

**TEACHER'S GUIDE:**  
***Double Helix: a novel***  
**by Nancy Werlin**

Double Helix | Nancy Werlin | Dial | March, 2004 | 256 p. | \$15.99 | ISBN: 0-8037-2606-6

Reading Level: Middle and high school.

Interest Level: Middle and high school.

Curriculum Areas: English, Biology, Ethics, Psychology.

#### NOTE TO TEACHERS

*Double Helix* provides a contemporary look at many of the biological and ethical issues postulated in Aldous Huxley's classic *Brave New World*, but from the point of view of a teenager, and wrapped in the cloak of a suspense thriller.

*Double Helix* is appropriate for use in a science curriculum as well as an English curriculum. It discusses the morality of genetic engineering and the dangers and opportunities it presents, and encourages discussion of a major "hot button" issue. The book is not science fiction; the ethical and reproductive choices presented in the book will be choices that the current generation of children will have to face as adults. The ambiguous ending allows a variety of scenarios to be imagined or discussed, and the accurate portrayal of methods of genetic engineering and manipulation gives students an understanding of the processes used today, as well as ones that might be used in the future.

#### ABOUT THE BOOK

Eighteen year old Eli Samuels has just graduated from high school and lucked into a job at Wyatt Transgenics—offered to him by Dr. Quincy Wyatt, the legendary molecular biologist. The salary is substantial, the work is interesting, and Dr. Wyatt seems to be paying special attention to Eli.

Is it too good to be true? Eli's girlfriend doesn't think so, but his father is vehemently against his taking the job and won't explain why. Eli knows that there's some connection between Dr. Wyatt and his parents—something too painful for his father to discuss. Something to do with his mother, who is now debilitated by Huntington's disease. As Eli works at the lab, and spends time with Dr. Wyatt, he begins to uncover some disconcerting information—about himself.

Suspenseful and eloquent, with a hair-raising conclusion, *Double Helix* explores identity, intimacy, and the complicated ethics of genetic engineering.

#### ABOUT THE AUTHOR

**Nancy Werlin** was born in Massachusetts, where she still lives. Along with writing fiction, she has worked for many Boston-area high tech companies, an experience which informs much of her work. In writing for teenagers, she always strives to combine the emotional intensity of a

coming-of-age story with the page-turning tension of a breakneck plot. Nancy's suspense thrillers have won numerous awards and accolades, including the Edgar award for best young adult mystery. Visit her web site at [www.nancywerlin.com](http://www.nancywerlin.com).

## SUBJECT AREAS

ethics; family relationships; illness, physical; death and dying; secrets; friendship; working; self-knowledge; sex and sexuality; love; trust; taking responsibility; anger; computers; dysfunctional families; fear; justice; lying and deceitfulness; problem parents; rites of passage.

## CHARACTERS

Eli Samuels: He's almost 7 feet tall, is a gifted athlete and a straight A student, and may carry a gene that would destroy his life.

Vivian Fadiman: Eli's girlfriend, who love and trusts him, but doesn't understand why he hides so much of his life from her.

Jonathan Samuels: Eli's father, who has been keeping too many secrets for far too long.

Ava Samuels: Eli's mother, who is dying of an incurable genetic disease she may have passed on to her son.

Dr. Quincy Wyatt: A legendary geneticist who knew Eli's parent before Eli was born, and seems to know more about Eli than he is willing to tell.

Kayla Matheson: A year older than Eli, she is staying with Dr. Wyatt for the summer and is Eli's equal in both brains and athletic ability.

Judith Ryan: Head of Human Resources for Dr. Wyatt's company, Wyatt Transgenics.

Larry Donohue: Eli's boss at Wyatt Transgenics, he relates comic book characters to the genetic work the company is doing.

Mary Alice Gregorian: She is in charge of the lab where Eli works.

Mrs. Fadiman: Viv's mother, who thinks very highly of Eli.

Foo-Foo 14: One of the rabbits that Eli takes care of. When she escapes the lab one day, she leads Eli into a world of questions and trouble.

## BOOK DISCUSSION IDEAS

1. Both Kayla and Eli are gifted athletes, extremely intelligent, and unusually attractive. Discuss some of the reasons why they might share these characteristics.
2. Compare and contrast Dr. Wyatt's and Dr. Fukuyama's philosophies about genetic engineering, explaining which perspective makes more sense to you.
3. After spending time with Wyatt and Kayla, Eli is unable to reconnect with Viv. Explain your perception of his state of mind at that point and why he reacted in the way that he did.
4. Kayla grew up with knowledge about herself that Eli's parents kept from him. Discuss how you think having that knowledge affected her life and her relationships with Wyatt and Eli.
5. Discuss how Eli's life might have been different had he grown up with the knowledge about himself and Wyatt that Kayla did.

6. Viv and Eli disagree about the place that trust and openness play in a relationship. Explain both perspectives and discuss which one is more likely to enhance an intimate relationship and why.
7. Compare and contrast Quincy Wyatt and Jonathan Samuels, discussing their philosophies of life, their ethics, and their relationships with Eli.
8. The people in this book all believe that at one time or another their actions are moral and ethical. Choose the persons who you think were the most and least morally and ethically correct or appropriate, and explain why you chose them.
9. Several people in this book go to a great deal of effort to keep secrets from each other. Discuss how lives would have been changed had some of those secrets not been kept.
10. Share your philosophy about the ethics of creating human life in a laboratory environment. Will humans ever become their own creations?
11. Examine the relationship between Eli and his father, and discuss how it changed at crucial turning points, for instance when Eli found the letter, when he decided to work for Wyatt Transgenics, when Jonathan met Viv, and several other situations.
12. Genetic manipulation can take place in many ways, for many reasons. Discuss your own opinion about what is ethical and not ethical about this process, whether it is done with animals or humans.
13. Viv, Eli, and Wyatt all discuss their concepts of what a human soul might be. Summarize and compare their ideas with your own, including why you do or do not agree with any of their ideas.
14. Viv tell Eli several times to “Trust the universe. Everything happens for a reason.” Explain what that means to you and whether you see life as purposeful and directed or random. Do you see life as ordered and sequential or chaotic?
15. Speculate what the future will be like for Eli, Viv, and Kayla. Based on who they are at the end of the book, what will they be like and what will they be doing in five years? Ten years? Twenty?
16. Choose the idea or ideas in the book that you are most interested in, that resonate with you the most, discuss them and explain why you chose them.
17. This is a book that might be used in middle or high school classrooms for class discussions. In your opinion, why would it be appropriate or inappropriate in such a setting? What parts would be interesting or involving to discuss or debate? What parts would not?
18. Explain why you changed and how you are different as a result of your reading this book. If you have not changed your ideas or opinions, explain why not.

## MAJOR THEMES

### Biology and Science

- Genetic manipulation can have positive, negative, and most of all, unforeseen results.
- Scientists often don't think through the future implications of the work they're doing; it is not their job to do so. It's the job of the rest of us to be aware of scientific advances and to think through all of their implications before we use them—or choose not to use them.

### Creation

- What does it mean to be human?

- If they can, should humans take charge of the future creation of humanity?

#### Parents and Teenagers

- Sooner or later, parents must understand that their teenagers will be making their own decisions about what is best for them.
- Teenagers must take on the full responsibility for their decisions—including that of asking for help and advice when they need it.
- It's impossible for parents to protect their children forever, and trying to do so might even cause them harm.

#### Secrets

- Secrets kept from those you love can tear both families and relationships apart.
- Secrets can eat away at the person who keeps them, helping to destroy them from the inside out.

#### Trust and Love

- Trust is a prerequisite for true intimacy, and must be given equally by both people.
- Love means letting someone else see all of you, even the parts you don't like to share.
- Love means letting someone else have privacy when they need it.

#### Our Place and Purpose in the World

- There is no way to know how many lives you may touch, or how the world may change because you have been part of it.
- Be active and stand up for what you believe in, and you will make a difference.
- If you want to know something, or are interested in something, ask about it and talk about it.

#### BOOKTALK

*What's a booktalk? It's a dramatic introduction to a book, a teaser, a come-on, or a commercial that highlights an exciting part of the book. As a teacher, use a booktalk to induce a reader to pick the book up and give it a try. For more on booktalks and booktalking, see [www.thebooktalker.com](http://www.thebooktalker.com).*

“The email was a drunken impulse. I regretted it the moment I clicked Send, but it was too late. Forget about drinking and driving—it's drinking and emailing that can really mess you up—permanently.

“But even though that email changed everything, the letter I found several weeks before was the real beginning. It was pushed to the back of the drawer in our hall table, dated 10 years ago, and it told my dad that he was negative for Huntington's—the genetic disease that was killing my mother, and that I had a 50/50 chance of getting too. I live with that risk every day. But my dad never told me he'd been at risk, too. He never said a thing, just kept nagging *me* about getting tested.

“I don’t want to be tested! I figure, if I have Huntington’s, I have it. It’s untreatable, incurable and eventually fatal—and before it kills you, it makes you lose control of your body, your emotions, your memories, and eventually, your very self. I know. I watched it destroy my mother. And so I know that if my DNA carries the same genetic flaw as my mother’s, then, sooner or later, the Huntington’s time bomb will explode in me, too. Fact. Absolute. No exceptions.

“The night of the email, I was angry with my father for keeping that secret while trying to rule my life. For refusing to see that I was old enough to make my own decisions—including putting off college. So, that one time in my controlled and careful life, I poured myself into a bottle of booze, and wrote to Dr. Quincy Wyatt, who’d arranged for my father to be tested. I had no idea what their connection was—my father is a psychologist, and Wyatt is a genius, a legend in genetics. But since I was putting off college, I needed a full-time job. Maybe Wyatt would be willing to give me one. Working for Wyatt Transgenics would be incredible!

“I was sorry just seconds after I hit the Send button for that email to Wyatt, but never occurred to me that I’d end up getting an interview with Wyatt himself. But that was what happened. And soon, a lot of things were happening that I’d never expected. I got a job at WT, one usually given to college, not high school, graduates. When I told my father, he went ballistic, forbade me to take the job, and refused to tell me why. Not that I listened. I was through listening to my father.

“I went to work for Wyatt—and suddenly my carefully compartmentalized life fell apart. I met Kayla, and I feel this strange, almost mesmerizing attraction for her—even though I really do love my girlfriend, Viv. But now Viv’s found out about my mother, and I can’t stand that, I just can’t stand it. It gives me no secrets, no privacy. My father’s still furious with me about the job, and still won’t tell me why—and now, suddenly, I’m chasing Foo-Foo 14, a very valuable experimental rabbit, up and down the corridors of Wyatt Transgenics—and into an elevator that isn’t supposed to exist.”

#### IDEAS FOR WRITING A DOUBLE HELIX BOOKTALK

- Use a picture of a strand of DNA as a prop.
- Write your talk as a memoir, as Eli looks back on this transitional part of his life. Be careful, however, not to give away too much and ruin the book for the listener.
- Write your talk alternately from Eli’s and Viv’s perspectives, as they think about their differences or problems in communication, for instance, Eli’s need for privacy and Viv’s need for openness.
- Structure your talk as if it were a newspaper story on Wyatt Transgenics.
- Use the crumpled up letter from the hall table drawer as a prop.

#### SOME INTERNET RESOURCES

**Bloodlines: Technology Hits Home.** This PBS site was created in conjunction with the Bloodlines documentary, which discusses genetic engineering and asks: “As reproductive and genetic technologies move out of the laboratory and into medical practice—as they are combined

into complex applications and applied in unforeseen ways—they are forcing us to ask the question: are we creating a world that we won't want to inhabit?"

The site includes an extensive resource and discussion guide, and keep in mind that students might be very interested in watching the documentary itself, which is available to order for home and school use.

<http://www.pbs.org/bloodlines/>

**Huntington's Disease Society of America.** (HDSA) is dedicated to finding a cure for Huntington's Disease (HD) while providing support and services for those living with HD and their families.

<http://www.hdsa.org/>

**Celebrating 50 Years of DNA.** Cold Spring Harbor Laboratory's online exhibit on the DNA timeline, current readings in genetics and genomics, and including the original 1953 paper on the structure of DNA by James Watson and Francis Crick.

<http://www.dna50.org/main.htm>

**Graphic: Structure of DNA.** Illustration of the graphic structure of the DNA molecule. Several other illustrations, including DNA replication and the genetic code structure, are available at this site as well.

<http://www.accessexcellence.org/AB/GG/dna2.html>

**Human Genome Project** of the U.S. Department of Energy.

[http://www.ornl.gov/sci/techresources/Human\\_Genome/home.shtml](http://www.ornl.gov/sci/techresources/Human_Genome/home.shtml)

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