

Common Read

The Immortal Life of Henrietta Lacks

Our common read book has inter-disciplinary value/relevance, covering social and biological sciences as well as humanities and education including scientific/medical ethics, nursing, biology, genetics, psychology, sociology, communication, business, criminal justice, history, deaf studies and social justice. Below are chapter summaries that focus on the above disciplines to give respective faculty ideas about how the book can be used for their courses.

Part One: Life

1. **The Exam....1951:** A medical visit at Johns Hopkins, Baltimore, the “northern most Southern city.” Although Johns Hopkins is established as an indigent hospital, Jim Crow era policies/ideologies are pervasive in the care/treatment of black patients.
2. **Clover...1920-1942:** Birthplace of Henrietta and several of the Lacks family members, including Day, Henrietta’s cousin, husband, and father of her children. A “day in the life” snapshot of life and work in this rural agricultural small town with distinct social/economic divisions across race and socioeconomic status.
3. **Diagnosis and Treatment...1951:** Henrietta’s diagnosis of cervical carcinomas with a history/statistical profile of diagnostic techniques and prevailing treatment regime of the time. Henrietta’s statement of consent to operative procedures is given along with removal of cancerous tissue and subsequent radium insertion into her cervix.
4. **The Birth of HeLa...1951:** In depth discussion of the Johns Hopkins lab including the development of an appropriate medium to grow cells. HeLa cells, the first immortal line, are born in this meticulously sterilized lab by the Geys.
5. **“Blackness Be Spreadin All Inside”...1951:** A look back at the lively, fun loving youthful Henrietta compared to some of the heartache of the birth of Henrietta’s second daughter, Elsie, who was born “special” (epileptic, deaf, and unable to speak). Elsie is institutionalized (Hospital of Negro Insane) and dies at age 15 years. Day’s infidelities implicated in Henrietta’s diagnosis via STI (syphilis). Henrietta’s physical and psychological decline.
6. **“Lady’s on the Phone”...1999:** Skloot meets a Lacks family friend who will facilitate an introduction between the two. In the three day vetting process, Tuskegee Syphilis Study and Mississippi Appendectomies are discussed. Skloot makes first contact with the Lacks family, mainly Deborah (aka Dale).
7. **The Death and Life of Cell Culture...1951:** Gey widely distributes HeLa cells, free of charge (Texas, New York, Amsterdam, India, and several places in between) for scientific experimentation, including HeLa exposure to toxins, radiation, infections, drugs, etc. Alexis Carrel (fictional/fraudulent) immortal chicken heart cells, as a platform for eugenics (reproduction of a superior [white] race), tainted public and professional perception (creepy science fiction, racism/Nazism, and snake oil).
8. **“A Miserable Specimen”...1951:** Doctor-patients interactions, in this era and beyond, are typically parent-child, with a deferential patient and doctors who practice “benevolent deception.” Black patients, because of their medical indigency, were considered fair game for experimentation as they were getting “free” care from country’s most skilled doctors. Henrietta’s continued decline and death are marred with pain/discomfort as she is treated in the “colored” section of the hospital.
9. **Turner Station...1999:** Michael Roger’s 1976 Rolling Stone article accompany Skloot to Turner Station to meet Lacks family members and friends. Suspicion and fear, due to repeated abuse of family by media and people looking for personal gain (Cofield), are reasonable reactions for family/friends as Skloot visits a makeshift museum to celebrate Henrietta.

10. **The Other Side of the Tracks...1999:** Clover, present day, is compared/contrasted to earlier times and is viewed through the eyes of Cootie, Henrietta's first cousin.

11. **"The Devil of Pain Itself"...1951:** The cancerous tumors continue to grow and spread throughout Henrietta's body. The value of social capital, instrumental and affective, is demonstrated as family and friends hear through the grapevine that Henrietta needs help. Doctors and family come/go as Henrietta lies in hospital bed dying.

Part Two: Death

12. **The Storm...1951:** While no law required doctors to ask permission to take tissue from a living patient, it did require permission to perform an autopsy or remove tissue from the dead, which Day signed. Henrietta's official cause of death: terminal uremia. Several tissue samples are obtained from Henrietta's body as Gey's assistant makes note of her red toenails, making her not just a body, but a real person. Henrietta's funeral in Clover is met with massive thunderstorm.

13. **The HeLa Factory...1951-1953:** HeLa Tuskegee factory's goal: curb polio. HeLa cells are successfully sent, for the first time, via post office. At height, 20K tubes of HeLa, 6 trillion cells, were produced weekly. At this point, HeLa cells were shipped to non-scientific persons/establishments: "...it was hardy, it was inexpensive, and it was everywhere." Cells were used to: understand herpes, measles, mumps, fowl pox, equine, encephalitis, tuberculosis, salmonella, hemorrhagic fever, and bacterium causing vaginitis; freeze cells without damaging or changing them; store cells without keeping them fed and sterile; clone human cells; examine chromosomes (Down's, Klinefelter, and Turner syndromes); explore radiation effects of nuclear bombs; study the effects of gravity; test cosmetic/pharmaceutical products for cellular level damage as well as the effects of steroids, chemotherapy drugs, hormones, vitamins, and environmental stress. Because of the use of same cells, techniques, ingredients, and instruments, standardization of the field was debated. Microbiological Associates, privately owned, became a springboard to launch the first industrial-scale, for-profit cell distribution center thus creating a multi-billion dollar industry selling human biological materials. Along with the money came criticism that the cells were "general scientific property."

14. **Helen Lane...1953-1954:** As HeLa cells became more widely distributed and known, so too did interest from the public. Several mainstream media outlets sought to discover the identity of the cell donor. To throw journalists off the trail, a pseudonym, Helen Lane or Helen Larsen, was created. Because of this, the Lacks family remained unaware of the major scientific contribution of Henrietta.

15. **"Too Young to Remember"...1951-1965:** Henrietta's children often wondered about their mother's death but did not ask. An elder son, Lawrence lied about his age to enter the military (Congress lowered age to serve at 18.5 years for Korean War). Galen and Ethel, long time friends of Day and Henrietta, moved in with Day to care for children. Rumors suggest that Ethel wanted to take Henrietta's place in the household to seek revenge (for jealousy). Ethel restricted food for children and forced them to work long hours in tobacco fields often employing corporal punishment for perceived transgressions. While Sonny (son) and Deborah (daughter) were regularly beaten, the worst was saved for Joe who was arbitrarily beaten, tied with a rope and left for hours in the basement, etc. Joe grew up the "meanest, angriest child any Lacks had ever known." Deborah suffered repeated sexual abuse by Galen, with whom she felt closer than her own father as the former, between abuse, was attentive. The subject of incest is briefly discussed as par for course in the Lacks family.

16. **"Spending Eternity in the Same Place"...1999:** Skloot visits the old Lacks "home-house" in Clover. Because the cemetery was bulldozed, family members cannot identify Henrietta's grave. This chapter delves into the familial history of the Lacks family, including their enslavement. In Clover, there are black Lacks and white Lacks, the latter of whom deny relations with the former.

17. **Illegal, Immoral, and Deplorable...1954-1966:** Chester Southam, Sloan-Kettering Institute for Cancer Research and his unethical use of cancer patients and inmates: for the former, HeLa cells are injected into arms of patients to test immune system ($n \sim 12$); nodes were removed from patients however, for some patients, nodes returned and, for one, HeLa cells metastasized to her lymph nodes; to test the immune system of healthy persons,

Ohio prison inmates were likewise injected (n=65); as with cancer patients, tumors developed on prisoners' arms, however their immune systems were able to repeatedly fight off the cancer completely. Contemporary scientific/bio-medical ethics clearly indicate that research participants must be fully informed of potential risks. Southam, because of "phobia and ignorance," admits that he withheld information from research participants. Southam along with Emanuel Mandel, Jewish Chronic Disease Hospital, planned to inject cancer cells into JCHD patients (n=22) without informed consent. Three Jewish doctors refused, citing atrocities of Holocaust and the resultant Nuremburg Code. In addition to discussion of the Nuremburg Trial, specifics related to informed consent and competency are discussed as some of the JCHD patients selected for injection were unable to grasp concepts of self determination, no harm, etc. due to : advanced Parkinson's disease, inability to speak/understand English (spoke Yiddish), multiple sclerosis, and depressive psychosis, to name a few. In addition to ethics, professionalism, responsibility, applicability of German based code of ethics (to US), research funding, etc. are discussed in this milieu, a milieu when, according to the New England Journal of Medicine, reported that hundreds of equally unethical studies were conducted in US. Of the 22 worst offenses, Southam's study ranked #17.

18. "Strangest Hybrid"...1960-1966: HeLa cells go into outer space. In a comparison, non cancerous cells continued to grow normally in zero gravity. HeLa cells, however, divided faster with each trip. Other unusual characteristics are noted about all cultured cells: 1) normal cultured cells eventually died or spontaneously transformed into cancerous cells...while this was exciting for investigating the moment a normal cells becomes malignant, it was disturbing for scientists using cell cultures to develop medical therapies (e.g., Dr. George Hyatt cultured human skin cells for badly burned soldiers which were applied by smearing cells across wounds...cells grew as expected but a biopsy revealed they were all cancerous); 2) once they transformed and became cancerous, they divided identically and produced exactly the same proteins and enzymes even though they'd all produced different ones before becoming malignant. Cell culturist, Lewis Cariell, hypothesized that "transformed" cells behaved the same not because they'd become cancerous but because they'd been contaminated by virus or bacterium that made them behave similarly. That is, all transformed cells seemed to behave identically to HeLa, which could mean that HeLa was the contaminant. At this time, some scientists did not keep clear records of which cells grew from which donors and/or mislabeled/failed to label cultures. In response, NIH formed a Cell Culture Collection Committee to centrally bank cultures to be tested, cataloged, and stored using state of the art sterile techniques. The Committee request original HeLa cells from Gey, who had none as he had given them all away. He tracked some at lab or William Scherer (used original cells in polio research). The Committee found that of 10 cell lines thought to be from different animal species (duck, dog, pig, etc.) all but one was actually from primates. This error was quickly corrected. This chapter further discusses somatic cell fusion/cell sex along with Harris/Watkins (1965) first animal-human hybrids (equal amounts of DNA from HeLa and a mouse). Discussion continues with deactivated chicken cells combined with HeLa and the mapping of human genes to specific chromosomes by tracking which genetic traits vanished. Mainstream/lay media hyped the research with drawings of half man/half mouse creatures; creation of "mapes" (eggs of man and ape); and using phrases such as "assault on life" and "horrendous."

19. "The Most Critical Time on This Earth is Now"...1966-1973: While Lawrence and Sonny, Henrietta's now adult children, have done well, Deborah (pregnant at age 16 years; living in a domestic violence situation) and Joe (inability to control anger; problem with authority) were struggling. Joe, via his anger, stabs a man to death and ends up in prison. Issues still prevalent in the criminal justice system today include: plea bargaining, public defender, courtroom processes, and life within the walls of a maximum security prison. While brief, this section can be used to expand on historical/contemporary issues inherent in the criminal justice system for poor and minority defendants. Joe converts to Islam and changes his name to Zakariyya.

20. The HeLa Bomb...1966: Stanley Gartler announces at a major conference that 18 of the most commonly used cell cultures contained a rare genetic marker: glucose-6-phosphate dehydrogenase-A (G6PD-A), which is almost exclusive in black Americans. Upon writing to Gey, Gartler learns that: HeLa cells are from "a colored woman." HeLa cells could travel via dust particles, unwashed hands, used pipettes, clothing/shoes, etc. Once it landed in a culture dish, it took over and consumed all media and filled the space. This was especially problematic as scientists had spent entire careers researching and publishing findings as well as spending millions of dollars the behavior of each tissue type. Gartler claims that HeLa had contaminated cell lines from the ATCC. Cells were not spontaneously becoming cancerous, they were taken over by HeLa. Years later, Robert Stevenson, president of

American Type Culture Collection, described Gartler's announcement as "dropping a turd in the punch." Other scientists (e.g., T.C. Hsu, Robert Chang, Leonard Hayflick, etc.) called upon Gartler to defend his position; other scientists ignored him and continued their work. The genetic testing for the presence of G6PD-A would lead to the Lacks family.

21. Night Doctors...2000: Skloot must get blessing from Henrietta's children/husband to continue her research on the book. In meeting Lawrence, Sonny, Deborah, and Day, she learns that the family do not fully understand the nature of the research and are fearful that these studies/examinations are being done to a clone of their actual mother, not her cells. Day contends that he did not sign papers for Johns Hopkins to obtain/use Henrietta's cells. He argues that he was told he had to cooperate to help Henrietta's/his children. The mistrust/fear of Johns Hopkins is illustrated in the "night doctors" who snatch "black folks" off the street to experiment on them. These stories were conjured by white plantation owners to discourage slaves from running away. However, night doctors are not mere fiction. Many doctors have used slaves/black bodies to conduct experiments, including new surgical techniques which were employed without anesthesia or concern for infection/pain. Further, body snatchers, to satisfy local medical school's need for anatomy/physiology labs, would dig up corpses. The origins and purpose of Johns Hopkins is described and while in theory it was meant to offer medical care to "the indigent sick of this city and its environs, without regard to sex, age, color..." it violated basic civil rights of both patients and nearby residents (e.g., ~7K poor black children drew blood samples to look for genetic predisposition to criminal behavior; purposive exposure to lead).

22. "The Fame She So Richly Deserves"...1970-1973: George Gey, dying of pancreatic cancer, hoped his cells (GeGe) would become immortal. He ordered samples taken during surgery. Doctors, noting that the cancer had spread to stomach, spleen, liver, and intestines and worried that taking a sample would kill him, did not do so. Before his death in 1970, Gey gave his lab assistant permission to release Henrietta's name. After Gey's death, a review of medical records indicated that Henrietta's cancer was misinterpreted/mislabeled. Because her syphilis had suppressed her immune system, the cancer would have aggressively spread, faster than anticipated by doctors and she would have had same treatment. This review appeared in the 1971 (December) journal, *Obstetrics and Gynecology*, along with the first printing of Henrietta's real name. At this time, the Nixon administration signed the National Cancer Act into law and designated \$1.5 billion for cancer research with a call for American-Russian cooperation in this effort. HeLa "hit list" is published in *Science*, listing HeLa contaminated cells along with names of researchers (scarlet letter for the lab/research). Speculation in mainstream media continues to identify HeLa donor (Henrietta's name in scientific publication did not make it to mainstream public/publications). Helen L, Helen Lane, Helen Larsen hypothesized to be: Gey's mistress, a prostitute, figment of Gey's imagination, etc.)

Part Three: Immortality

23. "It's Alive"...1973-1974: The Lacks family finds out about Henrietta's cells. The family, misunderstanding, believe that part of Henrietta is alive; they call Johns Hopkins looking for her; when Hopkins cannot locate her on the patient list, they give up search. Meanwhile, the First International Workshop on Human Gene Mapping gathered to discuss the contamination problem. The solution: obtain DNA sample from Henrietta's children (somatic-cell hybridization to test HLA markers to specifically identify HeLa cells). Day believes that Johns Hopkins is sending someone to do a "cancer test" on the children. Hopkins denies this claim was made. Language and educational barriers account for misunderstanding. NIH requires both informed consent and approval from Hopkins review board but this was codified into law after blood draws from Lacks family. Also, the Department of Health, Education, and Welfare proposed a new Protection of Human Subjects regulation but this too was late, coming after the Lacks blood draw. Researchers had appealed to HEW to exempt blood and tissue collection from new law; HEW declined and specified that the law included them (this information could constitute a violation of privacy as genetic information was available via these mediums). Deborah had long feared dying young like her mother. She lived in poverty, working minimum wage jobs and relying on public transportation. Unable to afford child care, she often brought the children to work or left them unsupervised. Deborah and her family suspected that Henrietta had been well prior to going to Hopkins and that they had made her sick via experimentation; they also feared that Henrietta was still alive and being tortured. Deborah repeatedly calls Hopkins for the results of her "cancer test." After several more blood draws and frequent questions about her mother, Deborah was given Medical Genetics book which had the iconic picture of her mother in her suit, hands on hips.

24. **“Least They Can Do”...1975:** Michael Rogers, reading “Helen Lane Lives!” in urinal set out to find out about her. In 1975, Rogers met and spoke with the Lacks family who were clearly in the dark about the HeLa cells, including the money/profits being made on their sale (for-profit cell banks and biotech companies, not Hopkins....Gey never patented the cell line or sold the cells). The American Type Culture Collection, a nonprofit who funds go mainly toward maintaining/providing pure cultures for science, has been selling HeLa since the 1960s. At time of publishing of common read book, \$256/vial. Deborah continues to struggle with the existence of her mother’s cells. Deborah imagined people-plants = hybrid monster; Ebola/AIDS = Henrietta bleeding, suffocating, etc. A sociological profile of 1976 America is provided: Black Panthers battle racist health-care system, whites profiting off black cells while the family struggled in poverty, minimizing the contribution of a poor black woman. In 1996, Health Insurance Portability and Accountability Act (HIPAA) could result in fines up to \$250K for revealing a patient’s/donor’s personal information/identity. It would also be a violation of 2008 Genetic Information Nondiscrimination Act (to protect people from losing health insurance or employment due to genetic discrimination).

25. **“Who Told You You Could Sell My Spleen?”...1976-1988:** The case of John Moore, who had hairy-cell leukemia, versus UCLA: Moore signed a consent form to:” dispose of any severed tissue or member by cremation.” (Normal spleen weighs less than a pound; Moore’s weighed 22 lbs). Between 1976 and 1983, Moore, a resident of Seattle, returned to LA for follow up exams. After Moore decided to visit a WA doctor, the LA doctor offered to pay for plane tickets and accommodate Moore at the Beverly Wilshire. Moore was also presented with a new consent form that specified that he voluntarily granted UCLA all rights to cell lines/other potential products from blood/bone marrow. After choosing “do not” consent, UCLA doctor became insulting at which point Moore consulted an attorney who patented and profited from a cell line “Mo” (biotech company provided the doctor with financing/stocks > \$3.5 million). Nothing biological was considered patentable until a few years before Moore’s lawsuit (1980), when the SCOTUS ruled on the case of Ananda Mohan Chakrabarty (GE scientists invented a genetically modified bacterium to consume oil was denied patent as it was a living organism): bacterium was not naturally occurring, altered using “human ingenuity.” Moore’s cells had protein useful for treating infections/cancer as well as a rate virus (HTLV) related to HIV that could be used to stop the AIDS epidemic. Moore, prior to doctor’s patent, could have sold directly to company and profited himself. In 1950s, Ted Slavin, a hemophiliac, directly sold his antibodies to interested companies. Beyond the profit, Slavin wanted to advance science. He provided Nobel Prize winning virologist Blumberg an unlimited supply of his blood to uncover the link between hep B and liver cancer. Moore sued UCLA doctor for property rights over own tissues. The scientific community worried that their samples could be taken away due to lack of consent and/or block science’s advancement by holding out for excessive profits. (On hold already were a human-fetal-cell line and a scientist who took a cell line back to native Japan, claiming ownership because the original cells belonged to his mother.) SCOTUS ruled against Moore: when tissues are removed from body with/without consent, any claim to them vanishes for patient. When patients leave tissues at doctor’s office, they are abandoned as human waste. Tissues are “transformed” into invention and thus are intellectual property of doctor. Also, giving patients property rights might “hinder research by restricting access to the necessary raw materials thus creating a field where “with every cell sample a researcher purchases a ticket in a litigation lottery.”

26. **Breach of Privacy...1980-1985:** Zakariyya is released from prison after 7 of his 15 year sentence; as with many ex-offenders, he struggles to overcome the stigma of the underclass based on his criminal history. To make ends meet, he volunteers as a research participant at Hopkins, stopping only when researchers talk about injections. Zakariyya fears they will inject him with AIDS. He sleeps on the street and has difficulty holding jobs. Day and coworkers win a class action lawsuit against Bethlehem Steel for asbestos exposure (\$12K) which he split among his children (\$2K/each). Sonny involved in food stamp ring and narcotics trafficking. Deborah’s son, Alfred, at 18 years old, is arrested several times for minor offenses and AWOL from Marines. The Lacks family become aware of a new publication, by Michael Gold (*Science* 85 reporter), on Henrietta that includes information from her medical records: blood spotting in underwear, syphilis, etc. as well as symptoms of disease/treatment (pain, fever, vomiting, blood poison) and details from the autopsy report (“body split down middle,” “inside of body was studded with pearls,” [i.e., tumors] etc.). Here, the book discusses ethics related to transfer of medical information to reporters, publication of those records without family’s permission, etc. (Hippocratic Oath, Nuremburg Code, American Medical Association Code of Ethics).

27. The Secret of Immortality...1984-1995: zur Hausen discovers cause of Henrietta's cancer (30+ years prior): HPV-18. HeLa cells used to understand HPV strains and how some lead to cancer (inserts its DNA into host's DNA to create proteins that lead to cancer). For Henrietta: HPV's DNA inserted into the long arm of her 11th chromosome thus shutting off her p53 tumor suppressor gene. But, why did Henrietta's cancer grow so quickly? Family members use meta-physical explanations (God's wrath, disease causing spirits, etc.) as well as organic (something living in water in which they swam lived inside Henrietta, even after she died). Further discussion of immortal cells makes clear that it's possible to immortalize cells via exposure to certain viruses/chemicals, but few cells are immortal on their own like HeLa.) Nobel Prize winner, Richard Axel, infected HeLa cells with HIV which led to Jeremy Rifkin (author/activist) to debate the ethics/merits of altering/manipulating DNA, even in laboratories. Rifkin sued Axel (1986) stating violation of 1975 National Environmental Policy Act (HIV infected HeLa could not only contaminate other cultures but spread to people). Later, two scientists claimed that HeLa cells were no longer human after repeated evolutions/manipulations. Leigh Van Valen: "We here propose, in all seriousness, that [HeLa cells] have become a separate species" (*Helacyton gartleri*). Counterargument: "Scientists do not like to think of HeLa cells as being little bits of Henrietta because it's much easier to do science when you disassociate your materials from the people they come from. But if you could get a sample from Henrietta's body today and do DNA fingerprinting on it, her DNA would match the DNA in HeLa cells." Hayflick Limit: normal cells reach their limit when they've doubled about 50X. Scientists unsuccessfully tried to immortalize normal cells (rather than malignant). An enzyme (telomerase) rebuilds telomeres...because of this, HeLa cells outlived and outgrew any other cells it encountered.

28. After London...1996-1999: BBC producer, Adam Curtis, interviews the Lacks family and follow them to Atlanta to Roland Pattillo's Morehouse School of Medicine first annual HeLa Cancer Control Symposium. He likewise petitioned the city to declare October 11 as Henrietta Lacks Day. The Lacks family, especially Deborah, were excited to finally have acknowledgement from the scientific community. At a Smithsonian event in D.C., Deborah asks if it was possible to put DNA from HeLa cells into her eggs to bring her mother back to life. Response: no. At Turner Station, a small museum is created to honor Henrietta and her contribution to science. Mary, Gey's assistant when HeLa cells were immortalized agreed to speak at a small event. The crowd, initially upset about "taking of the cells," fall silent when Mary talks about Henrietta's red toenails. In 1997, Representative Robert Ehrlich paid tribute to Henrietta in Congress. After, Hopkins stated formally that the school had not profited from the cells and that they had shared the cultures freely to advance science. Next, Sir Lord Keenan Kester Cofield who manipulated and lied to the family. Hopkin's attorney investigated Cofield after he tried to access Henrietta's medical records. Background check revealed Cofield was an ex-offender who had filed >150 lawsuits (McDonald's Burger King, Coca-Cola, Four Seasons NYC, various correctional staff and state officials, etc.). Cofield likewise sued Deborah, Lawrence, the Lacks Health History Museum, and several Hopkins officials. Deborah becomes frightened that someone will steal her mother's bible and the locks of hair from her mother/sister, Elsie.

29. A Village of Henriettas...2000: The relationship between Skloot and Deborah is a rocky/tumultuous one, with Deborah intermittently cooperative and aloof. Christoph Lengauer, a Hopkins cancer researcher, used HeLa to develop FISH (fluorescence in situ hybridization) and had sent Deborah a 14x20" print of Henrietta's chromosomes that he had painted using FISH. He also invited Deborah and her family to visit the lab to see the HeLa cells in person. Deborah jealously guards the few possessions she inherited from her mom. Deborah also speaks intently of her mistrust of Hopkins, white people, and especially white scientists for her perceived misuse of Henrietta's cells (man-size rabbits; a London town full of Henriettas, etc.). The chapter ends with Deborah screaming at Skloot for reaching for her mother's medical records.

30. Zakariyya...2000: Zakariyya continues to struggle after he is released from prison. He is currently living in an assisted living facility where he is on probation for being loud/aggressive. Many in the Lacks family believe that Zakariyya's "troubles" are the result of being in utero while Henrietta had cancer. He tells Skloot that he is angry about the doctors stealing her cells, lying about her all while the Lacks family lacked health insurance and access to health care. Zakariyya talks about his inability to get a job despite having certification/skills because of his criminal past. Deborah gives him the cell poster sent by Lengauer; both are excited to visit the lab.

31. **Hela, Goddess of Death...2000-2001:** Deborah and the family have love-hate relationship with Skloot alternating between loving and mistrusting her. The family also struggles with racism and belief that white doctors purposefully targeted Henrietta because she was black and therefore lacked social value as a human being. Skloot shows Deborah how to Google/use internet. Deborah is both fascinated and furious by some of the information she finds. The chapter ends with Deborah's son Alfred arrested for a crime spree (robbery).

32. **"All That's My Mother"...2001:** Skloot, Deborah, and Zakariyya visit Lengauer's lab at Hopkins where they visit the freezer where they store the (millions of) HeLa cells; they also view the cells under a microscope. Langauer patiently explains DNA, cell composition/division, etc. to his visitors. He agreed that the Lacks family should be financially compensated for the sale of HeLa cells.

33. **The Hospital for the Negro Insane...2001:** Skloot takes Deborah to Crownsville (for the Negro Insane) to learn more about her older sister, Elsie who had been institutionalized as a child. Elsie had died at Crownsville of respiratory failure, epilepsy, cerebral palsy. Elsie was also deaf and unable to speak. Deborah wonders if anyone had tried to teach her sign language. The records reveal a long forgotten photograph of Elsie showing her unkempt hair, bruised/swollen eyes and lips; her head is held in place by a pair of white hands and she appears to be screaming. The awful history of Crownsville is revealed: institutional population exceeds more than 2700 (800 above maximum capacity with one doctor for every 225 patients). Patient hygiene was neglected; they slept 2+ per bed (with some tied to their beds); used the bathroom over vents on the floor (instead of toilets); were not separated by age or sex; attacked each other with homemade weapons; and were used as research subjects (e.g., pneumoencephalography).

34. **The Medical Records....2001:** Deborah permits Skloot to review Henrietta's medical records. She insists that Skloot not include the picture of a distressed Elsie in her book. Skloot, finding it endearing that Deborah is protective of her sister, smiles. This results in angry confrontation between the two women. Later, Deborah is calm and wanting to ensure Skloot and she are okay.

35. **Soul Cleansing....2001:** Skloot and Deborah continue their journey to Clover, birthplace of Henrietta. They visit the old home-house and Clover-based relatives. Gary "lays hands" on Deborah and asks a higher power to heal Deborah and lift the burden of the cells from her.

36. **Heavenly Bodies...2001:** Skloot, Deborah and Gary read from the bible and reflect to Deborah's viewing of HeLa cells at Langer's lab: "There are heavenly bodies and earthly bodies, the beauty that belongs to heavenly bodies is different from the beauty that belongs to earthly bodies." From that passage, they speculate that HeLa is Henrietta's spiritual body. Many of the Lacks family believe that Henrietta was chosen by the Lord to become an immortal being.

37. **"Nothing to Be Scared About"...2001:** Deborah takes placement tests for school and registered for classes to get to 10th grade level and thus qualify for community college classes (so she could understand the science). Deborah's son, Alfred, now has attempted murder added to robbery charges. Lawrence's son, also arrested in separate robbery charge, was also housed at same jail as Alfred. Right before the National Foundation for Cancer Research conference, featuring Deborah as a guest speaker, 9/11/01 happened and the conference was cancelled. Deborah suffers a stroke which changes her focus from school to her family, especially her grandchildren.

38. **The Long Road to Clover...2009:** Clover is gone. Skloot is unable to reach Deborah by phone and leaves several unanswered messages. She finally learns that Deborah died from a heart attack just after Mother's Day.