Contents

Preface	ix
1	
Genetic Manipulation	
The History of Genetic Science What Is Genome Editing? <i>National Human Genome Research Institute/NIH</i> , 2021	3 9
A Brief History of Human Gene Editing Carmen Leitch, <i>Labroots</i> , July 31, 2022	12
Science and History of GMOs and Other Food Modification Processes <i>FDA</i> , April 19, 2023	15
Did He Jiankui "Make People Better"? Documentary Spurs a New Look at the Case of the First Gene-Edited Babies G. Owen Schaefer, <i>The Conversation</i> , December 20, 2022	22
Experts Weigh Medical Advances in Gene-Editing with Ethical Dilemmas Rob Stein, <i>NPR</i> , March 6, 2023	26

2

Pioneering Science

New Developments in Genetic Technology The Promise of Gene Editing: So Close and Yet so Perilously Far David J. Segal, <i>Frontiers</i> , July 15, 2022	33 37
Engineered Yeast Turn Agricultural Waste into Biofuels <i>Technology Networks</i> , July 20, 2023	45
CRISPR/Cas9-Based Gene Drive Could Suppress Agricultural Pests Mick Kulikowski, <i>NC State News</i> , June 12, 2023	48
Baby Without Sperm or Egg? Scientists Develop Synthetic Embryos Using Stem Cells Shobhit Gupta, <i>Hindustan Times</i> , June 15, 2023	50
The Precious Genes of the World's First Cloned Ferret Could Help Save Her Species Joel Goldberg, <i>Science</i> , February 11, 2022	52

3

Genetic Medicine

Gene Therapy and Medical Genetics Edits to a Cholesterol Gene Could Stop the Biggest Killer on Earth Antonio Regalado, <i>MIT Technology Review</i> , July 12, 2022	57 61
He Inherited a Devastating Disease: A CRISPR Gene-Editing Breakthrough Stopped It Rob Stein, <i>NPR</i> , June 26, 2021	64
Organ Transplants from Pigs: Medical Miracle or Pandemic in the Making? J. Roger Jacobs, <i>The Conversation</i> , February 27, 2022	67
Using Gene Editing to Fight Deadly Genetic Diseases Karen Feldscher, <i>Harvard T.H. Chan</i> , November 30, 2022	70
COVID Testing Led to New Techniques of Disease Diagnosis: Progress Mustn't Stop Now Angelika Loots, <i>The Conversation</i> , March 24, 2023	72
Forget Designer Babies. Here's How CRISPR Is Really Changing Lives Antonio Regalado, <i>MIT Technology Review</i> , March 7, 2023	75

4

Controversial Technology

Genetic Modification Controversies and Debates Decoding the CRISPR-Baby Stories J. Benjamin Hurlbut, <i>MIT Technology Review</i> , February 24, 2021	81 87
It's Official: No More CRISPR Babies—for Now Grace Browne, <i>Wired</i> , March 17, 2023	92
The First Gene-Edited Babies Are Supposedly Alive and Well, Says Guy Who Edited Them Tim Newcomb, <i>Popular Mechanics</i> , February 7, 2023	95
Biotechnology Is Creating Ethical Worries and We've Been Here Before Giana Gitig, <i>Ars Technica</i> , October 29, 2022	97
Cloning Fact Sheet <i>National Human Genome Research Institute/NIH</i> , August 15, 2020	101

Popular Genetics

Genetic Engineering in Pop Culture Should We Bring Back the Dodo? De-extinction Is a Feel-Good Story,	111
but These High-Tech Replacements Aren't Really "Resurrecting" Species Risa Aria Schnebly and Ben A. Minteer, <i>The Conversation</i> , March 1, 2023	115
Why Genetic Engineering Experts Are Putting a Spotlight on Victoria Gray's Case Rob Stein, <i>NPR</i> , March 7, 2023	118
Seven Times Science Fiction Got Genetic Engineering Right Sue Burke, <i>TOR</i> , June 1, 2021	122
How Real Is Genetic Engineering in Sci-Fi? Courtney Linder, <i>Popular Mechanics</i> , August 26, 2020	126
A History of Genome Engineering in Popular Culture Kartik Lakshmi Rallapalli, <i>AddGene Blog</i> , February, 2020	131
Americans Are Closely Divided Over Editing a Baby's Genes to Reduce Serious Health Risk Lee Rainie, Cary Funk, Monica Anderson, and Alec Tyson, <i>Pew Research Center</i> , March 17, 2022	136
Bibliography Websites Index	149 153 155