

Chapter 12

Wealth Creation from the Commercialization of Genomics Science

ABSTRACT

In this chapter, we provided a synopsis about the inception of the human genome sequencing initiative. The role of the Nobel Laureate (James D. Watson) in enabling this gigantic scientific venture to be accomplished cannot be overemphasized. The United States National Institute of Health and the U.S. Department of Energy characterized the thematic units of the sequencing efforts, which eventually led to wealth creation. We have predicted that in the next decade, wealth derived from genomic science could be concentrated in few commercial enterprises in the G8 nations and China. The intervention of the various international health and educational organizations are needed to eliminate global genomic disparities. The ethical legal, social, and financial implications of genomic research were also discussed. The enormous economic and medical benefits of genomics were outlined. Efforts were made to compare the diffusion of genomic scientific interventions in the progressive developing nations such as Brazil, Russia, India, China, and South Africa (BRICS) and the least-developing countries as Angola, Bangladesh, and the Republic of Benin, among others. The financial implications involved in implementing comprehensive genomic sciences in these least-developing nations were discussed.

INTRODUCTION

In this chapter, we hereby provide a synopsis about the inception of the human genome sequencing project and the role of Dr. James D. Watson and his colleagues in enabling this gigantic scientific initiative to receive adequate funding and international political support which led to the accomplishment of the project. The United States Department of Energy (DoE) and the National Institutes of Health (NIH) ingeniously characterized the thematic units of the sequencing efforts which created the bedrock for conceptualization of the processes of wealth creation from genomic science. In the next decade, wealth derived from genomics will be concentrated in few corporate commercial enterprises. The interventions of the United Nations, World Health Organization, the United Nations Children Emergency

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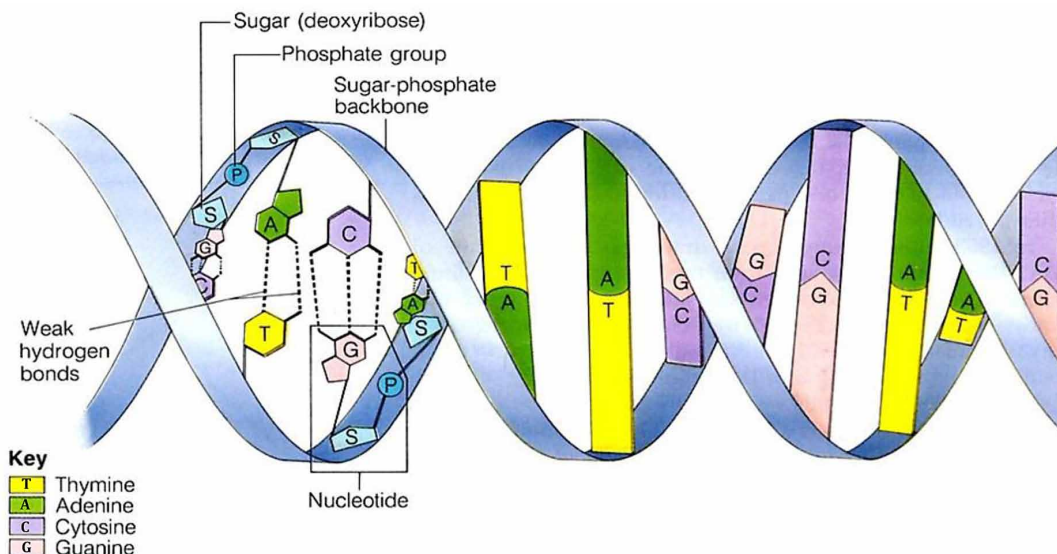
Fund, and United Nations Education, Scientific and Cultural Organizations are required to reduce the exposure of developing nations and the least-developing to the imminent global disparities associated with wealth from genomics

Although planning began in 1986, regarding the DoE's Human Genome Program, the NIH got involved in 1987. The joint initiative between The DoE and NIH, the U.S.-led Human Genome Project (HGP) formally began by October 1, 1990. The Memorandum of Understanding (MOU) was signed after the first joint 5-year plan was documented between the two U.S. federal scientific organizations. The accomplishment of human genome sequencing, mapping and declassification is practically incomplete without the imaginative vision of the Nobel laureate Dr. James D. Watson and his colleagues. In 1986, Dr. Watson organized a special session to discuss the full ramifications of the HGP, during that meeting at Cold Spring Harbor Laboratory, the idea was raised by Wally Gilbert that the project could consume a colossal sum of money to the tune of "3 billion base pairs, 3 billion dollars" (Figure 1). This was perceived as an extremely expensive project that could only succeed with public funding. The role of Dr. Watson and his associates in involving political leaders and soliciting funding for the accomplishment of the HGP can hardly be overemphasized.

As the first biologist to serve as the director of the human genome unit at the NIH, he cautioned both administrators and scientists about the enforcement of sanctimonious ethical principles in the practical implementation of genomics, discouraging the slightest elements of eugenics in the implementing the guidelines and protocol of conducting genomic research nationwide and internationally (Institute of Medicine, 2005, Watson, 2004). Currently, even the comprehensive data on human genome are completely declassified and placed under public domain.

In the early phase of 1990, when an aggressive planning was being developed for the implementation of the human genome sequencing project (HGSP), there were many critiques of the project and distracters who argued that such massive fund should be diverted to feed the impoverished global community and treat those who suffer from the broad spectrum of parasitic diseases and human immunodeficiency virus (HIV).

Figure 1. DNA sequencing and identification of a crime scene



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