Museum of Science

Educator Resource Center in the Lyman Library

DNA and Genetics Bibliography

Adult Books

Alcamo, I. Edward. ***DNA Technology: The Awesome Skill.*** Dubuque, IA: Wm. C. Brown Publishers, 1996.

DNA Technology, is a survey of biotechnology written to enlighten readers about the breakthroughs made possible by the science and technologies associated with current DNA research. Ed Alcamo gives the educated layperson a survey of DNA by presenting a brief history of genetics, a clear outline of techniques that are in use, and indications of breakthroughs in cloning and other DNA advances.

Brookes, Martin. ***Fly: The Unsung Hero in the History of Genetics.*** NY: Ecco Press, 2001.

Martin Brookes takes us through successive stages in the life cycle of the fly, each illustrating an important concept in biology. Some, such as the fundamentals of heredity, are well established; others, such as sexual warfare, learning, and memory, are still in their infancy. Often dismissed as irrelevant outside academic circles, the fruit fly, through this distinctive biography, will come to be recognized for what it really is: an icon of twentieth-century science and a window on our own biological world.

Klug, William S. ***Essentials of Genetics*****.** Upper Saddle River, NJ: Prentice Hall, 2002.

Balancing classical and modern genetics, *Essentials of Genetics* helps readers understand basic genetics concepts, apply those concepts to genetics problems, and recognize the logic behind them. This succinct treatment features coverage of new research that will capture readers' interests.

Lyon, Jeff. ***Altered Fates: Gene Therapy and the Retooling of Human Life.*** New York: Norton, 1996.

In 1990 Ashanthi DeSilva, a four-year-old suburban Cleveland girl with a life-threatening, hereditary immune disorder, made medical history when doctors at the National Institutes of Health successfully treated her by inserting new genetic material into her cells and reprogramming them to produce an essential enzyme. The first half of this epic, magnificent history of gene therapy retraces years of tortuous research culminating in that breakthrough, which was the work of NIH molecular biologist William French Anderson and his colleagues.

Ridley, Matt. ***Genome: The Autobiography of a Species in 23 Chapters.*** New York: HarperCollins,1999.

Genome offers extraordinary insight into the ramifications of this incredible breakthrough. From Huntington's disease to cancer, from the applications of gene therapy to the horrors of eugenics, Matt Ridley probes the scientific, philosophical, and moral issues arising as a result of the mapping of the genome. It will help you understand what this scientific milestone means for you, for your children, and for humankind.

Watson, James D. ***The Double Helix: A Personal Account of the Discovery of the Structure of DNA*****.** London: Weidenfeld and Nicholson, 1980.

By identifying the structure of DNA, the molecule of life, Francis Crick and James Watson revolutionized biochemistry and won themselves a Nobel Prize. With humility unspoiled by false modesty, Watson relates his and Crick's desperate efforts to beat Linus Pauling to the Holy Grail of life sciences, the identification of the basic building block of life. Never has a scientist been so truthful in capturing in words the flavor of his work.

Wells, Spencer. ***Deep Ancestry: Inside the Genographic Project.*** Washington, D.C.: National Geographic,2006.

Science tells us we're all related--one vast family sharing a common ancestor who lived in Africa 60,000 years ago. This book translates complicated concepts into accessible language and explains how each individual's DNA contributes another piece to the puzzle.

Young Adult Books

Balkwill, Frances R. ***DNA is Here to Stay*****.** Minneapolis, MN: Carolrhoda Books, 1993.

DNA Is Here to Stay gives basic but lucid explanations. Ideas are presented clearly and concisely in an appropriately conversational tone, often with splashes of humor. Difficult concepts are easily understood, while vibrant colors and cartoonlike characters of both sexes and various ethnicities add to the appeal.

Bardoe, Cheryl. ***Gregor Mendel: The Friar Who Grew Peas*****.** NY: Abrams Books for Young Readers, 2006.

Living the slow-paced, contemplative life of a friar, Gregor Mendel was able to conceive and put into practice his great experiment: growing multiple generations of peas. From observing yellow peas, green peas, smooth peas, and wrinkled peas, Mendel crafted his theory of heredity—years before scientists had any notion of genes.

Claybourne, Anna. ***The Usborne Internet-Linked Introduction to Genes & DNA.*** London: Usborne Publishing Ltd, 2003.

An introduction for children to the world of genetics through 3D artwork, clear text, simple step-by-step diagrams.

Fridell, Ron. ***Decoding Life: Unraveling the Mysteries of the Genome*****.** Minneapolis, MN: Lerner Publications, 2005.

An utterly fascinating study into genomes, which are unique to each living creature, but are essentially the same in their genetic material. The human body contains approximately 100 trillion cells, which are the basis of the body. Each cell has a nucleus, which tells every other part of the cell how to operate. Inside each nucleus are 23 chromosomes, which hold all of a person's genetic information. Chromosomes are made of deoxyribonucleic acid (DNA), tightly coiled together. DNA holds the human genome

Herskowitz, Joel. ***Double Talking Helix Blues*****.** Cold Spring Harbor, NY: Cold Spring Harbor Laboratory, 1993.

Illustrated verses explore the role of DNA in shaping the formation of new life.

Morgan, Sally. ***From Mendel's Peas to Genetic Fingerprinting: Discovering Inheritance*****.** Chicago, IL: Heinemann Library, 2006.

Mendel's Peas informs students about genetics and its many applications, including the Human Genome Project and genetic fingerprinting.

Panno, Joseph. ***Gene therapy: Treating Disease by Repairing Genes.*** New York, NY: Facts On File, 2005.

Gene Therapy is a compelling examination of this controversial form of treatment that faces close monitoring by the public, the government, and the media. Author Joseph Panno discusses the science behind gene therapy, as well as the ethical and legal issues associated with this therapy.

Polcovar, Jane. ***Rosalind Franklin and the Structure of Life*****.** Greensboro, NC: Morgan Reynolds Pub, 2006.

Although many people associate the names Watson and Crick with the discovery of DNA, few know that Franklin took the photograph that led the two men to their conclusions. Written in an easy-to-read manner, this book highlights her personal and professional struggles, and readers interested in the history of science will marvel at how such a huge player in the discovery of the double helix could have been overlooked.

Snedden, Robert. ***DNA & Genetic Engineering*****.** Chicago, IL: Heinemann Library, 2003.

DNA and Genetic Engineering explains how DNA is put together and how its code is read and acted upon by the cell to make proteins. This book explores genetic engineering and gene therapy as well as the highly controversial areas of stem cell research and cloning.

Taylor, Robert. ***Genetics.*** San Diego, CA: Lucent Books, 2004.

Discusses the history and current state of scientific understanding of genetics, exploring the roles of genes, DNA, and RNA, as well as the medical, legal, and ethical dimensions of such issues as genetic engineering and DNA evidence.

Walker, Richard. ***Genes & DNA*****.** Boston, MA: Kingfisher, 2003.

Genes and DNA explores the intricate mysteries of this exciting science. From the basics of genes and their function as the code of life, through variations in families and inheritance, to the wide-ranging applications of DNA technology, find out how genes and DNA work.

Media

Clockwork Genes: Discoveries in Biological Time [DVD]. 240 min. Howard Hughes Medical Institute, 2000.

This lecture series highlights the research of two biomedical scientists who have made groundbreaking discoveries in understanding the molecular basis of circadian clocks.

Cracking The Code of Life [DVD]. 120 min. NOVA/WGBH, 2004.

Robert Krulwich lends a lighthearted touch to genetic science in this provocative two-hour NOVA special that takes you inside the amazing, complex and contentious race to decode the human genome.

DNA: The Secret of Life [VHS]. 32 min. North Carolina Morehead Planetarium and Science Center, 2003.

Chronicles James Watson and Francis Crick's 1953 revolutionary scientific breakthrough-the discovery of the double helix.

Greatest Discoveries with Bill Nye: Genetics [DVD]. 45 min. Discovery Communications, 2005.

It took 150 years to progress from Mendel's experiments with peas to the complete sequencing of the human genome. Host Bill Nye explores why certain traits are passed through families and species. He discusses the process by which scientists came to understand that inherited information is passed according to rules. Grades 6-12.

Scanning Life's Matrix: Genes, Proteins, and Small Molecules [DVD]. 240 min. Howard Hughes Medical Institute, 2003.

The sequencing of the human genome has set the stage for a vast revolution in the biomedical sciences. In four presentations featuring state-of-the-art animations and compelling graphics, Dr. Stuart L. Schreiber and Dr. Eric S. Lander open a window onto the fast-paced world of genomic science and chemical genetics.

Understanding: The Power of Genes [VHS]. 53 min. Discovery Education, 1998.

Explores the power of genes for cloning and crime solving, and their use in creating genetically-altered animals. Grades 6-12.