

PREFACE

Genetics and Genetic Engineering is part of the *Information Plus Reference Series*. The purpose of each volume of the series is to present the latest facts on a topic of pressing concern in modern American life. These topics include the most controversial and studied social issues in the twenty-first century: abortion, capital punishment, care of senior citizens, crime, the environment, health care, immigration, minorities, national security, social welfare, women, youth, and many more. Even though this series is written especially for high school and undergraduate students, it is an excellent resource for anyone in need of factual information on current affairs.

By presenting the facts, it is the intention of Gale, Cengage Learning to provide its readers with everything they need to reach an informed opinion on current issues. To that end, there is a particular emphasis in this series on the presentation of scientific studies, surveys, and statistics. These data are generally presented in the form of tables, charts, and other graphics placed within the text of each book. Every graphic is directly referred to and carefully explained in the text. The source of each graphic is presented within the graphic itself. The data used in these graphics are drawn from the most reputable and reliable sources, such as from the various branches of the U.S. government and from major independent polling organizations. Every effort has been made to secure the most recent information available. Readers should bear in mind that many major studies take years to conduct and that additional years often pass before the data from these studies are made available to the public. Therefore, in many cases the most recent information available in 2009 is dated from 2006 or 2007. Older statistics are sometimes presented as well if they are of particular interest and no more-recent information exists.

Even though statistics are a major focus of the *Information Plus Reference Series*, they are by no means its only content. Each book also presents the widely held

positions and important ideas that shape how the book's subject is discussed in the United States. These positions are explained in detail and, where possible, in the words of their proponents. Some of the other material to be found in these books includes historical background, descriptions of major events related to the subject, relevant laws and court cases, and examples of how these issues play out in American life. Some books also feature primary documents or have pro and con debate sections that provide the words and opinions of prominent Americans on both sides of a controversial topic. All material is presented in an even-handed and unbiased manner; readers will never be encouraged to accept one view of an issue over another.

HOW TO USE THIS BOOK

Genetics and genetic engineering is a hotly debated topic in the United States today. Issues such as genetic testing to screen for disease susceptibility and the implications of test results; whether to permit cloning of human organs and the moral dilemma of "playing God"; and the advisability of raising genetically modified crops are discussed in coffee shops and classrooms across the nation. These topics and more are covered in this volume.

Genetics and Genetic Engineering consists of ten chapters and three appendixes. Each chapter is devoted to a particular aspect of genetics and genetic engineering in the United States. For a summary of the information covered in each chapter, please see the synopses provided in the Table of Contents at the front of the book. Chapters generally begin with an overview of the basic facts and background information on the chapter's topic, then proceed to examine subtopics of particular interest. For example, Chapter 3, Genetics and Evolution, begins by discussing the basic concepts of evolution, then goes on to examine the concept of natural selection, whose principles were described by Charles Darwin. His theories faced

staunch criticism, but after they became more mainstream, some people began to misuse his theories for societal and political reasons, and the chapter details these issues. After a discussion of the modern evolution-creation debate, the chapter delves into examining variation and adaptation. The chapter concludes by focusing on genetic mutations and how they occur and the modern synthesis of evolutionary genetics. Readers can find their way through a chapter by looking for the section and subsection headings, which are clearly set off from the text. They can also refer to the book's extensive Index if they already know what they are looking for.

Statistical Information

The tables and figures featured throughout *Genetics and Genetic Engineering* will be of particular use to readers in learning about this issue. These tables and figures represent an extensive collection of the most recent and important statistics on genetics and genetic engineering and related issues—for example, graphics cover the landmarks in the history of genetics, a diagram of DNA, public opinion on animal and human cloning, and public opinion on the hazards of biotech foods. Gale, Cengage Learning believes that making this information available to readers is the most important way to fulfill the goal of this book: to help readers to understand the issues and controversies surrounding genetics and genetic engineering in the United States and to reach their own conclusions.

Each table or figure has a unique identifier appearing above it for ease of identification and reference. Titles for the tables and figures explain their purpose. At the end of each table or figure, the original source of the data is provided.

To help readers understand these often complicated statistics, all tables and figures are explained in the text. References in the text direct readers to the relevant statistics. Furthermore, the contents of all tables and figures are fully indexed. Please see the opening section of the Index at the back of this volume for a description of how to find tables and figures within it.

Appendixes

Besides the main body text and images, *Genetics and Genetic Engineering* has three appendixes. The first is the Important Names and Addresses directory. Here, readers

will find contact information for a number of government and private organizations that can provide further information on genetics and genetic engineering. The second appendix is the Resources section, which can also assist readers in conducting their own research. In this section the author and editors of *Genetics and Genetic Engineering* describe some of the sources that were most useful during the compilation of this book. The final appendix is the Index.

ADVISORY BOARD CONTRIBUTIONS

The staff of Information Plus would like to extend its heartfelt appreciation to the Information Plus Advisory Board. This dedicated group of media professionals provides feedback on the series on an ongoing basis. Their comments allow the editorial staff who work on the project to make the series better and more user-friendly. The staff's top priority is to produce the highest-quality and most useful books possible, and the Advisory Board's contributions to this process are invaluable.

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COMMENTS AND SUGGESTIONS

The editors of the *Information Plus Reference Series* welcome your feedback on *Genetics and Genetic Engineering*. Please direct all correspondence to:

Editors

Information Plus Reference Series
27500 Drake Rd.
Farmington Hills, MI 48331-3535