



Educator Resource Center in the Lyman Library
Biotechnology and Medical Sciences Bibliography

Adult Books

Acquaah, George. ***Understanding Biotechnology: An Integrated and Cyber-based Approach***. Upper Saddle River, NJ: Pearson/Prentice Hall, 2004.

This timely book has an easy-to-comprehend style that makes it suitable for readers with or without a background in biology. While emphasizing biotechnology's core principles and practices, its cyber-based approach provides a built-in mechanism for updating information in the rapidly evolving biotech field.

Bellomo, Michael. ***The Stem Cell Divide: The Facts, the Fiction, and the Fear Driving the Greatest Scientific, Political, and Religious Debate of Our Time***. NY: American Management Association, 2006.

There has been much recent debate about the merits, dangers, and nature of stem cell research. Some see in it the answer to every debilitating disease known to man, while others see it as a step away from human cloning. *The Stem Cell Divide* does not take sides, and the author debunks the distortions and exaggerations that come from every camp. This book does not tell readers what to think, but gives them the facts necessary to form their own opinions about one of the most divisive, complex, and potentially life-changing developments in history.

Gunn, Moira Anne. ***Welcome to BioTech Nation: My Unexpected Odyssey into the Land of Small Molecules, Lean Genes, and Big Ideas***. NY: AMACOM, 2007.

Going behind the science and business of biotech, the book rides along with Dr. Gunn as she interviews an interesting and colorful cast of characters from the industry, including a DNA scientist with ego to burn and a pharmaceutical exec with a penchant for Viagra. Filled with compelling stories of everything from the genetically modified food fight to the reasons why the presidential stem lines are dying, the book explores the fascinating theories and breakthroughs in this exciting field.

Holland, Suzanne. ***The Human Embryonic Stem Cell Debate: Science, Ethics, and Public Policy***. Cambridge, MA: MIT Press, 2001.

This book offers a foundation for thinking about the many issues involved in human embryonic stem cell research. It considers questions about the nature of human life, the limits of intervention into human cells and tissues, and the meaning of our corporeal existence.

Kreuzer, Helen. ***Recombinant DNA and Biotechnology: A Guide for Teachers.*** Washington, DC: ASM Press, 2001.

Written in clear, easy-to-understand language, this reference text and activities manual offers easy-to-implement lessons and classroom activities. Extensive appendixes provide important background information on basic laboratory techniques and teaching resources, including overhead masters and templates.

Maienschein, Jane. ***Whose View of Life?: Embryos, Cloning, and Stem Cells.*** Cambridge, MA: Harvard University Press, 2003.

Whose View of Life? brings the current debates into sharper focus by examining developments in stem cell research, cloning, and embryology in historical and philosophical context and by exploring legal, social, and ethical issues at the heart of what has become a political controversy.

Naam, Ramez. ***More than Human: Embracing the Promise of Biological Enhancement.*** NY: Broadway Books, 2005.

Distilling the most radical accomplishments being made in labs worldwide, including gene therapy, genetic engineering, stem cell research, life extension, brain-computer interfaces, and cloning, *More Than Human* offers an exciting tour of the impact biotechnology will have on our lives. Throughout this remarkable trip, author Ramez Naam shares an impassioned vision for the future with revealing insight into the ethical dilemmas posed by twenty-first-century science.

Ruse, Michael. ***The Stem Cell Controversy: Debating the Issues.*** Amherst, NY: Prometheus Books, 2003.

Authors, Michael Ruse and Christopher A. Pynes have compiled this valuable, up-to-date, and newly revised collection of articles by noted experts to address all aspects of the stem cell controversy. The contributors—scientists, medical practitioners, philosophers, theologians, historians, and policy analysts—offer a variety of perspectives to give readers the critical tools they need to shape an informed position on the topic. Readers will come away with a deeper understanding of the science of stem cell research, its medical cures and promises, and the moral, religious, and policy concerns surrounding this controversial social issue.

Sachs, Jessica Snyder. ***Good Germs, Bad Germs: Health and Survival in a Bacterial World.*** NY: Hill and Wang, 2007.

Public sanitation and antibiotic drugs have brought about historic increases in the human life span; they have also unintentionally produced new health crises by disrupting the intimate, age-old balance between humans and the microorganisms that inhabit our bodies and our environment. As a result, antibiotic resistance now ranks among the gravest medical problems of modern times.

Singleton, Paul. ***Bacteria in Biology, Biotechnology, and Medicine.*** Chichester: John Wiley, 1999.

Bacteria in Biology, Biotechnology and Medicine is a broadly based textbook of pure and applied bacteriology. Written in clear language, the up-to-date text gives readers access to new ideas and developments in the current literature. The book is intended primarily for undergraduates and postgraduates in biology, biotechnology, medicine, veterinary science, pharmacology, microbiology, food science, environmental science and agriculture; no prior knowledge of bacteria is assumed.

Slesnick, Irwin L. ***Clones, Cats, and Chemicals: Thinking Scientifically About Controversial Issues***. Arlington, VA: NSTA Press, 2004.

Clones, Cats, and Chemicals examines 10 dilemmas from the fields of biology, chemistry, physics, Earth science, technology, and mathematics and helps you challenge students to confront scientific and social problems that offer few black-and-white solutions. Each question is presented as a two-part unit: concise scientific background with possible resolutions and a reference list for further teacher reading, and a reproducible essay, questions, and activities to guide students in debating and decision making.

Thacker, Eugene. ***The Global Genome: Biotechnology, Politics, and Culture***. Cambridge, MA: MIT Press, 2005.

In the age of global biotechnology, DNA can exist as biological material in a test tube, as a sequence in a computer database, and as economically valuable information in a patent. In *The Global Genome*, Eugene Thacker asks us to consider the relationship of these three entities and argues that -- by their existence and their interrelationships -- they are fundamentally redefining the notion of biological "life itself."

Wilmut, Ian. ***After Dolly: The Uses and Misuses of Human Cloning***. NY: W.W. Norton & Company, Inc., 2006.

A timely investigation into the ethics, history, and potential of human cloning from Professor Ian Wilmut, who shocked scientists, ethicists, and the public in 1997 when his team unveiled Dolly—that very special sheep who was cloned from a mammary cell.

Young Adult Books

Claybourne, Anna. ***Microlife: From Amoebas to Viruses***. Chicago, IL: Heinemann Library, 2004.

This book provides information about microorganisms and how they benefit and harm humans. The book discusses what microorganisms are, describes how they live, and gives a brief history of scientists who helped discover some of the characteristics of microorganisms.

Cohen, Daniel. ***Cloning***. Brookfield, CT: Millbrook Press, 1998.

Cohen delivers a well-balanced examination of the social concerns surrounding cloning, providing enough scientific background to help readers understand the

issues. After exploring the history of this area of scientific research, the author moves on to the recent cloning of a sheep named Dolly. Although she was cloned for livestock breeding purposes, this breakthrough raised concerns about applying the technology to humans.

Grady, Sean M. ***Biohazards: Humanity's Battle with Infectious Disease***. NY: Facts On File, 2006.

This accessible work carefully examines the bacteria and viruses that make up a significant part of our world. The threat of bioterrorism; the risks of international travel; the spread, control, and treatment of such newly important diseases as anthrax, hantavirus, and HIV/AIDS, as well as historical ones like the Black Plague and smallpox, are clearly discussed.

Morgan, Sally. ***From Microscopes to Stem Cell Research: Discovering Regenerative Medicine***. Chicago, IL: Heinemann Library, 2006.

Microscopes provides information on stem cells and their uses, as well as some of the controversies surrounding them. Morgan begins with the discovery of cells by Robert Hooke in the early 1660s and concludes with an explanation of regenerative medicine and how stem-cell research has transformed the medical field.

Morgan, Sally. ***From Sea Urchins to Dolly the Sheep: Discovering Cloning***. Chicago, IL: Heinemann Library, 2006.

Sea Urchins addresses cloning, from its beginnings in the 1890s to Dolly the sheep in 2003. The books feature clear, straightforward writing and bright and open layouts with colorful photographs and illustrations on every spread. Boxed areas offer specific quotes from scientists, highlight amazing facts, or answer specific questions. Each volume concludes with brief biographies of key individuals in the field.

Panno, Joseph. ***Stem Cell Research: Medical Applications and Ethical Controversy***. NY, NY : Facts On File, 2005.

Physiologist Panno explains how stem cells can be used to treat, and possibly cure, a wide variety of diseases, and he predicts that the use of adult stem cells will soon be routine. The book includes occasional diagrams; an extensive, detailed glossary; and many bibliographical references to science and ethical discussions in print and on the Web. In addition, there is a chapter summarizing cell biology and recombinant DNA technology.

Stanley, Debbie. ***Genetic Engineering: The Cloning Debate***. NY: Rosen, 2000.

In *Genetic Engineering* the complicated issue of cloning is presented. The author begins by tracing scientific efforts to complete the cloning of other life forms. Up-to-date results in the field of cloning are detailed in a lucid manner and then discussion turns to the choices and problematic concerns involved in cloning. Particular attention is directed to human cloning and the intricate debate related to that area of scientific inquiry. Issues such as potential birth defects, parental

rights, potential political misuse of science and religious concerns are all presented in a thoughtful manner.

Tesar, Jenny E. ***Stem Cells***. San Diego, CA: Blackbirch Press, 2003.

Stem Cells examines the very promising but controversial use of human stem cells in treating medical conditions ranging from burned skin to damaged spinal cords to various diseases. A list of Web sites leads to additional sources of current materials.

Media

2000 and Beyond: Confronting the Microbe Menace [DVD]. 120 min. HHMI, 1999.

Two scientists describe the latest advances in understanding how pathogens invade the body and how this knowledge is leading to the development of new therapies.

And the Band Played On [DVD]. 140 min. HBO, 1993.

Based on Randy Shilts' bestselling book, the movie *And the Band Played On* is the story of the discovery of the AIDS epidemic and the political infighting of the scientific community hampering the early fight with it.

The Clone Age [VHS]. 52 min. Discovery Channel, 1999.

Cloning was the stuff of science fiction, until a sheep named Dolly made the process frighteningly real. *The Clone Age* explains the science that undergirds the controversial practice of cloning.

Cloning: The Science Behind the Controversy [DVD]. 23 min. Disney, 2005.

Explore the biology and ethics behind cloning with Bill Nye.

Potent Biology: Stems Cells, Cloning and Regeneration [DVD]. 240 min. HHMI, 2006.

What are embryonic stem cells? Why are they potent? How do they differ from adult stem cells? Are embryonic development and regeneration intimately connected? In four presentations, Dr. Douglas A. Melton and Dr. Nadia Rosenthal discuss how stem cells may hold the key for curing diseases and unlocking the secrets of regeneration.

Scientific American Frontiers: Cybersenses [DVD]. 27 min. PBS, 2005.

Explore replacement synthetic Cochlear implants for hearing and artificial retinas for seeing.