Sociotechnical Synthesis

Healthcare Systems Modeling

(Technical Topic)

Technological Politics of HeLa Cells

(STS Topic)

Patricia Edouard

On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

Signed: 

Approved: _____ Date _____

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Approved: _____ Date _____

Dr. Matt Henchey, Department of Biomedical Engineering

Socio-Technical Synthesis: Diversity of Clinical Trials and the use of HeLa cells

My technical work and my STS research are connected primarily through the ways they address the challenges of diversity and accountability within healthcare systems and institutions. However, the two works differ in how they address diversity and accountability, and occur in very different time periods. My technical work focuses on how the current clinical trial standards and guidelines could be changed to incorporate more diversity and accountability, whereas my research explores the implications of the lack of diversity and accountability in medicine. So, while my technical work and STS research address diversity and accountability in healthcare from different angles, the theme of diversity inclusion and accountability as vital instruments to public trust in medical practice and research is consistent across both projects.

My technical work explores the current standards and guidelines that shape the conduction of clinical trials. My capstone project required extensive research about the steps required to conduct a clinical trial. Furthermore, additional information was acquired to explore the potential of utilizing new recruitment strategies, such as telehealth and remote trials, to increase the diversity amongst clinical trial participant pools. The goal of this project is to determine whether the inclusion of new recruitment strategies can provide new avenues for increasing diversity and inclusion in the conduction of the clinical trial process, in comparison to the current standards and guidelines that determine the conduction of clinical trials. I hope that this project serves as a foundation to inform policy decisions to adjust healthcare delivery services as needed based on patient demand, as well as improve future patient experiences and outcomes.

My STS research examines the ethical concerns of the use of human biospecimens in clinical research, which has brought about concerns about the limits of patient consent and scientific innovation. Specifically, my research explores Henrietta Lacks, an African-American

woman, whose cancer cells are the source of the HeLa cell line, the first immortalized human cell line and one of the most important cell lines in medical research. Landon Winner's theory of technological politics is utilized to illustrate both the technical work and political work of HeLa cells. My claim is that despite the profound impact of HeLa cells on scientific innovation and discovery, the continued commercial use of the cells is rooted with ethical concerns that express and shape power relations in regards to patient consent, confidentiality, exploitation, and racial inequity. My paper illustrates this claim by exploring the numerous contributions of HeLa cells to scientific, as well as explores the mistreatment of Henrietta Lacks, the commercialization of HeLa cells, and the enduring racial inequities that continue to be perpetuated in U.S. healthcare systems and institutions.

The combined results of the technical and STS projects will serve to support healthcare systems in the future through the use of technological innovation and inclusion to improve patient outcomes and experience. My technical work gave me a deeper understanding of the standards and guidelines that inform the conduction of clinical trials, which provided me with the foundations that govern accountability and trust within the healthcare community. My research project explored the ways in which the standards that guide the actions of healthcare professionals may not be as trustworthy and ethical as the society believes. By working on both projects simultaneously, I was able to explore the implications of the social and technical dynamics that surround technology, allowing for an exploration of targeted recommendations that will influence and change the way healthcare systems interact with patients.

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