologetically promise reductionist explanations of some biological phenomena, tracing causes of disease, for example, to mutations in identified genes — that is, identifiable changes in DNA structure that affect biological function. This should not be confused, however, with a simplistic genetic determinism, with all its historical and political baggage. Indeed, the study of a wider variety of genes, diseases, and biological functions will surely dispel the simple-minded renditions of gene function, overwhelming it with myriad concrete examples of biological complexity that defy explanation by linear causal chains. Genes will nonetheless be nodes in many of the causal networks of interesting biological phenomena, and determining DNA structure is one of the surest and fastest ways to probe those networks. Gene maps are essential to this process; the genome project is aimed at providing those maps.

The earliest and most obvious applications of genome research are tests for genetic disorders, but less obvious diagnostic uses may prove at least as important, such as forensic uses to establish identity (to determine paternity, to link suspects of physical evidence of rape or murder, or as a molecular "dog-tag" in the military). Genome research also promises to find genes expeditiously, making the genetic approach attractive as a first step in the study not only of complex diseases, but also of normal biological function. Each new gene is a potential target for drug development — to fix it when broken, to shut it down, to attenuate or amplify its expression, or to change its product, usually a protein. Finding a gene gives investigators a molecular handle on problems that have proven intractable before.

Science administrators and members of Congress who shepherded the budgets for genome research (and their counterparts in other nations and international organizations) supported the project not only because of its medical benefits, but also because they saw it as a vehicle for technological advance and creation of jobs and wealth. The main policy rationale for genome