Murder, Liberation, and Art in the Engineering Ivory: An Epistemically Aligned Qualitative Study That Illustrates the Engineering PhD Spirit-Murdering Experiences of Black Womxn

by

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A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Approved April 2023 by the
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ARIZONA STATE UNIVERSITY

May 2023

ABSTRACT

For decades, engineering scholarship has presented data to address the underrepresentation of Black womxn in the engineering doctoral community. American Society of Engineering Education (ASEE)'s Engineering by the Numbers Report (2021) statistically showed that only 57 Black womxn out of 10,037 scholars received engineering doctorates in 2021. Engineering scholars have theorized about constructs ranging from whiteness to explain the system, to doctoral socialization to explain the culture, to retention explain the experiences. Yet, even with the plethora of scholarship, the problem of underrepresentation has remained consistent with limited action towards change from the faculty, the program, or the institution. Therefore, I aim to address this problem by cultivating emotional resonance toward action within the engineering community regarding engineering doctoral program underrepresentation for Black womxn.

Using Arts-Based Research (ABR) and Black Feminist Thought (BFT), this dissertation illustrates the engineering PhD spirit-murdering experiences of Black womxn. Six Homegirls intellectually contributed to this study by sharing their time and experiences through artistic expressions and homegirl conversations. Through the lens of BFT's matrix of domination, the composite blog shows that spirit-murdering for these Homegirls: 1) is a targeted act that is dehumanizing 2) occurs because of the aloof nature and capitalist ideals of the engineering academy, and 3) causes further conflict in negotiating identities as Black, woman, professional, researcher, and student. Leaning on BFT's grounding as an Afrocentric methodological approach, the composite poem illustrates that these Homegirls: 1) have a common, understood epistemology because of

their shared experiences of being Black and woman in their current, multi-layered social locations, 2) identify strongly with their positionality and values while describing their outsider-within status, and 3) experience spirit-murdering in an emotional, intellectual, and spiritual way that then results in physical manifestations. Rooted in BFT's ethic of caring, the hip-hop mixtape's progression describes homegirl's spirit-renewal tactics as: 1) owning their professional identity, 2) dispelling projected biases, stereotypes, and aggressions, 3) calling out inequities in their interpersonal relationships and program culture, 4) learning to set boundaries to protect themselves, and 5) standing on their ways of knowing and being.

DEDICATION

"There are still many causes worth sacrificing for, so much history yet to be made." – Michelle Obama

This dissertation is dedicated to my nieces and nephew. To London, Lauren, Melodi, Nolya, and D'hani, TT wants you to forever be YOUR version of your best selves and know that there is power in the agency and beauty of Black womxn. To Nolyn, TT wants you to be authentic to who you are and what you love, and continue being fun-loving, curious, and free because it will allow you to engage in life and with people in ways that fuel your future success.

This dissertation is dedicated to my Papa, James Moye, who always allowed me to feel seen by a Black man. He was my father figure, my best friend, and my role model. His loving and carefree nature was so instrumental in my growth as an independent thinker. He always asked me "How's your love life?" even at a young age. I always thought he meant a significant other, but I now believe he was asking me how I was showing love to myself and honoring who I was. I know now, Papa… AND hopefully now that I'm done, I can have a significant other love life as well. :-D

This dissertation is dedicated to my future husband and children. I don't know who you are or when you'll come, but I do know that my love for you will be exponentially greater and I hope that you are proud of the things I'm accomplishing to fulfill my purpose.

This dissertation is dedicated to my six Homegirls who intellectually contributed to the work that is presented here by sharing their experiences and trusting me to present them in caring and liberatory ways.

I love you all.

ACKNOWLEDGMENTS

"Without community, there is no liberation." – Audre Lorde

1. I acknowledge and honor the lives and legacies of the Black community, whose experiences serve as the impetus for my work, and the lives and legacies of the Akimel O'odham (Pima) and Pee Posh (Maricopa) peoples, whose ancestral homelands provide the institutional space for me to conduct my work.
2. I honor my mother, Marvilous E. Clemons, whose ideals on Blackness, womanhood, and spirituality have cultivated a strong sense of identity for me: blackness as a form of strength, womanhood as a form of care, and spirituality as a form of purpose.
3. I honor my grandmother, Robin Marie Moye, whose attitude towards life, love, and oppression have curated a strong sense of action for me: life as a form of serving, love as a form of being, and oppression as a force for activism.
4. I honor my cousin, Nakedria O'Ferrall, aka Big Nicci, (and Ayden and Ba) for literally being my rock when I needed stability, safety, support, smiles, and strength, and for always understanding me and making me feel like that bi*ch.
5. I honor my fathers, Sammie Lee and David, my stepmom, Pam, my pastor, Timothy Bailey, and my siblings, Joyful, Essence, Michael, Jazzalyn, and Janaya for always being my personal entourage, and giving me reassurance when I felt insecure about my academic endeavors.
6. I honor my family and friends (with a special S/O to Derius Galvez, Dr. Katreena Thomas, Muki Fon, and DaMond Speights) across the South, Midwest, and West

Coast for being my foundation of peace, comfort, validation, entertainment, and energy.

7. I honor Dr. Brooke Coley and the SPACE Crew, who served as the advisor and the lab that helped me heal from my own spirit-murdering experiences by supporting me as an intellectual, but most of all, a human being.
8. I honor my committee members, Drs. Jennifer Bekki and James Holly, Jr. for providing guidance in my intellectual, professional, and emotional development endeavors.
9. I honor my first-year cohort at ASU who we refer to as the Gangstas in Engineering Education (GEE), and especially my Girls in the Hood (Rachel Figard and Hadley Perkins).
10. I honor my SoRHOrs of Sigma Gamma Rho Sorority, Inc., especially the Tenacious Theta Phi Collegiate Chapter where I was born and bred, and the Trailblazing Beta Mu Sigma Alumnae Chapter where I'm supported and led.
11. I honor the Blk Doc Community, which provided me with peers I identify with, scholars that are diverse and critical, and resources that I didn't know I needed.

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CHAPTER 1

INTRODUCTION

Purpose

"Maybe your gift is being in denial…" – Little Boy on Encanto

For decades, engineering scholarship has presented data to address the underrepresentation of Black womxn in the engineering doctoral community; yet, the statistics hardly change every year. ASEE's Engineering by the Numbers Report (American Society for Engineering Education, 2022) statistically showed that only 57 Black womxn out of 10,037 scholars received engineering doctorates in 2021. 4000+ articles about Black womxn and engineering, as well as 350+ articles about Black womxn in doctoral programs showed that scholars have been theorizing about constructs related to underrepresentation issues for over 50+ years. Engineering scholars have theorized about constructs ranging from whiteness (Holly & Masta, 2021; Godwin, 2020; Pawley, 2017) to explain the system, doctoral socialization (Ellis, 2001) to explain the culture, and retention (Lott et al., 2009; Nicole & DeBoer, 2020) to explain the experiences. Holly and Masta (2021) discussed how race theories should be used in conjunction with whiteness theories in order to situate whiteness as the main cause of racism that influence the issue of underrepresentation. Pawley (2017) also addressed the need for making whiteness visible to show that diversity should be expected in engineering education and whiteness is the reason it seems like an alternative thing. While whiteness works to explain the system, phenomena like doctoral socialization works to explain the culture. Ellis (2001) examined the effects of race and gender on doctoral socialization and found

that it affected the socialization, satisfaction level, and commitment to completion of Black womxn more than others groups. In a systemized literature review, Nicole and DeBoer (2020) found that personal factors (i.e. internal motivation, identity development, perception of support, and resilience), social factors (i.e. sense of belonging, discrimination, advisor/faculty support, mentoring, and work-life balance), and institutional factors (i.e. department/campus culture, access to marginalized role models, and race/gender related organizations and networks) are all factors that influence retention, which influences underrepresentation. Yet, even with the plethora of scholarship, the problem of underrepresentation has remained consistent with limited action towards change from faculty, programs, or institutions. There was little work done specifically on Black womxn in engineering doctoral programs and none that focused on using emotional resonance to provoke action.

My search of the literature indicated that this limited engagement with implementable actions could be a result of the "objective" (Beddoes, 2014; Wilson & Nichols, 2002) and aloof nature of engineering academics within the ivory tower (Subbaraman, 2020). It could be that faculty see underrepresentation as an issue from an objective standpoint but are aloof to their role in the grand scheme of things. They may be quick to read and understand as theorists, but not as quick to take those theories into practice with themselves. By making the underrepresentation of Black womxn engineering doctoral candidates an "engineering" or "doctoral program" problem, academics can absolve themselves of any conviction, responsibility, or action. However, this detachment does not lead to transformative change within the programs or within the engineering space. Consequently, we should consider another vantage point to addressing

underrepresentation that elicits a response or an action from the faculty and other institutional stakeholders involved. Engaging in arts-based research methods (Barone & Eisner, 2012; Butler-Kisber, 2018), as an example vantage point, could humanize people in engineering doctoral programs by 1) allowing engineering academics to resonate to the emotional aspect of engineering doctoral marginalization and inequities, 2) convicting their spirits to understand the underrepresentation from an individual and collective reflection, and 3) advocating for using and accepting epistemologies and methods that are more aligned with individual positionality and identity. Therefore, I aimed to address underrepresentation by cultivating emotional resonance (Barone & Eisner, 2012) toward action within the engineering community regarding engineering doctoral program marginalization as experienced by Black womxn.

Using Arts-Based Research (ABR) and Black Feminist Thought (BFT), this dissertation explored epistemically aligned interpretive methods used to illustrate the engineering PhD spirit-murdering experiences of Black womxn. The overarching research question for this dissertation study are:

1. ***What are the engineering PhD spirit-murdering experiences of Black womxn?***

In order to address the research question, I developed three journal papers using the artistic creations, art narratives, and homegirl conversations of my six Homegirls (aka research participants), and presented their findings in three different interpretive ways that were aligned with Black feminist epistemology (Hill Collins, 2009a) and Black feminine culture (Davis, 2017). Throughout the three journal papers, I used ABR and BFT as effective methods of scholarship in engineering spaces to promote the humanization of Black womxn engineering doctoral students and action of the

engineering program faculty. As the engineering doctoral community tries to expand in representation, innovation, and scholarship, it is imperative that we address the issues of inequities from a holistic view that is critical and liberatory. If we can address the issue of inequities for the most marginalized and underrepresented group in engineering doctoral programs, we can then create movement towards liberation for all.

I find it important to note here that in centering the ways of knowing of Black womxn, the language choices for this study include African American Vernacular English (AAVE) (Rickford, 1999) and come from a stance of empowerment for the Black community. Therefore, I highlight a few alternative words that have been used in place of more traditional, Western researcher terms. First, I start with the term "womxn". I am operationalizing the term "womxn" only to decenter men and sexism and to center and empower womxn. I do not use this as an alternative to be inclusive to trans women and femme-presenting nonbinary persons because they are included in the term women and do not need a separate classification. Secondly, I discuss the term intellectual contributor. For too long, the intellectual contributions of Black womxn in the academy, and outside the academy, have been ignored, unfavored, undervalued, discredited, and rejected. Not today. These Black womxn are not just participating in these studies but providing intellectual contributions that they are not getting recognition or accolades for; instead, they are being used to advance the field and its associated academic scholarship. In alignment with the need for Black womxn to define their own identities, I will be referring to participants as intellectual contributors (ICs) or Homegirls who are investing in the advancement of this scholarship. Thirdly, I move to the term Homegirl. Homegirl is a slang term in AAVE that refers to a female acquaintance from your own town,

neighborhood, or social background. These womxn are not just contributors to my study, but my Homegirls in a sense that we share common identity markers, and we will "go to bat for" (fight for each other) in the same way that we would our family and best friends. Therefore, I refer to our semi-structured interview as a Homegirl conversation. Lastly, I want to address the supporters of this work. I, Fantasi Nicole, do not consider this work to be that of my own. I am the idea generator that is being used as a vessel to highlight the knowledge and experiences of my peers, my Homegirls. For protection purposes, I cannot list all their names as authors, although I think it would be more than fair for their contributions to my scholarship. Additionally, without the support of my advisor as she helps me to revive my murdered spirit through empowerment and activism, I could not have had the energy or the support to do this work. So, I show solidarity with, and connection to, my Homegirls and my advisor who have made this research possible for me. This is our work, not just mine.

Reflection

"I had to put you in your place." – Advisor Bee

This was Advisor Bee's response to me stating that I felt she had seen me as an "Angry Black Woman" (J. Celeste Walley-Jean, 2009) because I asked her a clarifying question during a research conversation we had via ping on Basecamp. I froze, staring at the screen as she continued to express her feelings regarding my statement. My face flushed red and my body became hot with rage. Yet, I felt paralyzed like I could not move or speak. I was honestly in shock. I could not believe that those words came out of

her mouth, let alone to me, the only Black woman that she had in her lab, because I asked a question. I finally blurted out "There will never be a place that you can put me in."

This was the first time I experienced spirit-murdering (Williams, 1987) in an engineering doctoral program. I had heard the horror stories, but I never thought that this would happen to me with this particular person. I knew that she was a grant-winning, project-yielding academic who had a hive of hardworking students (hence the name "Bee). But, I didn't think she would ever stereotype me in that way. I felt myself begin to shrink and become a mere fraction of who I was. The agency, intuitiveness, and professionalism murdered from the implications of a critical power dynamic (French Jr. & Raven, 1959), with no idea how to revive myself. And then I meet Mentor Phoenix. Mentor Phoenix, a Black engineering scholar, saw herself in me, and introduced me to a book called "Eloquent Rage" by Britney Cooper (Cooper, 2018). I read that book from cover to cover and felt seen. I felt like she had watched my life and wrote a book about it. Then I realized that I wasn't the only one struggling with identity in fucked up spaces. Mentor Phoenix had given me hope and encouraged me to have a rebirth with myself and to remain persistent (hence the name Phoenix). So, I decided to transition into a new space, with a new advisor, and challenge what had been done.

"I know this will likely feel like an overwhelming email. There is a lot in here, and we are at a critical point in your path." – Advisor Crow

An email. 14722 words total. Only 123 words were neutral, general, and direct. The other 14,599 words, in my opinion, were meant to cover the asses of the faculty that were involved in another spirit-murdering scene to discredit my professionalism. Advisor

Crow was an engineering academic that I bonded with because of her ability to have a higher perspective and to be flexible with people's needs; however, that higher perspective shifted to a trickster type mentality based on the coding of that email (hence the name "Crow").

This email was the final breaking point for my time at my previous institution, and it all started because I chose to pursue activities outside academia and left a research assignment at home during travel. This resulted in an uproar that almost led to me being defunded and an email that made me look like an incompetent, underperforming student. I cried for three days straight. I did not feel safe to pursue my education anymore. I questioned myself as an engineer, a scholar, and a researcher. And then I had a heart to heart with Mentor Eagle, who encouraged me to leave that unsafe space in a journey to renew my spirit AND get the degree that I came for. I soon realized that he represented the death of those spirit-murdering spaces and the embarkment of my own spirit-renewal.

"You're definitely NOT what they'd traditionally pick, but you are CERTAINLY what they need! – Advisor Goat

This was a portion of a text message received from my advisor, Dr. Brooke Coley, The Goat, after she nominated me to be the student speaker at my Engineering PhD Hooding Ceremony. Advisor Goat allowed me the ability to be me in abundance, to be creative, fertile with ideas, in a way that cultivated a new intellectual and academic life for me. She saw me for who I was and wanted to be and supported me renewing my spirit with self again.

In short, my spirit-murdering experiences lead me to mentors and BFT which led me to want to heal personally and understand this phenomenon intellectually to further my activistic desires. Therefore, an element of my work is autoethnographic in design, because I would not be doing this research if I had not had those types of experiences to identify them as the primary cause, in my eyes, for the issue of underrepresentation.

Motivation

The motivation for this critical ethnographic (Creswell & Poth, 2018) work is to explore the underrepresentation of Black womxn engineering doctoral students in a way that cultivates emotional resonance within the engineering community, invoking them to change inequitable practices that they may see as objective. In order to do that, I will illustrate the engineering PhD spirit-murdering experiences of Black womxn through an analytical lens of BFT and an interpretative presentation of ABR. I am hopeful that this work will help promote an increase in the representation of Black womxn engineering doctoral students by: 1) providing examples of critical yet liberatory methods that can be used to conduct this research and present call to actions, 2) highlighting inequitable practices that cause underrepresentation for faculty to mitigate, and 3) showcasing ways of humanizing and centering students as people who have agency and spirits that deserve to be whole.

Positionality

As a Black feminist killjoy (Ahmed, 2010) who has been enrolled in 2 engineering PhD programs with 3 different academic advisors, I use this research as my own intellectual activism. Having attended 4 historically white institutions (HWIs) in 3

U.S. regions, I have had my fair share of experiences that have served the role of breaking me down to a mere fraction of myself. Everything that I thought I was, or believed myself to be, came into question through my experiences in educational settings. What I knew to be my #BlackGirlMagic was not viewed in academia as magic at all, but a threat to the traditional ways of the academy. At one point, I began to question my ability to be a researcher. I questioned whether I was good enough and who would care. Then I began to write. Not for myself, but for others. For the womxn who were having experiences similar, different, and in parallel with me. For the Black scholars who were struggling with their identities in academia too. I wrote until I felt a piece of me heal. I exposed until I felt a piece of me mend. I empowered until I felt a piece of me restore. I knew then what I had to do. I had to be the critical researcher that would heal by serving my fellow Black womxn in similar spaces and calling attention to the bullshit that made our persistence damn near impossible. I had to be the Black feminist killjoy who served to empower others, even if that meant that I would never be seen in a positive light again. With this dissertation, through this work, I take a stance in solidarity with those who aim for equity and justice for all, not just some. And although I have my own experiences, I will use myself as an instrument that centers the perspectives of the Black womxn that I am in service to, my intellectual contributors, my Homegirls.

Conceptual Framework

The conceptual framework is based on the concepts of spirit-murdering and BFT. Let's look at it from a linear perspective using Figure 1.

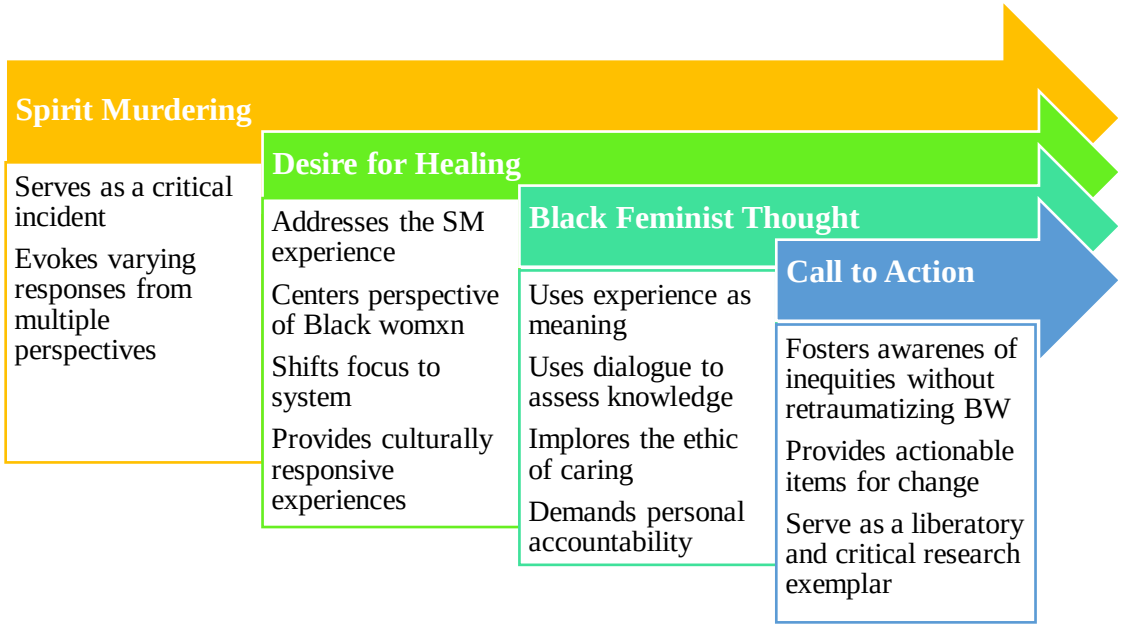

Diagram 1. Flow of Conceptual Framework.

For the framing of this dissertation, I had to consider what I wanted the construct that united my Homegirls to be. I chose the concept of spirit-murdering (Love, 2017; Williams, 1987). Conceptualized by two Black womxn academics, spirit-murdering is operationalized as "the personal, psychological, and spiritual injuries to people of color through the fixed, yet fluid and moldable, structures of racism, privilege, and power" (Love, 2014, 2017; Williams, 1987). It is important here to note that I consider the problem of underrepresentation a meta spirit-murdering experience itself. For this study, I considered spirit-murdering to be the critical incident that all my Homegirls had in common as a uniting factor. I used spirit murdering for several reasons: 1) it operationalizes racialized experiences with trauma that allowed for the addition of gendered experiences as well, 2) it highlights the visceral reactions that Black womxn experience from an accumulation of harm that leads to macro-level consequences, and 3)

it serves as a concept that could be used to evoke an emotional response because the term "spirit-murdering" itself causes imagery that resonates in a humanizing way. Spirit-murdering is the critical incident to identify specific intellectual trauma rooted in racism and sexism; however, it is not the primary focus of this dissertation because I did not want to solely focus on recounting the trauma and oppression related to these experiences. Therefore, I needed to have a theoretical lens that allowed me to find a way to discuss oppression that was affirming and liberating to Black womxn but critical to the problem of underrepresentation. Therefore, I needed to use BFT as a liberatory antidote.

Conceptualized by Patricia Hill Collins, BFT (Hill Collins, 2009a) is a liberatory theory for Black womxn because it centers the perspective and well-being of Black womxn and calls for acceptance of their ways of knowing and being. It is vital to exploring how the complexities of BW's intersecting oppressions of race, class, and more shape their experiences, how that experience shapes their consciousness, and how this consciousness can inform change within their social location and spheres of influence. Exploring it in the research design, I use the notion of Black feminist standpoint epistemology and everyday knowledge (Alinia, 2015; Hill Collins, 2009b) as centering Black womxn's ways of knowing within their engineering doctoral programs and how they conceptualize, experience, and reflect on the construct of spirit-murdering.. The research design aligns with the tenets of BFT through what my Homegirls chose to focus on, express their ways of knowing and experiencing through artistic methods, and the overarching purpose of social justice. In alignment with this theory, this work does not argue that there is a homogeneous way of knowing for Black womxn (Black Feminisms, 2021; Hill Collins, 2009b). However, it asserts that, even though there are different

individual experiences, there are common core themes due to a shared legacy of oppression for Black womxn in the US. Therefore, through this research design and engagement with this scholarship, I use this critical social theory to provide the spirit-renewal needed to resist intersecting oppressions in engineering doctoral programs as an act of intellectual activism (Hill Collins, 2013).

Using this conceptual framework allowed me to: 1) align the perspective of my Homegirls; 2) provide interpretation for experiences without focusing on a representation of trauma for BW; 3) support the importance of using different modes of expression (in the narrative form through Homegirl conversations) and explanation (arts based expression and interpretive meaning-making); 4) advance Black intellectual scholarship by critically approaching this dissertation study using epistemically aligned theories and methodologies in efforts to disseminate the outputs of this work broadly to serve as an exemplar of the potential for these methods.

Methodologies

The methodology of my dissertation is centered around Black Feminist Thought as a lens to justify why I chose to use the analytical lens that I did. First, BFT identifies BW as the experts of their own knowledge and experiences as an individual and as a collective group. The individual aspect represents me using a partial autoethnography as a lens and positionality for designing the study the way I did. This critical ethnography (Creswell & Poth, 2018) uses an analytical lens that allows me to critically explore spirit-murdering as a concept that impacts underrepresentation without centering the trauma on BW. Second, BFT promotes the uses of dialogue and non-traditional academic means of

scholarship as justified means of collecting, analyzing, and presenting data. The Homegirl conversations and art narrative serve as the narrative inquiry (Butler-Kisber, 2018) used to gather verbal expressions of data. The creation of art serves as the ABR employed to gather, interpret, and present the artistic expressions of my Homegirls. The research methods in my data set included each Homegirl: 1) engaging in an initial conversation to assess if we operationalized spirit-murdering in the same way, 2) creating an artistic representation of spirit-murdering, 3) explaining the meaning and elements of that artistic creation, and 4) a final Homegirl conversation to further explore spirit-murdering and their use of the arts-based research methods.

In order to conduct this research ethically, there are several things that I needed to take into consideration. There were six Homegirls who intellectually contributed to this dissertation study. Each of the Homegirls had to engage in all four research activities, resulting in twenty-four pieces of data to analyze. The collection of the research activities happened during the most recent time of socialized racial uprising. Therefore, the consciousness of racism, sexism, and other -isms were heightened topics of discussion and sensitive points of trauma. This means that I was inviting people into a vulnerable experience to observe scholarship, and had to take extra care of considering their spiritual, mental, and emotional well-beings after the conversation to ensure that the Homegirls' engagement was not retraumatizing. Therefore, I prioritized data presentation in a way that honored the BW as experts of their own experiences and not victims of trauma and circumstance. (So, if you are looking for trauma porn (Wellington, 2021), you will not find it here).

During the data presentation phase, I also had to take extra care because with 57 BW being awarded doctoral degrees out of 10,037, the notion of identifiability is heightened for my Homegirls. Therefore, they chose their own pseudonyms and we went through a synthesized member checking process (Birt et al., 2016) which provided us the ability to engage with, make additions to, and interpret the data months after the last form of data was collected to ensure the credibility of the research presented in the findings. This is also why I chose to use composites (combining experiences to seem as though they came from one person) because I wanted to protect their identities. Prioritizing the use of (AAVE) (Rickford, 1999), aka Slang, I ensured that I could present their data in the most authentic and true to form way.

As a part of the ethics of care, I took into consideration how this dissertation, and this data, could be used. Therefore, I want to state now what I would like in terms of the appropriate use of any information for this data. The first implication is that I would want it to serve as an example of how to use an ethic of care (Gonzalez, 2022; Hill Collins, 2009b) when conducting research on persons with marginalized identities. The second implication is that researchers should consider data collection methods that are culturally relevant to the groups they are studying (Coley & Thomas, 2023). The third implication is that researchers use this as an example of being true and authentic to self and the intellectual contributors when presenting the data that you have. The fourth implication is that this dissertation can be used as a launch point for marrying systems of oppression, arts-based research methods, and marginalized identities for engineering research rooted in the purpose of social justice.

Significance

The significance of this work is in the way it problematizes the issue of underrepresentation for BW in engineering doctoral programs. This issue is a spirit-murdering scene within itself. Although we say that more engineers are needed, research often centers on constructs that focus on what the student is doing or with a specific focus on whiteness, for example, socioeconomic status (SES) (Donaldson et al., 2008). Common mainstream white supremacist answers aren't yielding the same results as this research because the lens is not through ethics of caring and humanizing BW in engineering doctoral programs. This dissertation work should help promote an increase in the representation of Black womxn engineering doctoral students by: 1) providing examples of critical yet liberatory methods that can be used to conduct this research and present call to actions, 2) highlighting inequitable practices for faculty to mitigate that cause underrepresentation, and 3) showcasing ways of humanizing and centering students as people who have agency and spirits that deserve to be whole. This significance can be shown in the resulting three journal articles.

Journal Paper #1 Abstract

With only 0.56% of Black womxn being awarded engineering doctorates in the year 2021, the problem of underrepresentation remains persistent and the issue of systemic inequities reigns supreme. Black womxn continue to be continue to be caught in the matrix of oppression regarding their intersectional identity within an engineering doctoral context, experiencing spirit-murdering as a result. Spirit-murdering is a phenomenon used to describe the long-term impact of experiences that cause personal, psychological, and emotional harm to persons of color. In order to combat the problem of underrepresentation, faculty must combat spirit-murdering. In order to combat spirit-murdering, faculty must understand and disrupt how it occurs and how they curate spaces that help it manifest.

Using the art narratives and homegirl conversations for a larger dissertation study, I use the theoretical framing of Black feminist thought and the construction of a composite narrative in blog to understand and depict the varying ways that spirit-murdering manifests in the lives of six Black womxn engineering PhD students and holders, who we refer to as our homegirls, our intellectual contributors. Findings show that spirit-murdering: 1) is a targeted act that is dehumanizing; 2) occurs because of the aloof nature and capitalist ideals of the engineering academy; and 3) causes further conflict in negotiating identities as Black, woman, professional, researcher, and student.

Journal Paper #2 Abstract

This journal paper seeks to engage debate for the use of multi-modal representations of qualitative inquiry within engineering education research. Using representations of art, poetic inquiry, and creative analytical processes, this research seeks to understand Black womxn's reflections of their spirit-murdering experiences in their respective engineering doctoral programs. The poem itself, compiled from the excerpts of six Homegirls, or intellectual contributors, highlights the collective and individual accounts of the impact of spirit-murdering experiences. The art itself, used as a culminating piece to corroborate the composite poem. Findings from this research shows that Black womxn: 1) share common epistemologies with differing positionalities that are subject to the same spirit-murdering, 2) experience targeted acts of spirit-murdering that result in longitudinal impacts on professional endeavors, personal health, and intellectual efficacy, and 3) often operate within the dialectical relationship between oppression and activism within their programs.

Journal Paper #3 Abstract

This study seeks to interpret Black womxn engineering doctoral students' sentiments on the transition from spirit-murder to spirit-renewal using arts-based research methods and Hip-Hop. Using Black feminist thought to center Black womxn's epistemologies, this research aimed to represent the collective data of their painful experiences into joyful expressions, which is representative of most Black womxn's relationship with Hip-Hop. Data collection used for the findings in this paper include homegirl conversations, art creations, and art narratives. These conversations were analyzed to find commonalities and salient themes across my Homegirls (Clarke & Braun, 2017). The salient themes were then compiled to develop the six raps that make up the mini mixtape presented in the results section. Rooted in BFT's ethic of caring, the hip-hop mixtape's progression describes homegirl's spirit-renewal tactics as: 1) owning their professional identity, 2) dispelling projected biases, stereotypes, and aggressions, 3) calling out inequities in their interpersonal relationships and program culture, 4) learning to set boundaries to protect themselves, and 5) standing on their ways of knowing and being.

CHAPTER 2

JOURNAL PAPER #1 - MURDER IN THE MATRIX OF THE IVORY: EXPLORING HOW SPIRIT-MURDERING MANIFESTS WITHIN ENGINEERING DOCTORAL PROGRAMS FOR BLACK WOMXN

Abstract

With only 0.56% of Black womxn being awarded engineering doctorates in the year 2021, the problem of underrepresentation remains persistent and the issue of systemic inequities reigns supreme. Black womxn continue to be continue to be caught in the matrix of oppression regarding their intersectional identity within an engineering doctoral context, experiencing spirit-murdering as a result. Spirit-murdering is a phenomenon used to describe the long-term impact of experiences that cause personal, psychological, and emotional harm to persons of color. In order to combat spirit-murdering, faculty must understand and disrupt how it occurs and how they curate spaces that help it manifest.

Using the art narratives and homegirl conversations for a larger dissertation study, I use the theoretical framing of Black feminist thought and the construction of a composite narrative in blog to understand and depict the varying ways that spirit-murdering manifests in the lives of six Black womxn engineering PhD students and holders, who we refer to as our homegirls, our intellectual contributors. Findings show that spirit-murdering: 1) is a targeted act that is dehumanizing; 2) occurs because of the aloof nature and capitalist ideals of the engineering academy; and 3) causes further conflict in negotiating identities as Black, woman, professional, researcher, and student.

Introduction

The only one. A prized possession.

Truly filled with hope and outward expression.

I came in thinking "oh, life would be grand"

For a Black womxn who was of high demand.

But I speak my truth and my peers despise,

I do my work, but my advisor denies

I live my life, but I can't seem to advance

And they wonder why I am sick of this song and dance.

- Fantasi Nicole

Black womxn (BW) continue to be caught in the matrix of oppression regarding their intersectional identity within an engineering doctoral context. People in this social group are both hyper-visible and invisible, overvalued and undervalued, respected yet demeaned, and admired yet shamed (E. O. McGee & Bentley, 2017; E. O. McGee & Martin, 2011; E. O. McGee & Stovall, 2020; Robinson, 2012; Ross et al., 2017). With the desire to make a difference in the world and in our communities, BW agree to endure the obvious lack of racial and gendered representation (E. O. McGee & Robinson, 2020), the "not so micro" microaggressions (Guy & Boards, 2019; Wilkins-Yel et al., 2019), and the turmoil of systemic racism (Holly, 2020) because BW aim for a higher purpose. However, what happens when systemic racism and socialized practices (Ellis, 2001; Holly, 2020) start chipping away at their confidence (Freeman A. Hrabowski, III, 2018), their sense of belonging (Bucher, 2017; Johnson, 2012; Nicole & DeBoer, 2020), or emotional and mental well-being (Wilkins-Yel et al., 2022), and our scholarly

development? What happens when the very thing that brings you such pain and distress is but a mere extension of the fabric of what engineering doctoral education is made of? What happens when you are spirit-murdered and it causes you to become a fraction of your former self, a casualty of pursuit of an academic degree and professional career?

The concept of spirit-murdering should be of intentional consideration in aiming to cultivate socially just engineering doctoral programs that disrupt anti-Black and anti-womxn practices and policies. Spirit-murdering describes the action and long-term residual impact of personal, psychological, and/or spiritual harm imposed on Black students. First conceptualized by Patricia Williams in legal studies (P. Williams, 1987), then later reconceptualized by Bettina Love to study Black boys and girls in K-12 environments (Love, 2014, 2017), spirit-murdering is now currently being situated as framing to understand the impact of harmful experiences in higher education (Hines & Wilmot, 2018). However, the concept of spirit-murder has not yet been applied to the unique experiences of Black womxn in the context of engineering doctoral programs. Insights from this work could inform the adoption of new practices and policies that evoke action amongst institutional stakeholders to liberatory experiences for all students, especially the historically marginalized, while critically assessing inequities. Therefore, I seek to answer the following research question:

How does spirit murder manifest for Black womxn engineering doctoral students within BFT's matrix of domination?

Using the art narratives and homegirl conversations for a larger dissertation study, I use the theoretical framing of Black feminist thought (Hill Collins, 2009a) and the

construction of a composite narrative in blog (Baxter Magolda, 2004; Willis, 2019) to understand and depict the varying ways that spirit-murdering manifests in the lives of six Black womxn engineering PhD students and holders, who we refer to as our Homegirls, our intellectual contributors.

Data collection for the overall dissertation study includes homegirl conversations (Hoffman & Martin, 2020; Nathan et al., 2023), art creation (Barone & Eisner, 2012), and art narratives (Milne & Muir, 2020) that each served as tools for my Homegirls to authentically share their experiences in ways that are unique and salient to them. The data included in this paper are results from the art narratives and homegirl conversations. This work aims to explore Black womxn's engineering doctoral program spirit-murdering experiences through a lens of BFT's matrix of domination (Hill Collins, 2009a). It is an immediate intent that this work will invoke actions that disrupt and replace with liberatory practices that seek to foster healing, development, and support for Black womxn in engineering higher education.

Language

I find it important to note here that, because I am centering the ways of knowing of Black womxn, the language choices for this study include African American Vernacular English (AAVE) (Rickford, 1999) and comes from a stance of empowerment for the Black community. Therefore, I highlight a few alternative words that have been used in place of more traditional, Western researcher terms. First, I start with the term "womxn". I am operationalizing the term "womxn" only to decenter men and sexism and to center and empower women. I do not use this as an alternative to be inclusive to trans

women and femme-presenting nonbinary persons because they are included in the term women and do not need a separate classification. Secondly, I discuss the term intellectual contributor. For too long, the intellectual contributions of Black womxn in and outside the academy, have been ignored, unfavored, undervalued, discredited, and rejected. Not today. These Black womxn are not just participating in these studies but providing intellectual contributions that they are not getting recognition or accolades for. Meanwhile, their stories and lived experiences have been used to advance the field and academic scholarship. In alignment with the need for Black womxn to define their own identities, I consider participants to be intellectual contributors that I refer to as my Homegirls who are investing in the advancement of this scholarship. (For protection purposes, I cannot list all their names as authors, although I think it would be more than fair for their contributions to my scholarship). Thirdly, I move to the term Homegirl. Homegirl is a slang term in AAVE that refers to a female acquaintance from your own town, neighborhood, or social background. These womxn are not just contributors to my study, but my Homegirls in a sense that we share common identity markers, and we will "go to bat for" (fight for each other) in the same way that we would our family and best friends. Therefore, I refer to our semi-structured interview as a homegirl conversation. Lastly, I want to address the supporters of this work. I, Fantasi Nicole, do not consider this work to be that of my own. I am the idea generator that is being used as a vessel to highlight the knowing and experiences of my peers, my Homegirls. Additionally, without the support of my advisor as she helps me to revive my murdered spirit through empowerment and activism, I could not have had the energy or the support to do this work. So, I show solidarity with, and connection to, my Homegirls and my advisor who

have made this research possible for me. This is our work, our sweat, blood, tears, and triumphs.

Literature Review

For this study, spirit-murdering is operationalized, in accordance with scholars Patricia Williams and Bettina Love (Love, 2014, 2017; P. Williams, 1987), as "the personal, psychological, and spiritual injuries to people of color through the fixed, yet fluid and moldable, structures of racism, privilege, and power." Within the past decade, spirit-murdering has been a topic of interest to show how racialized and gendered experiences in educational settings have injured Black boys, girls, and young adults by impeding on our educational experiences, causing harm to our mental and emotional well-being, challenging our cultural wealth, devaluing our ways of knowing and being, and penalizing us for not being and acting white (Hines & Wilmot, 2018; Young & Hines, 2018). Specifically, in higher education, scholars have used spirit-murdering to expose harsh interactions and experiences that have "killed the spirits" of students of color and caused us to look for ways to "renew our souls" while still enduring the inequitable conditions of the academy (Garcia & Dávila, 2021). Examples of the occurrence of a spirit-murdering event include accusing scholars of cheating because of academic success, humiliating us and our peers for being different, discipling us for exposing and challenging inequities present, and stealing our intellectual, physical, and emotional labor with no recognition (Bryan, 2021; Carter Andrews et al., 2019; Erevelles & Minear, 2010; Hill Collins, 2009a; Hill, 2021). The impact of these experiences has resulted in the puncturing of our souls, a slow academic death, terrors haunting our

beings, and the birth of anger that turns into unwavering persistence or untimely departure (Garcia & Dávila, 2021).

It is of crucial importance that I acknowledge that spirit-murdering has a longitudinal impact. It is not just that this incident happens, and it bothers those impacted for the moment, but that it happens and leaves a residual impact on people's overall being (Hofstra University & Lightfoot, 2021; Love, 2014). Many of these wounds start as early as some scholars remember, and they are left to try to expose, process, and heal the lingering trauma that is associated with that "one moment" for oppressors. In a publication about spirit-murdering, one scholar of color talks about how the impact of her second-grade teacher calling her a cheater birthed an anger in her that turned into persistence that in turn resulted in her being hyper-surveilled (Foucault, 1990; Griffin & Reddick, 2011). A plethora of research on racist and gendered experiences, or the initial act of the spirit-murder, has been explored through microaggressions (Burt et al., 2016; Miles et al., 2020; Wilkins-Yel et al., 2019; Yosso et al., 2009), stereotypes (E. McGee et al., 2019; E. O. McGee & Martin, 2011; Meador, 2018; Nicole & DeBoer, 2020), implicit bias (J. B. Williams, n.d.), degradation, discipling (Foucault, 1990), hyper surveillance (Foucault, 1990), and more. However, not much literature focuses on the second half of spirit-murdering, which is the impact the incident has on our spirits through long-term, lingering effects. Because universities are seeking to increase the number of diverse faculty (Stewart et al., 2016; Yost et al., 2013), I think it is of the utmost importance that they consider things in our doctoral education that would prevent these scholars from wanting to be in academia or cause them more malaise when taking professorial roles. To identify inequitable practices to move towards a more socially just academia, we, as an

academic culture, must identify and understand how these experiences occur and the impact it has on diversity and inclusion in higher education. Therefore, this work aims to produce work that highlights systemic inequities for Black womxn in engineering doctoral programs, provide specific examples with call-to-action for disruption of unjust practices, and hold faculty, staff, and peers accountable for their actions.

Theoretical Framework

This research is framed through the theoretical lens of Black Feminist Thought (BFT), a critical social theory developed by Patricia Hill Collins (Hill Collins, 1990). I chose this theoretical lens for several reasons. The first reason is that BFT centers the knowledge, ideals, and experiences of Black women, emphasizing that we have a unique lens that is shaped by our social location in society. This lens contains ways of knowing and being based on our race, gender, sex, etc, which cultivates a group standpoint that Collins refers to as Black feminist standpoint epistemology (Hill Collins, 2009a). It constitutes our collective knowledge based on common experiences and perspectives of being Black women in the US or abroad, as well as our individually unique everyday experiences and perspectives that are shaped by identities in addition to being Black and woman. Since fellow Black women were the intellectual contributors who made this research possible, I felt it critical to use a framework that was made for us, by us, or F.U.B.U, (us being Black people) to ensure a framing grounded in Black women's ways of knowing.

The second reason is because Collins speaks on intellectual activism as a key process in developing the dynamic of BFT (Hill Collins, 2009a, 2013). She speaks on

how Black women's intellectual work was suppressed for years and how we used mediums like poetry, music, art, etc. to produce and share knowledge and question the very definition of the term intellectual. She advocates for the inclusion of traditional academic works and non-traditional academic works to be inclusive of the social theory of BFT. She also emphasized that intellectual works did not only come from academics, and that even women outside of the confines of the ivory tower still produced knowledge that is both intuitive and intellectual. Using an arts-based approach to marry scholarship with different forms of art (both visual and written), I felt it imperative to use a theory that was inclusive and encouraging of using multiple ways of producing scholarship to ensure that it was aligned with the methodological design of this research.

The third reason I chose BFT is because Collins speaks on the matrix of domination (Hill Collins, 2009a), which speaks to the environments that oppression exists in. The matrix of domination is a reference to domains of power that are structurally organized through the existence of interlocking oppressions. These interlocking systems of oppression exist because of how our society marginalizes people based on race, gender, sexuality, socioeconomic status, nationality, etc. This matrix of domination is made up of four domains that curate varying forms of oppression for Black women. The first domain is the structural domain. The structural domain of power represents large-scale social institutions that have worked to marginalize and exclude Black women. Let's consider zero-tolerance disciplinary policies for K-12th graders, which are disciplinary policies that have disproportionately applied to Black youth, resulting in these students being consistently suspended 2-3x as much as other students (Hofstra University & Lightfoot, 2021). The second domain is the disciplinary domain.

The disciplinary domain of power represents the management of power relations in efforts to sustain the oppression, marginalization, and exclusion of Black women. The subjective goal of the disciplinary domain of power is in "creating quiet, orderly, docile, and disciplined populations of Black women" (Hill Collins, 2009a). For example, obtaining degrees and having professional experience qualifies Black women engineers on paper; however, they may be treated as second-class citizens in their workplace environment, like their experiences and knowledge isn't of the same quality or worth (Brown & Godwin, n.d.; Weidman et al., 2001). Another example is how Black feminist thought and Black women's activism are looked at as less theoretical or less academic in many fields (Collins, 1990), especially those like engineering where it is believed that "objectivity" is a thing and people's opinions and past experiences and knowledge do not matter when building products or services. The third domain is the hegemonic domain. The hegemonic domain of power represents the justification of practices that serve to maintain power of the dominant group by supporting a system of "commonsense" ideas that work towards their advantage (Collins, 2009b). This happens by manipulating ideology, culture, and consciousness within an environment to make it reflect the needs and benefits of the dominant group. Another example can be seen in the subjective nature of the pass/fail criteria for qualifying exams. However, according to an article within Inside Higher Ed, studies have shown that this milestone threatens mental health, disproportionately eliminates students of color (including Black women), and fails to substantially contribute to student development (Posselt et al., 2021). The fourth and final domain is the interpersonal domain of power. The interpersonal domain of power represents the everyday actions, interactions, and consciousness of individuals to

establish dominance and cultivate marginalization, discrimination, and exclusion of Black women. An example of this that is far too well known for Black women is the phenomenon of white women's tears (Hamad, 2020). White women's tears (Hamad, 2020) describe the phenomenon of how white women can lean on their white privilege in the form of the damsel in distress to villainize Black women, causing repercussions. I conceptualize this as catering to someone's discomfort instead of engaging with someone's harm.

The final reason I chose BFT is because of Collin's detailed explanation of the politics of empowerment (Hill Collins, 1990). The politics of empowerment refer to the complex ways in which Black women have a dialectical relationship between oppression and activism. Oppressive experiences cultivating activistic values and endeavors resulting in oppression through marginalization and othering. Collins stated that when we as Black women 1) value our self-definitions, 2) participate in domestic and transnational activist traditions, 3) view academic skills as tools for Black community development, and 4) invoke Black feminist epistemologies as central to our worldviews, we empower ourselves (Hill Collins, 1990). It allows us to foster humanity in our academic, professional, and community environments.

This critical ethnographic research design (Creswell & Poth, 2018) aligns with BFT in the following ways: 1) it centers Black women as the experts of their own experiences, 2) it uses Black feminist epistemologies and arts-based data collection and data presentation methods as a form of intellectual activism, 3) it uses the matrix of domination as a data analytic tool to center spirit-murdering on the system itself as opposed to individuals, and 4) it serves as a form of empowerment for myself and other

Black women in the academy, and advocates for that empowerment within our academic, professional, and community environments. This work serves to implement epistemologies and methodologies that are viewed as subjugated knowledge in my engineering field, as verified and valid ways of knowing and conducting research in order to produce new knowledge and advance engineering as a holistic, human-centered, innovative, and multidisciplinary field. The goal of this research design is to leverage alternative ways of knowing and conducting liberatory research to highlight systemic inequities. Insights from this work will advance the conversation regarding power dynamics and intersecting marginalized identities in academic spaces like engineering doctoral programs.

Methods

This study exposes the varying ways that spirit-murdering occurs and impacts the lives of six Black womxn in engineering doctoral programs. The six Homegirls are all Black womxn with, or holding, engineering doctorate degrees from United States' institutions. By centering their ways of knowing, I present the findings in a composite narrative (Butler-Kisber, 2018; Willis, 2019) format as a creative way to represent Black womxn's individual everyday knowledge and Black feminist standpoint epistemology as Black womxn in these spaces (Hill Collins, 2009a). Data collection includes homegirl conversations (Nathan et al., 2023), art creations (Barone & Eisner, 2012), and art narratives (Butler-Kisber, 2018). These conversations were analyzed to find commonalities and salient themes across my Homegirls. The salient themes and

commonalities were then compiled to develop the composite blog presented in the results section.

My data collection methods for this study included the transcripts of the homegirl conversations and the art narratives. The initial homegirl conversation, which was roughly 15-25 minutes, served to identify if potential Homegirls met the criteria for the study which was 1) identify as a Black womxn, 2) be an engineering PhD student/graduate, and 3) have experiences with spirit-murdering. During this conversation, we, my Homegirls and I, conversed about current positions, career intentions prior to starting PhD, the operationalization of the term "spirit-murdering", and experiences with spirit-murdering. Homegirls shared their experiences with spirit-murdering and the impact that it has had on them. After the initial conversation, Homegirls who shared a common understanding were contacted to move forward in the research process, which involved them 1) creating a 2D art piece to represent how they conceptualize spirit-murdering from their own experiences, 2) creating a 3-10 minute video narrative to explain the elements of their art creation, and 3) having an hour long post homegirl conversation make meaning of it all. I did not have any restrictions on time limits, institution type, or contribution level. I made this ethical decision because there are not that many Black womxn with PhDs, or pursuing PhDs, in engineering and I wanted to protect my Homegirls. All of our Homegirls attend, or attended, an engineering PhD program at a Historically White Institution (HWI). They were recruited through purposeful and snowball sampling (Creswell & Poth, 2018; Gobo, 2004), using peers and social groups that identify as Black and/or womxn in engineering or doctoral programs. I want to thank them for sharing their narratives and contributing to this

scholarship. They are valued here, and I hope that the representation of their knowledge in the composite narrative blog serves as a form of spirit-healing for them.

Table 1. Demographic Information of Black Womxn Homegirls

Black Womxn Intellectual Contributors / Homegirls					
Pseudonym	***Doctoral Status***	***University Type***	***Bachelors***	***Masters***	***Pre-PhD Professional Experience?***
Nostalgia	PhinisheD	HWI	Industrial	Yes	Full-Time
Hippolyta	PhinisheD		Physics	Yes	Internships
Harper	PhinisheD		Industrial	Yes	Internships
Kagome	4th Year		Electrical	Yes	Internships
Ashley	4th Year		Mechanical	Yes	Full-Time
Kadijah	PhinisheD		Industrial	Yes	Internships

The data analysis method followed through several phases. During the first phase, I created a codebook using inductive codes found through a first pass analysis using in vivo and descriptive coding (Saldaña, 2016). After establishing the codebook, I went back through the data with a second pass thematic analysis (Clarke & Braun, 2017) using the deductive codes from BFT's matrix of domination which are structural domain of power, disciplinary domain of power, hegemonic domain of power, and interpersonal domain of power. Using the definitions of the domains of power plus the emphasis from the homegirl excerpts, I grouped the excerpt and its related codes under that domain of power in a word document. Under the four domains of power, I grouped the remaining codes into sub-themes and placed the corresponding excerpts under those subthemes. I then wrote connecting texts to sum up the scene of the excerpt or experience and to also explain what transpired in the excerpt and make meaning of it. I then finalized creating the composite blog by organizing the narratives within the sub-themes in a way that

flowed naturally together in a story-telling, yet reflective, way. An example of the analysis process from raw data to composite narrative can be found in Table 2 below:

Table 2. Analysis Process from Raw Data to Matrix of Domination for One Excerpt

Raw Data to Matrix of Domination Example – One Excerpt		
Raw Excerpt	***1st and 2nd Pass Coding Combined***	***Domain of Power and Sub-Theme***
So when I think of **laws and policies**, I would say in my department, **the way the qualifying exams are structured**… I know that when I was preparing for them, my advisor literally let me have nine months to prepare for them because from what I heard from other students, especially those of color. So, the **previous Black womxn who were in the program, they left because of the qualifying exam, not passing them.** Peers in our department [were] not very welcoming towards other minorities. So, **I think that is one policy that's disadvantageous for people of color.** Because I know a lot of people of color, if they didn't pass, **you only [got] two chances to take them. If you [didn't] pass, then you have to either master out and then apply again to be in that PhD program, or they switched to a program that [didn't] have that type of structure in place** - **Ashley**.	**1st Pass:** --laws and policies (in vivo) --the way qualifying exams are structured (in vivo) --one policy that's disadvantageous for people of color (in vivo) --non-welcoming peers (descriptive) --time intense preparation (descriptive) --pass/fail policy (descriptive) **2nd Pass:** **Structural Domain** **laws and policies (in vivo) **the way qualifying exams are structured (in vivo) **one policy that's disadvantageous for people of color (in vivo) **pass/fail policy (descriptive) Hegemonic Domain **time intense preparation (descriptive) Interpersonal Domain **non-welcoming peers (descriptive)	**Structural** The structural domain represents large-scale social institutions that have worked to marginalize and exclude Black womxn, primarily through widespread policies and practices. I chose the structural domain as the best fit because the majority of the 1st pass codes focused on laws and policies that disproportionately impact Black womxn graduate students. **Sub-Theme:** This excerpt was grouped under the "systemic inequities manifest in academia" sub-theme under the structural domain. This sub-theme focused on how the structure of institutions can cause inequities to manifest in the experiences of Black womxn.

To ensure the dynamic flow of the narrative blog, I reflected on the collective story of all of the Homegirls and mapped their experiences with the respective domains of power. I wanted to honor their experiences, as well as the way they expressed them, which is why I chose to go with a blog as data presentation. The composite narrative blog allows me to prioritize language that flows naturally, in the way of informal conversation, but still presents information in a formal way.

The composite narrative blog is centered around a composite Black engineer named Marvilous Marie who is blogging about her PhD experience to her audience, The Marvilous Mob. Marvilous represents the six marvelous Homegirls who trusted their stories to be shared for the advancement of justice in Black womxn, engineering, and doctoral education scholarship. What a marvelous contribution this is! The "Marvilous" story was developed into a composite blog for a few reasons. Using narrative style writing with AAVE and slang allows research to be represented in a way that showcases the complexities of individual experiences while drawing out commonalities across those experiences (Butler-Kisber, 2018). Using a composite narrative blog also allowed me to offer a significant degree of anonymity to my Homegirls (Creswell & Poth, 2018). This anonymity is especially important you are conducting research with a vulnerable population whose statistics show 0.56% of engineering doctorates degrees being awarded to Black womxn in less than two years ago (American Society for Engineering Education, 2022). Also, using this style of writing can make this work accessible and increase understanding across particular groups and non-academic audiences (Butler-Kisber, 2018; Hill Collins, 2013).

The composite narrative blog was derived using the eighteen transcripts from the initial homegirl conversations, art narratives, and spirit-murdering homegirl conversations of the six Homegirls for this study. Using the transcripts to provide details to compliment the salient findings, I used direct quotations from these conversation transcripts. Direct quotes are italicized with the corresponding Homegirls' initials superscript directly following. The description/explanation of the quotes is presented in regular text and themes were bolded throughout the results section. To corroborate the composite narrative, I shared it with my Homegirls to confirm that they felt it accurately represented them and their experiences. In each composite blog, the results and analysis are embedded together as part of the creative analytical processes used to make meaning of the data. At the end of each composite blog, the discussion summing up the meaning making can be found for that respective domain. The implications are combined in a separate section following the results and discussion.

Positionality

As a Black feminist killjoy (Ahmed, 2010) who has been enrolled in 2 engineering PhD programs with 3 different academic advisors, I use this research as my own intellectual activism. Having attended 4 HWIs in 3 U.S. regions, I have had my fair share of experiences that have served the role of breaking me down to a mere fraction of myself. Everything that I thought I was, or believed myself to be, came into question through my experiences in educational settings. What I knew to be my #BlackGirlMagic was not viewed in academia as magic at all, but a threat to the traditional ways of the academy. At one point, I began to question my ability to be a researcher. I questioned

whether I was good enough and who would care. Then I began to write. Not for myself, but for others. For the womxn who were having experiences similar, different, and in parallel with me. For the Black scholars who were struggling with their identities in academia too. I wrote until I felt a piece of me heal. I exposed until I felt a piece of me mend. I empowered until I felt a piece of me restore. I knew then what I had to do. I had to be the critical researcher that would heal by serving my fellow Black womxn in similar spaces and calling attention to the bullshit that made our persistence damn near impossible. I had to be the Black feminist killjoy who served to empower others, even if that meant that I would never be seen in a positive light again. With this paper, with this work, I take a stance in solidarity with those who aim for equity and justice for all, not just some. And although I have my own experiences, I will use myself as an instrument that centers the perspectives of the Black womxn that I am in service to, my intellectual contributors, my Homegirls.

Results

Hi, Marvilous Mob! It's Dr. Marvilous Marie here, your favorite blogging engineer with a PhD! Lately, I've been reflecting on my experiences as a PhD student at Delusion University. I was thinking about all of the experiences that I had that caused harm to my psychological and emotional well-being, which I refer to here as spirit-murdering experiences. I am sure by now that y'all know I identify as a Black feminist, so I started thinking about the different ways that I could share this information to my Marvilous Mob in efforts to show solidarity with others, to call out inequities I faced, and to teach others about things that still occur in the academy. Therefore, I decided to present this topic in a four-part mini-blog series that looks at how spirit-murdering

experiences manifest within the matrix of domination, which is a concept in Black Feminist Thought that includes structural, disciplinary, hegemonic, and interpersonal domains of powers. The structural domain looks at how power is harnessed to marginalize and exclude Black womxn within larger social institutions. Within this structural domain of power, I identified the following sub-themes: 1) systemic inequities manifest in academia, 2) PhD hazing process, 3) limited resources, and 4) institutional betrayal and pseudo DEI efforts. The disciplinary domain looks at how power is maintained through power relations in efforts to sustain the oppression, marginalization, and exclusion of Black womxn. Within this disciplinary domain of power, I identified the following sub-themes: 1) mistreatment and 2) level of disrespect. The hegemonic domain of power represents the justification of practices that maintain power by supporting common sense ideology amongst the dominant group. Within the hegemonic domain of power, I identified the following sub-themes: 1) aloof nature of the ivory tower, 2) hidden curriculum, 3) offensive and triggering educational practices, and 4) self-agentic professional development. The interpersonal domain of power represents the everyday actions, interactions, and consciousness of individuals to establish dominance and cultivate marginalization, discrimination, and exclusion of Black womxn. Within this interpersonal domain of power, I identified the following sub-themes: 1) betrayal and mistrust in the individual actions and communication and 2) reduced me down to my marginalized identity. Each of the four parts of the mini-series represents a different domain of power. For distinction throughout the blog, I: 1) use bold caps for theme, 2) use bold for sub-themes, 3) italicize specific sentiments or experiences as flashbacks, 4) brackets to include changes for anonymity or clarity within the flashbacks, and 5) use

regular text as modern time reflections of those flashbacks. The modern time reflections were used to set up the scene of the experience from the homegirl conversations as well as to make meaning of what happened and a potential why. As always, be sure to like, comment, and subscribe! Let's mob out!

Structural

Dear Marvilous Mob,

Across this four part series, I want to think back through my last few years of school as I worked to obtain my engineering PhD from Delusion University. As I reflect back on my PhD process, I think about how spirit-murdering impacted my life on multiple levels, first looking at the structural level. The structural domain looks at how power is harnessed to marginalize and exclude Black womxn within larger social institutions. Within this structural domain of power, I identified the following sub-themes: 1) systemic inequities manifest in academia, 2) PhD hazing process, 3) limited resources, and 4) institutional betrayal and pseudo-DEI efforts. The manifestation of systemic inequities encompasses injustices embedded in the structure of graduate programs and institutions. The PhD hazing process is the discrediting of experience and intellect and represents the minimization of professional identity as commonplace to graduate engineering. The limited resources focused on lack of general support and limited to no mental health support. The institutional betrayal and pseudo-DEI efforts describes the lip service of people who claimed to want to do something about the spirit-murdering inequities but really had no inkling of action to support that claim. The definitions for each sub-theme can also be found within the blog after the first mention of the sub-theme, which is bolded.

The Recap

Looking at it from a **STRUCTURAL** level, I think of how **systemic inequities manifest in academia** and how that impacted me. And when I say systemic inequities, I mean injustices embedded in the United States' structure and its everyday functions. People tend to think that these things do not exist in academia, like a university is not run by a capitalist system that is fueled by the government which dictates who has access to what resources, where, why, when, and how much. I had to consider many constraints because of my social location in society, that is a Black woman from a non-engineering or non-PhD familial background. Initially, *there were three people that I wanted to work with [when I was choosing between two different universities]. Even having to choose between a Black woman and two white women was a challenge out the gate if I went to attend Shithaven University. And then at Delusion University, I felt like I had a little bit more flexibility, but then I find out that I didn't really have flexibility because even after all was said and done, I was told that [I] need to keep [my advisor] at least as a co-advisor because they need to get credit for supporting [me], and I'm like "Fuck that." But I didn't have a choice. I didn't have any autonomy in those early decisions. It was hard to make a decision because there were so many constraints. [Delusion University] gave me a fellowship so that I apparently had a little bit more time to figure out what I'm going to do and it's closer to home*[HIPPOLYTA]. The location of the universities, the funding options available, and the advisors to consider, were all tough decisions to make as a Black womxn with no experience with the PhD process having a desire to stay close to home, and needing the flexibility to manage other things in life. The lack of autonomy in

choosing the university, and ultimately, advisor, constituted a spirit-murdering experience for me because of the impact it had on my journey throughout this process.

I soon learned that autonomy was available in my program but came at a cost. I chose to gain professional development experience through an internship during my program and my advisor was saying *"You also need to have this other publication through this." I get that [he was] under certain pressures, I guess, to meet certain milestones, but it's like [he hadn't] complained about me not doing enough [prior]. Me doing this internship, I get, has eaten into my time and I can maybe digest the fact that it could [have] extended my time because of it. But it's like [he] didn't hesitate using me getting this internship as an accomplishment for the students on [his] grant. This was such a great thing, but now it's basically being used against me*KAGOME. I just don't understand how you can value something I've done on a higher level and use it towards your metrics, but shame me and use it against my metrics to push me to get more accolades for you. I also get that it's atypical for PhD students to do alot of professional development opportunities like interning; yet, we agreed that it was a great opportunity so why switch up now just because of your pressures?

And I did so much for my advisor and the department, and I had a situation where *basically [this tenured faculty] was talking to me like I wasn't a freaking graduate student. Like I was just some random ... It doesn't even matter if I was just some random Black person, he shouldn't talk to me like that period. Doesn't matter. But the fact that he just was arguing with me about being on a research meeting call [in our department's building] and basically threatened to call the police on me because he supposedly said I couldn't be in a common area having a meeting. And so the director of operations at our*

school sat me down and apologized profusely and said that they had brought it up to HR and all this other stuff. I haven't heard head, tails or wind of any of it. I believe he's a tenured faculty. He's been there for ages. He's an old crotchety dude[KAGOME]. I truly felt like he did that because I was a Black person in that space, the only Black person in that space, and the fact that he threatened to call the police on me in a heightened sense of racial reckoning in the US with police officers…during the Trump era? Be for real. And it didn't make it any better that the department just provided lip service to me but did not support by actually holding him accountable for what he did!

And I tried to invest my time in service to help others who were in my position, and also set others up to be a beacon of light to those coming behind them; but it was a struggle. *And I think one of the reasons is because they don't see the graduate school support us. They don't even see some of the cultural centers support us. So when they don't see that, even the Delusion University Graduate Student Government, when [they] don't see any type of support, it's like, "Why should I be in this organization? Why should I be in a leadership position where I'm going to be fighting? I'm already fighting to stay in my program. No, I'm going to be at the university to be there. Let them fight to show them that [we're] important here, that [we] matter here." No one's going to fight for that, [especially] when you're getting underpaid, [and] when our university is one of the lowest paying universities for graduate pay*[ASHLEY]. I loved being in service leadership to my fellow Black graduate students but I could not persist because my service work was not valued like my research, but the university argued that diversity, equity, and inclusion were so important. If it is so important, why isn't service ranked equally with research and teaching? Make it make sense.

And, thinking of *all of the experiences I had in grad school made me a lot slower to place myself in a scholarly environment, because they're just fundamentally different in terms of performance reviews, in terms of how your work is evaluated, and also in terms of the amount of time that you're expected to put towards things. I think I just got really quickly disillusioned from the idea of professor being the ultimate goal, because I had experienced how nuances in people's value systems, and nuances in what people were able to respect, would affect how that worked. But also saw how little sleep I felt my advisors were getting. I saw how much people pleasing was involved, and I also saw how a lot of their success depended on the students they were able to get in their groups. And it was not necessarily them doing the work, but very much them having enough money to hire enough students that will do the work.* And *that sounds cool in theory, but to get to a place where you have first pick of the students, to get to a place where you have money to pick the students, required so much shucking and jiving, that it would just be easier for me to come at it more slowly. And not come at it from a place of like, "Oh I'm done with my dissertation. Now, I need to find a professor role to get into." It was like, "I'm good, I'll wait. We'll figure that out. Right now, I need to pay my bills. Right now, I need to be able to sleep well. I need to be able to travel a little bit. I need to be able to rebuild up my genuine intellectual curiosity." Because I don't know, I feel like, as you finish your grad program, it all becomes a lot more transactional*[KADIJAH]. So, *there is no way in hell I would work at a university right now. Things have to structurally change because the stuff that they are dealing with, ain't no way I'm going to be getting paid little money to be dealing with that*[ASHLEY]." They don't even value the experience, both professional and educational, that you bring to the table with you when you are here.

This discrediting of experience and intellect, which seems to be pervasive in the structure of graduate education, is what I refer to as the **PhD hazing process**. Hazing involves minimization of professional identity as commonplace to graduate engineering. I mean "*[It] doesn't make sense to me. First of all, and this is the other thing that bothers me about academia. You have people who have a bachelor's degree. It's not like these people don't have any education that are in these programs. They have a bachelor's degree or they have a master's degree and you are paying them pennies, knowing that if they went into industry they would be getting paid more. So I'm like, "That already tells you something. The fact that there has to be a strike or other universities calling your school up for them to finally make a change to the pay. And it's still not compared to other universities around, it's still the lowest, that already kind of tells you how they think of you as a student here." Even with all the accolades and all the stuff they'd be talking about and all the research that they're happy that we do, they obviously are showing they don't really value you, just to make sure that [we] can pay your bills. [I mean you act like what you pay is enough, even though the cost of living is going up? Why haven't you adjusted the pay to accommodate the cost of living [if you care]? That don't make sense to me*ASHLEY*."* All PhD students come with some knowledge, some expertise, and some experience that their PhD programs valued enough to offer them admission into said programs. *I'm just like, "Nah, you know what? I'm going to acknowledge what my actual needs are. Outside of my scholarship and outside of whatever my intellectual curiosity might be, my actual needs are that I need to pay rent, I need to pay bills, I need to be saving. I would like a house. I would like to live in a city that feels good for me energetically and culturally. And I can accomplish that more easily looking for more*

transactional jobs than I can looking for jobs that are actually more intellectually-based[KADIJAH]*."* It is still baffling to me that PhD students get such low pay for the contributions they make within their organizations. They literally support their advisor's tenure, research, and/or publications, mentor and invest in other students and services, and produce new knowledge on their own time and dime (if it's not connected to a grant they are paid on), all of which is still high-intellectual work that does not get its due well-deserving pay.

What is even more baffling to me though, is how qualifying exams are structured to determine if you are mastering content and are "qualified" to continue forward in the program. *So when I think of laws and policies, I would say in my department, the way the qualifying exams are structured… I know that when I was preparing for them, my advisor literally let me have nine months to prepare for them because from what I heard from other students, especially those of color. So, the previous Black womxn who were in the program, they left because of the qualifying exam, not passing them. Peers in our department [were] not very welcoming towards other minorities. So, I think that is one policy that's disadvantageous for people of color. Because I know a lot of people of color, if they didn't pass, you only [got] two chances to take them. If you [didn't] pass, then you have to either master out and then apply again to be in that PhD program, or they switched to a program that [didn't] have that type of structure in place*[ASHLEY]. I remembered feeling like "if I'm qualified enough to be accepted into this program, engaged enough to ace all of my classes, and intelligent enough to contribute to my advisor's research, why should I be subjected to a subjective exam that judges things that I continue to develop as a student, researcher, and potentially faculty member? Why would I need to be expelled

from the program or have to take the exam over to prove my worth? Haven't we gotten past this already?" And when I say subjective exam, I mean that it is made up by people who will grade it based on their own experiences and backgrounds, which has the power to sway that decision. *So we were really just getting started, so my first fall was the first time they even offered a qualifying exam and several people failed the quantitative question. And me, Grace, Hope, we were the only three people in that first year cohort. And we looking like, "So what y'all finna do?" They made them redo that question. But then in the coming fall when it was time for us to take the qualifying exam, we had to take it. We took that question. I failed the quantitative question just like the other people failed the quantitative question. [Yet], they made me retake it that following December*[HIPPOLYTA]. Now why would you make me retake the exact same question that your first round of students failed for me to fail again and be penalized for the question that clearly needs to be reconsidered? The pressure of these spirit-murdering experiences manifested in mental, emotional, and physical ways, but the university provided limited resources, if any, to combat it.

And when I say **limited resources**, I mean *it's like these are not healthy coping mechanisms, because I didn't have any resources for real coping mechanisms. One time I remember I went into health services for, because it was spring time, I had a sinus infection, I needed some medicine. Health services, you go there, it costs $10. So I'd go in there, I need some medicine. This man tried to tell me, "Oh it looks like [you've] gained 20 pounds since you got here. Maybe you should go meet with a nutritionist." Fuck you, sir. Why are you minding my business? Literally, even the non-academic resources were inadequate. I exercise every day. I'm walking all over this damn campus [exercising*

everyday]. Me and my homegirl go walking, we go to the gym. You know what's not happening? I'm not losing any weight. And it was just, even from then, I never went back to health services because why are you shaming me for the physical manifestations of what's happening? I [just] came here for some sinus medications. If you're not going to get [help] from the department, at least you should hope to [not be ridiculed by them]. We got health insurance that was provided by the school even though we had to pay for it. We had health insurance but [it] didn't help you get healthy. You got access to the gym, but okay. I went to the gym. A lot of us, we were taking water aerobics classes. We were active people. We played intramural sports. But all of that stuff, just even within those experiences, being shamed in how I'm going to get support to navigate these things is problematic[HIPPOLYTA]*. So paying for therapy sessions, I ended up having to do these group therapy sessions, so that I could get more therapy sessions. I didn't really love the group therapy, but I did what I had to do in order to keep having conversations with my therapist. It was just like, "This can't be it. This cannot be how I make money, this cannot be how I survive, because I'm really barely surviving." And nobody really wants to talk about that shit*[KADIJAH]*.* And that's the messed up part. It reminds me of a child asking their parent about their financial resources and the parents saying it wasn't up for discussion. It's not a matter of how graduate students should manage, but a matter of the university and federal funding systems treating us like the professionals we are and realizing that times have changed, prices have increased, and the cost of living is not what it used to be. Nor should we assume that people come from the same type of resources or have the same type of support to live off of the current graduate student salary. With all of the "free" labor I did for them, I just ultimately felt betrayed by the institution.

I definitely reckoned with **institutional betrayal and pseudo DEI efforts**. I mean, it was just a lot of lip service by people who claimed to want to do something about the spirit-murdering inequities that existed, but really had no inkling of action to support that claim. *It's a PWI. And the people here, it's so funny, they're so loyal to the institution because a lot of the people have gone to school here, graduated from here, and still work here. Which I think is a problem, because I feel like they don't know anything outside. And so even when you try to talk to Black faculty or staff members, they can't even understand what you're going through because it's like, "Yes, we went through that, too." And it's almost like, "You should just deal with it and move on." And I'm like, "This ain't healthy. It's like [the movie] Get Out, [the movie where basically Black brains and bodies are being supplied to white people to advance their lives]* ASHLEY*."* I never understood why people felt like just because they endured traumatic doctoral experiences that they must impose that same oppression onto their students. You would think that with the programming and conversations around diversity, equity, and inclusion, they would understand that advice to "just deal with" a traumatic experience without support is not a social justice take on the doctoral process. And I mean we had so many conversations! *All these conversations were about, "Okay, how can we make the experience better for Black graduate students?" There were several conversations with my department, the college of engineering, university. And it was just like no one was listening. It's like, "Okay, we tell this." And I asked, "Okay, what's going to happen with this information? How are you going to use this information?" And it's like, "Okay, well, now I know I can take this to a meeting and this is what we can talk about." And I have not seen anything happen from all those conversations over the summer. The last four*

years I've been in this program, I have not seen anything for them to improve the environment better for Black graduate students. And so I'm like, "They're not serious." I get no followup. So that means nothing happened. I see it in my department, I see it at the school, I see it in the university. Nothing. I've actually seen, I feel like things are actually getting worse. So I'm like, "Do y'all actually care about this or not? Because if you don't care about it, then just be honest and say, 'I don't care.' And then stop wasting my time with these conversations when you don't even pay me enough for this conversation."

*All last year we had meetings with the associate dean of the graduate school. I met with the associate provost of diversity and belonging. I've met with all these leadership people, even the dean of graduate retention and the college of engineering, associate dean of graduate retention and college of engineering, and serv[ed] on the equity task force. And honestly, I have been asking for so much help, just like, "We need help for our Black graduate students. They do not feel supported here and they don't have a community." We had an office in the graduate student union. Those people treat us like crap. Anytime I try to go in there, [the] lady acts like we're taking up space. We've even tried to get an office somewhere else and it's just like, "There is no place for us here. And where we are right now, they don't want us there." And we get that vibe all the time*ASHLEY. Literally, there has been no improvement in the graduate school environment or in the treatment of Black graduate students, and they still want us to recruit and be responsible for more enrolling Black students. *How come you don't work on programs with us? How come when we're trying to collaborate with you, you don't want to do anything with us? Why do we have to come and beg for you to help support us when you're trying to get us, to use us, to recruit more Black students? Why should I go recruit other students to come*

and be in this mess[ASHLEY]? And it's crazy because more importantly, I felt guilty trying to just do my school work and graduate. *Why do I feel guilty being a student first? And I'm like, "I don't know how to just be a student." Because ever since I came here I've always been doing some type of service work. Why do I feel guilty just going to my class, doing my homework, going to office hours? Because then people are reaching out. "Well, we need to get in contact with Black graduate students. You were the connect*[ASHLEY]*."* I mean, *I put the fucking department on my back. At the time, I was the only Black girl*[NOSTALGIA]. I did so much for my department. I recruited like it was my job. I consulted like it was my career. Hell, I even forgave like it was my duty. Yet, nothing came of it, except a feeling of guilt when I decided that I needed to honor self, value my time, and stop investing in DEI efforts that didn't matter to the people trying to create them.

The Reflection

Within the structural domain of power, one of the major points was that Black women engineering PhD students were dehumanized by the capitalist way that academic programs are operated. Because PhD programs are operated based on "the scientific search for truth and the economic maximization of profits" (Münch, 2020, p.1), it is hard to see an individual researcher as a holistic human being when they are associated with the money, publications, and clout that they have the potential to bring. Yet, because of these Homegirls' social location within the society in which they attended school (i.e. United States), this dehumanization of students as work horses is exponentially more impactful on them and their well-being. These student researchers are typically stripped of their autonomy, minimization of professional identity, and diminished in an exploitative nature. The Black women in this study worked hard to be able to identify

themselves in opposition to the bias, stereotypes, and labels placed on them because of their racial and gender identity. Therefore, things like autonomy, professional identity, and valued intellectual contributions are vital to their success and development within their respective engineering programs. However, when you have systems in place that dehumanize them to being "work slaves", it is not conducive to the way that they want to engage with advancing themselves. This coincides with Victor Ray's theory of racialized organizations, in which two of his tenets state that racialized organizations influence agency of racial groups and enforce racialized decoupling. In this case, the Homegirls in this research were first-generation PhD and engineering students, coming from a variety of socio-economic backgrounds, yet all reported discrimination and minimal (if any) support in navigating the systemic way policies were enforced and the pressure it placed on them. This corresponds with Smith and Freyd's take on institutional betrayal, a phenomenon described as "trusted and powerful institutions acting in ways that visit harm upon those dependent on them for safety and well-being (Smith & Freyd, 2014, p.575)." The capitalist process of academia, especially in an objective field like engineering, benefits from the slave-like treatment of doctoral students.

Disciplinary

Dear Marvilous Mob,

For Part 2 of this 4 part series, I want to reflect on the **DISCIPLINARY** level of power and how these experiences impacted me. The disciplinary domain looks at how power is maintained through power relations in efforts to sustain the oppression, marginalization, and exclusion of Black womxn. Within this disciplinary domain of

power, I identified the following themes: 1) mistreatment and 2) level of disrespect. The mistreatment sub-theme encompasses unfair and unjust treatment against self-defined, professional, Black womxn. The level of disrespect sub-theme was centered around experiences that were dehumanizing and centered Black womxn as outsiders-within. The definitions for each sub-theme can also be found within the blog after the first mention of the sub-theme, which is bolded.

The Recap

I believe the primary thing that I noticed was that there was **mistreatment.** The main example I could think of was how I was treated after I shared my experiences as a Black woman engineering doctoral student in a premier higher education online blog. *It was crazy because the week of my second defense, there was an advisory team visit to Delusion University. I'd asked Black Mentor to Skype me in because we had to Skype people in for classes all the time. So I was like, "Skype me in," [so I can] talk to this advisory team because I got things to say. And the article came out the morning of the visit, Mentor2 was on the advisory team. [The] Department Chair called me that morning and damn near cussed me out. She ain't cursed at me, but she basically said, "You're not a student. You don't have any business talking to the advisory team and you're not allowed to come to this thing because I saw. I laughed at her and hung up the phone and broke down in tears. When you were applying to the department head, I was the biggest student advocate you had*'HIPPOLYTA. How could you deny me access to an advisory team when it was open to students? I was technically a student since it was the week of my second defense. It all boils down to them not accepting that I had honestly shared my experiences and they tried to discipline me for it. I was treated differently because of my

willingness to talk about the trauma I endured during my PhD process. I mean, I really felt like I was the guinea pig in every way. I felt like I was the one who paid the price for subjective situations within my program. I mean, *I made y'all look so good and y'all did not care for me the way that I cared for the department. It was bullshit for why I didn't pass [my qualifying exam]. After talking with some people too, they were like, "Yeah, that's just some bullshit things that they do." I'm just like, "Well, that's not fair. That's not equitable." I'm like, "Y'all know I studied this shit, right? Make it make sense, because the math is not mathing at this point," but that's just a greater indicator of just how power is played at the graduate level and institution*NOSTALGIA. And I will say, *there's pros and cons and definitely not a perfect system. In those moments, I really do feel like I have no one to go to to advocate for me. Yes, my advisor is there, but there's still the power system that's oppressing me. So it's still hard to navigate that because I don't want to put them in a situation where they're impacted by their peers, but I don't want to be able to not fend for myself, but I also just like, "Why do I have to fend for myself in an educational space? That's crazy." It was a whole lot of, "This makes sense, but it also doesn't make sense because it's not fair." It's just a whole mental circus to have to deal with and consider that*NOSTALGIA. I was not given the same options as the other white student who took the exam at the same time. I was not given the same information as that other student. I was failed by a first-year faculty member who believed I should have known to do something that was not stated as a requirement for the qualifying exam. And my department decided to let me take it again as a “first pass” but that doesn’t negate the stress and trauma associated with that experience. And it was not the last time it happened. You would have thought they learned from the first mistake. I am still dealing

with the fact of how my defense went, and the lack of support from my committee. *My committee member who quit after she made it her business for me to fail my defense, and I redid everything to meet her satisfaction, then she resigned the committee because she said my committee was too bloated. The department head [supported] faculty instead of students because people aren't supposed to fail dissertation defenses. I don't feel better that no one's failed a dissertation defense since then. Why should I be the one to sacrifice? I don't feel better because no one else had to experience it. But the defense of faculty members, because that was a weird thing is that the newer department head, the current department head, when they asked me to join the advisory board and I basically went off, "Who you asking? Are you kidding me?" And I tell her the whole backstory. She's like, "Well, no one has failed and we've changed the process based on your experience." And I was like, "That doesn't make me feel any better"*[HIPPOLYTA]. It's almost like there is an immense level of disrespect when it comes to acknowledging the experiences of Black women in engineering doctoral programs. I mean, just the disrespect.

The level of disrespect that I experienced during my program was just profound, and it was all centered around dehumanizing me and making me feel like an outsider-within. *I'm just like "Bro, because y'all really going to sit here and not pass me, but then two weeks later, why y'all going to ask me to do some[thing] for y'all?" I'm just like, "Don't do that because that's exploitative." I don't want to paint a bad picture of where I'm at because I don't know if that's conditioned in society or whatever, but we were always taught and told, at least for me, my mom always just said, "If you don't have nothing nice to say, don't say it." I don't know if white people picked up on it, but they definitely realized that, "Oh, that's a form of suppressing their voice because we could do*

all this fucked up shit, but they ain't going to say anything because they don't want to be deemed angry Black womxn or all these other stereotypes and shit like that[NOSTALGIA]." I really could not believe that they had the absolute nerve to fail me on some subjective criteria, and then turn around and ask me to do something for them. I did feel that if I spoke up, they would use labels that could basically impact my PhD progression, and I believe they knew that. I mean, and to think back to that situation where that professor was yelling at me for having a Zoom meeting in an open space in my department building. *I'm telling you, because those types of reactions happen where I'm flustered and I'm trying to stay respectful. But he's just up and down disrespecting me. I'm trying to de-escalate. I was trying to de-escalate the situation and he wouldn't let it happen until I walked away. That was the only thing that de-escalated. It was me removing myself. If I was combative, well, I don't even want to believe what would've happened or probably would've happened. That situation happened. And the consequence of it, of course, was me feeling very uncomfortable in my own workspace, and high anxiety every time I saw him, and etc. etc*[KAGOME]. For me, the level of disrespect and mistreatment I endured during my PhD program just made it a physically, mentally, and emotionally unsafe environment to be in.

The Reflection

Within the disciplinary domain of power, one of the major points was that Black women engineering PhD students had to comply with interest convergence (Bell, 1980). Homegirls were punished for exercising their rights as human beings to make decisions that they felt honored their desires and wishes, which did not always align with the benefit of their advisor or program. For instance, one Homegirl, now degreed, mentioned

that she was “the biggest student advocate” for a professor who was applying to be the department head; but the department head was the one who denied her access to the program’s advisory team because she spoke about her PhD experiences in a blog. Why was she a reliable source when it came to supporting your advancement, but not a reliable source when it came to sharing her perspective with the advisory team? Another Homegirl was told that she needed to get another publication for her advisor before she could complete her comps, and she is in her fourth year of the program. Another homegirl expressed feeling unsafe, like there was a necessity to fend for herself within her program. Although the specific circumstances were different, the actions and consequences were the same, resulting in the women discussing their unsafe engineering environments, which is in alignment with Ebony McGee’s racialized STEM education research (E. McGee et al., 2019; E. O. McGee & Stovall, 2020). Engineering faculty benefit from the submissive nature of doctoral students and struggle supporting those who do not fit the common mold of a traditional engineering student who upholds the way that engineering academia operates.

Hegemonic

Dear Marvilous Mob,

For Part 3 of this 4 part series, I want to reflect on the **HEGEMONIC** level of power and how these experiences impacted me. The hegemonic domain of power represents the justification of practices that maintain power by supporting common sense ideology amongst the dominant group. Within the hegemonic domain of power, I identified the following themes: 1) aloof nature of the ivory tower, 2) hidden curriculum,

3) offensive and triggering educational practices, and 4) self-agentic professional development. The aloof nature of the ivory tower focuses on experiences that showcased the “the impractical, often escapist attitude marked by a loose lack of concern or interest in practical matters”. The hidden curriculum describes the “commonsense” ideas that all students are expected to know without anyone teaching them. The offensive and triggering educational practices ranges from how data was interpreted to misrepresent Black womxn to white womxn using the n* word in classrooms, but all of the experiences were exasperated because of the Black womxn identity. The theme of self-agentic professional development displays how being agentic and advocating for self and scholarly development was shown much resistance. The definitions for each sub-theme can also be found within the blog after the first mention of the sub-theme, which is bolded.

The Recap

There was this absolutely **aloof nature of the ivory tower** that absolutely irked my nerves. *When I was figuring out how I wanted to portray [my art], I looked up what the ivory tower actually meant. And it says the ivory tower is an impractical, often escapist attitude marked by a loose lack of concern or interest in practical matters. And I totally felt that. They say [in] academia, everyone's just stuck on their high horse in the ivory tower. And I'm like the things that have impacted me that have murdered my spirit, it was that lack of concern or that attitude that people took like, "Oh, it's just part of the process", where for me, I was crushed. And it's really hard to build yourself up after that*[NOSTALGIA]*. "This is why Black students are not speaking up anymore, because they're saying, "You're not doing nothing. You're wasting our time." So for me it's just like, "This*

is a place that reminds me of wasting my time. So I'm not going to come in this building. Let me go somewhere where I can just be productive and study[ASHLEY]." And it grew tiring just feeling like everyone was there doing their own thing and not really concerned or supportive of what we, as the students, were dealing with. It was almost like these highly intelligent people were just oblivious to the ways that they were imposing harm through their actions (or inactions). I remember some times I had with my advisor. [They] were trying to be supportive, and I know [they] meant well, but *I knew that [they] didn't really have what [they] needed to really give me the feedback I needed. I also knew that [they] didn't really have the backbone to stand up for anything I did. And because of that, I needed to get buy-in from the people who [they] were looking to for approval. So, I feel like it was a lot more painful than the first one. Because the first one was just a research assistantship I was on, as much as it was irritating, it wasn't the thing I was doing to graduate. But the dissertation was significantly more important, and significantly more emotional, because like I said, it was the week of me defending, and I happened to be defending the last month that I had funding. So it was, "Not only have you not been supporting me this whole time, not only have you been deceitful about it, but now I don't know how I'm paying to finish this thing," and I had accepted a job offer. So, I ended up doing a whole extra year while working, and essentially had to rewrite my whole dissertation in three months. All of this with the backdrop of somebody acting like they're supporting me, acting like they're aware of what I'm going through. But it's like, "If you're aware of what I'm going through, you also should be aware of the significance of the thing you're supposed to be helping me with. And I get that you want me to have a good experience, but I need to have a good experience and get the fuck out of here. It's*

not just about me. My family is stressed out about this, as well, and you let me have a dissertation defense date[KADIJAH]. Now, *my second defense was private, obviously. My first advisor sent an email to the entire department saying, "Congratulations to Hippolyta for successfully defending her dissertation today." You didn't ask me. Why would you do that? Again, and it was just like, you publicly embarrassed me four months ago, why would you go back and do it again, and then not even be willing to have a conversation? To save yourself so you look good? The lack of consent that even happened after the violation is beyond belief. But yeah, it was both my advisor, my first advisor, my committee department head, and I would say department infrastructure people [that murdered my spirit]. Again, the fact that everyone who's on the graduate committee, who was supposed to be people that picked out these qualifying exam questions, people that laid out the process, no one was thoughtful in this. They were trying to reproduce what engineering does in the context of a discipline that, from what I understood, was a challenge to what engineering education is. There were even faculty, at graduation, literally at graduation, Dr. Donuthang was almost ashamed to look. And my first advisor just was like, "Congratulations, I'm glad that you stuck it out." And even Dr. Maledual, who at the time [had a dual appointment in our department and his], and said to me on graduation day, "We were always surprised that you came." Basically, it was meant to be complimentary, but it pissed me off*[HIPPOLYTA]. Because why would you tell me that? And what the hell did you mean? And, *after graduation, they sent an invitation to everyone who was graduating saying, "How many people from your family are coming [for cake and punch] so we can plan?" And I said, "I'm not coming." My first advisor sent out an email to the whole faculty and students anyway. And I replied back to all of them and said, "I*

am sure I told you I wasn't coming[HIPPOLYTA]*."* I really felt disrespected in that moment. Like, not only have you not done right by me this entire time, but you have the audacity to try to save face with everyone at the expense of my autonomy and desires. I said I wasn't coming, and I wasn't about to play that game with them. And I mean, *there's always a light at the tunnel*[NOSTALGIA]. I graduated. But that damn tunnel was all kinds of crooked, deceitful, damaged, and unruly. It was almost like everyone else knew how to get out of the tunnel with minimal harm except for me. I suppose this is because I didn't know much about the hidden curriculum then.

The hidden curriculum was the absolute worst. It is the way I describe all of the "commonsense" ideas that I was expected to know without anyone teaching me. You know, the type of information that white male students with parents who have engineering degrees and PhDs already knew, or their social location in society allowed them access to know these things. I mean, going back to my PhD milestones, *it's just like the pressure of just the unknown. I like knowing things and I don't like review processes because I really don't know what people are going to say. Sometimes the things that they say aren't bad, it's just the messaging could come off very harsh and it's like, "Oh, I don't want to deal with that, especially for something that I care very deeply and passionate about," but that's part of the process*[NOSTALGIA]. Part of the process was letting people pick apart in seconds the work that I spent months or even years preparing for. It was just the subjective nature of what was defined as good or bad in academia. And then I'm being judged by people who don't have my same ways of knowing or thinking, so even if I am right in what I write, it would be viewed wrong just because someone didn't understand it. And instead of asking for clarity or understanding, they would be demeaning or rude in

their responses. For instance, I remember when I did not pass my qualifying exam the first time and I had to retake it. Mind you, *it's not about the analysis, it is not about did they use the right measures, it was some nuance about how you're supposed to write engineering education quantitative research that no one taught us*HIPPOLYTA and *there were a lot of factors at play that I felt like I was being punished for when they were trying to protect people in the program. And I don't like feeling like a guinea pig and it basically pushed me back*NOSTALGIA*. The day that they sent the email saying I passed, they said, "We are no longer even having this question on the qualifying exam." I said, "Fuck y'all right there." Because that was one of the first times I really went off on my advisor because I was like, "Make this make sense." And my first advisor basically said, "Well, if you had passed it, it wouldn't have been a problem." The problem was the department didn't teach us quantitative methods. We had to take quant either through the stats department or sociology. I took the sociology one. And the thing was that the people who failed the question are [all] engineers, so how are we failing a quantitative exam*HIPPOLYTA*?* And during my comps process, *they got rid of quals period after me and I was like, well, fuck y'all. Why put me through this shit? And then there's this like all these different loopholes because they come out with a new handbook every year. So, it's like, "Well, [which am I] grandfathered into? But how can I be grandfathered if this no longer exists?" So, there's no consistency and there's no transition. I get that the department is new, but I feel like they make decisions without considering the students being impacted by it or without listening to student voice. Another thing that pisses me off, because I literally was on a committee that worked on [the] graduate handbook and [the] department chair asked me*

to look over the graduate handbook and I'm just like, "But y'all are still doing this ghetto shit and I'm being impacted by it[NOSTALGIA]*.*"

And I mean, I remember when I first wanted to prepare for my comps, and my advisor sent an interestingly worded email with a laundry list of things I needed to do to be able to do my comps. Some of the stuff, I was aware of, but some of it I had never heard before until that day. And I mean, it was *very disruptive to my flow. When what I thought I was doing, what I thought was progressing just ended up not going to be good enough to reach what was listed out for me. I realized that no matter how hard I break my back to do this, I'm not going to reach where [my advisor is] wanting me to be when I'm wanting to be there. So, it was a revelation that took me a little by surprise, not fully because I did understand that I was taking on a big challenge, but I guess I just never really felt that I couldn't do it until that moment. And then I guess that's all I can say about that*[KAGOME]. And for me, I honestly felt that if I gave you my dates beforehand, why not help me set myself up for success so that we are on the same page? Why am I being punished for things that you did not do? Because this conversation was sparked from a research meeting we had based on my advisor telling me that they were finding another student to work the grant so I could focus on my dissertation. And then the email basically said *"Well, before you get off you have to transition somebody onto it," which my advisor hadn't found somebody. And so, it's like, "You failed to find somebody and so now I'm basically going to have to stay on longer until you find somebody that you can put on it." One, that doesn't sound like something that should be my problem. But not only that, through everything that I've done ... I've worked on this more than my own research. All these years I've spent, I haven't been doing my own ... My research has been*

*evolving and I was finding my niche and everything else, but all my time really and all my effort has been spent on this grant. And it's like you tell me that if I choose to get off of it and I don't meet the expectations or whatever, or by defense time, then I'm going to have to pay for my last semester because you're not going to help me with funding for that*KAGOME. And I could not for the life of me fathom, again, how I was so qualified to support my advisor's grants and work but was not qualified enough to take my comps or do my defense? If that were the case, why was I spending so much time on your research if it really wasn't preparing me to get the degree that I came here for? Make it make sense. *And it's not that I'm just giving him little ideas [for my comps/dissertation] like I think we should do this and this and it's not thought through. I'm giving you whole ass thought out ideas and it's still like, "We need to redefine and re-refine. We need to refine and refine and refine." At this point I'm just like, "What else are you looking for me to do?"* And then it's, *"Oh, you have this design. Okay, well I really need to see a detailed view of where we're going with this. What are your other studies going to look like? Where are you trying to go with this?" But before I could pull the trigger on this one, I have to show the direction, a finite direction I want to go into. He needs to see the ending picture. But I'm sitting here. The whole point of a stepping study is to figure out where you're going to step next. Because you have no idea what your data's going to give you. And I don't know how I can say this to him. I just feel like the mentality of refining your studies, so you get the data you're looking for, to me, is a flawed approach*KAGOME. And don't get me started again on the bad committee member who basically failed me and then dropped my committee. *She was also being a bitch because when I sent in my dissertation, she said, "Well, you should know by now that I expect a printed bound copy of dissertations for the*

committees that I'm on. You should know this." Based on who? Ain't nobody said that to me. I had to pay $180 for a courier to print and deliver a bound copy of my dissertation to her. So even a hidden curriculum, just a very simple hidden curriculum. If you expect that, then you should've fucking said something[HIPPOLYTA]. I mean, I just felt like it was all subjective information that I knew nothing about it. I didn't grow up with anyone having a PhD and no one takes the time out to actually explain some of these things to you as you go through this process. And not only is the nature of success in our programs completely subjective, but there are also offensive and triggering educational practices as well.

The **offensive and triggering educational practices** ranged from how data was interpreted to white women using the n* word, but it all centered around my identity as a Black womxn. For example, the quantitative question I failed on the qualifying exam *was stereotype threat embedded. It was a trigger to write through this question about somebody's fucking made up computer based agent to teach Black women that they should be in engineering. And basically, the study said that, "Well, Black women resonated more to the White male avatar," and it was a trigger to read the paper that we were responding to. And no one paid attention to the fact that hey, you have your first Black student, well your first two Black students. You have your first two Black students taking the qualifying exam. First two Black students you have in the program. And y'all decided to pick a question that you didn't read for it being a trigger or a problem? Because the problem was, we had to critique a paper that was fucked up from concept to analysis to completion around race*[HIPPOLYTA]*. And then on top of it, you got this White woman [on my committee] teaching a class dropping N bombs because she thought she could.*

What the fuck? N bombs, yeah. You get that hard E-R [i.e., nigger][HIPPOLYTA]. And they just really tried to root my race and social background in everything that did not matter. For instance, when I was working on research or my dissertation and had ideas, everything was a question of if I was doing what I was doing *because I was so demographically different. And because of that, I needed to establish that before I could make the claims for what I thought the methodologies needed to be. But luckily by that point in my graduate career, I was smart enough to have put the guy from that first project, the Black guy on my committee, and one other person that I added, were able to be like, "Yes, you could do that. But that's really not going to establish what you think it's going to establish. There are other ways for her to establish what she's doing, that doesn't necessarily require her to bear her soul in this document." And I feel like throughout the process of actually finishing my dissertation, there were parts of me that were supported, and parts of me that were not. And I think my advisor did the best that [they] could in terms of supporting what [they] thought I needed to do as a person. But [they] didn't really connect the dots between me as a person and me in this program. To the point where we were eventually, where I could tell that [they] weren't really giving me quality feedback on what I was doing. [They] were more so just trying to support what [they] thought was my mental health, and really leaving it up to the committee to get the document to a place that it needed to be. Which just wasn't helpful, because I was on a timeline. I had only had so much funding, and it ended up being the week of my defense where my committee actually got the chance to see my document, and they were just like, "Absolutely not." I don't know, I talked to a few of them offline, and they were candidly, "We really were upset with Advisor," my advisor, "for letting you get to this place." And*

*for me, I just felt really betrayed. I felt like [they] were in my face, trying to support me as a person, trying to support me with all the trauma that came up, but still not supporting and not furthering my ideas and my expertise as a researcher. It's like [they] got so caught up in who I was, and how different I was, and trying to support that, that [they] really wasn't doing what [they] needed to do intellectually. And I felt like this piece speaks to that too. Because there were a lot of really interesting and, I think, groundbreaking things I was trying to present, and trying to establish as my research base, that [they] weren't really seeing, because [they] got caught up in the roots as well. I think, I'm sure [they] were well intended about it, but we did have to have multiple conversations about how I didn't trust her, that I eventually had to circumvent whatever little plan me and her had, and just make sure that each of my committee members could actually see the document before it went through her*KADIJAH. It was like my *ideas were being boxed in and not knowing where they fit in the world and what I do in engineering education*HARPER. Even a *faculty member tried to override my access to the program where I was collecting my dissertation data. But thank God I had a good relationship with the program director. And also one of my committee members pretty much said, "No, your student will not be able to have access to this program because it could affect Marvilous' progress." But just the idea that he said, oh, you can add your questions to our protocol. What the hell? Why can't I just ask my own questions with the students I've been working with for years? And so that pretty much, I guess, now that I'm really thinking about it, it just made me feel like my ideas didn't matter. They could be marginalized because someone else who has more power than me could or thought they could just override me.*

But thankfully, I had built the relationship [with the program director][HARPER]. It was like my agency to develop professionally as an academic and a scholar was diminished.

Self-agentic professional development was what I desired in my program, and it was not really accessible. *I think they've slowed my development. I definitely think I could have been further along than where I am now as a scholar. So that's one thing that I found disappointing. I definitely feel like if I was actually free to think, then I would be so much further along as a scholar. Because when I think about programming for data analysis from my research, it's like, "Now that I have to actually think and focus, I'm learning all this stuff that I was like, 'Dang, this stuff ain't even that hard. I wish I would've learned this three years ago, because then I could have finished my data analysis.'" So that's one thing, because of these experiences, I really slowed my growth and development into the scholar that I am now. And I don't want to say I have regrets, but I don't feel great about that*[ASHLEY]*. Then my advisor went MIA. Another reason I'm like, "Okay. I got to self-advocate for myself," because I don't know. It's one thing to have support, but I think what's more critical is having consistent support and knowing that it's going to be there when you need it, but that wasn't always the case in my graduate studies. Honestly, the only consistent support that I can bank on that I've utilized throughout my PhD program was myself. I'm just like, "Well, at the end of day I knew I had to get it done, so let me do what I need to do to take care of myself to do that," because I don't necessarily have to rely on my advisor. I don't want to rely on the department and I'm not relying on the school because it's ghetto*[NOSTALGIA]. And the worst part of it all, was that they did not value my intellectual contributions. *I would try to say something that I thought would contribute and take the conversation of the project to a*

better place. But when I'm spirit murdered, it feels like people take what I say and just try to ground it and relate it to something that they already know about. And because of who I am and because of the history of how people like me have been treated, usually they're trying to ground it to something that is terrible or sad. It might be real, it might have very real connections and feel very real for them in the conversation, but it's still taking what I'm trying to say and grounding it in something that is not productive or helpful. So yes, I might have said a whole bunch of stuff about what I think we could do to change the experiences of Black people, but the conversation becomes just about how bad the experiences are or the project becomes more deficit focused as opposed to actually trying to get us better. It speaks to trying to be a whole person that is aware of the good and bad that is really trying to get us to go somewhere better, but not being able to do that because people are taking what you say and making it into something that fits some framework or some trauma that they already are used to understanding. And it's not necessary because the truth of whatever they're murdering, I already know about and it's already baked into my experience, which is why I'm saying what I'm saying. So you can keep us in this cycle of the painful part, but really what I'm trying to do and what I'm trying to say is trying to get us to whatever better might be. Because I feel like when I'm spirit murdered, you're keeping the conversation, you're keeping my work, you're keeping the project in a place that just feeds into this cycle, but doesn't really allow us to ever have a better situation or ever have a conversation about what I was trying to say or where I was trying to go. It just got really weirdly grounded into whatever people already understand[KADIJAH]. Don't get me wrong, it's not that I didn't want people to understand me or where I came from. However, if all you can do is focus on my differences and

diminish the intellectual contributions that I am giving you, you are devaluing me as an intellectual, as a scholar, as a human being with a mind and feelings. And I had plenty of interpersonal, everyday relationships that felt the same way.

The Reflection

Within the hegemonic domain of power, the major thing to consider is the hidden curriculum (Jackson, 1969) being used as a resource to keep Black women engineering PhD students as outsiders-within. Because of the subjective nature of success within engineering PhD programs, the hidden curriculum typically impacts those who don't have engineering or PhD family backgrounds. On top of that, it impacts Black women because the hidden curriculum is made up of unspoken values, beliefs, norms, and culture, things that are developed by the majority within their engineering programs. Therefore, white male faculty dominate what is included in the hidden curriculum within engineering doctoral programs, which places Black women an extra two degrees outside of the normal outsider feeling that students may feel. The aloof nature of the ivory tower (Baldwin, 2021) enhances this outsider feeling and expounds on the pain felt during spirit-murdering experiences for these Homegirls. Within engineering PhD programs, the subjective criterion of success imposes unchecked actions and decisions that causes further marginalization of Black womxn.

Interpersonal

Dear Marvilous Mob,

Today, I want to think back through my last few years of school as I worked to obtain my engineering PhD from Delusion University. As I reflect back on my PhD

process, I think about how spirit-murdering impacted my life on multiple levels. For Part 4 of this 4 part series, I want to reflect on the **INTERPERSONAL** level of power and how these experiences impacted me. The interpersonal domain of power represents the everyday actions, interactions, and consciousness of individuals to establish dominance and cultivate marginalization, discrimination, and exclusion of Black womxn. Within this interpersonal domain of power, I identified the following themes: 1) betrayal and mistrust in the individual actions and communication and 2) reduced me down to my marginalized identity. Homegirls felt betrayed by the actions of their advisors and faculty members and also felt mistrust in their communication practices. People reduced Black womxn down to marginalized identities by looking at the color of their skin and other variable differences, and framed their opinions about them, their intellect, and their experiences around ideas of what they thought those marginalized identities meant. The definitions for each sub-theme can also be found within the blog after the first mention of the sub-theme, which is bolded.

The Recap

I felt a lot of **betrayal and mistrust in the individual actions and communication** while trying to progress in my program. There were quite *a few interactions that I had with my first advisor who was a very, very white man. There were a couple times where I was like excited about something that I had done, that he was just not excited. And then, there were other times where I was like concerned about something very real and [they] didn't take it seriously. So, the first time was when I first published my first poetry book. And, I had designed it, wrote it, got ISBN, got it on Amazon. I was really fucking excited about it, because I felt like I was finally figuring out how to be like*

a scholar but also creative. And [they] were just like, "Okay." [Their] eyes didn't light up, nothing about the cadence of [their voice changed], like [they] didn't pause anything about the meeting. It was just like, "Oh, cool." And then [they] moved on. It felt like spirit murdering because I felt like, if [they] knew me for real and if [they] knew me as much as [they] had been acting like they knew me when we were doing research work, then he would [have] known how big of a deal it was. But the fact that they didn't take any energy to care about it, it made me feel like my advisor only really cared about me when I was publishing for [them] or doing something for the camps or something like that. And then, another time it was right before Trump got elected. And you know, living in a RedState in a Black body as that shit was happening was terrifying. But I think [they] were just still very much into like "This can't happen" kind of shit. And [they] were like, joking. [They] pretty much were like, "We'll get Hillary before we get Trump." And I was like [wow], [they] downplayed it, but also it was like a very sexist comment to make, because you're almost saying that like, "Trump is so bad that I'd take Hillary." And it's like, "Well, Hillary actually has fucking experience for this role. And you should not just be taking anyone." But, ignoring that, the fact that my advisor had no concept of how scary it was, the stuff that was coming out of Trump's mouth, stuff that people were doing, the real stuff that was happening on campus. And it bothered me because there was like another woman of color in our group who was like an immigrant and had all different levels of concerns about Trump. We were very clearly like… it just wasn't a good day. We were very clearly not doing well. And [they] just made jokes all over. It was just like, like it was nothing. I remember feeling just like [they] couldn't see me for real. I feel like any time that you're made to feel like what you've gone through didn't happen, or isn't that

*important, or isn't that deep, a part of you kind of got murdered, or you like, "Okay, well, I'm just carrying around a ghost or some problems that's not really there. Like, just my dead self walking around here with concerns about shit that might have never happened. And then, when Trump actually got elected, of course [they] didn't say shit. [They] just kind of dealt with it. Yeah, that should have been a sign to change [advisors] then, but I was still getting paid well. So, I was like, "I'll be quiet and mind my business. Because it seemed [they] were less murdering than the rest of [the faculty members], so I was like, "Whatever*KADIJAH*."* It was one of the very real ways that the aloof nature of people in the ivory tower played out in everyday interactions. And even when it came to conversations with my advisor about my progression, it *felt a lot like.. No, it felt almost exactly like that. Just the worthless feeling. The unaccomplished feeling. The failure feeling. All of those feelings flooded my mind, my body. I could feel it to my fingertips. Just all of it. And I guess what had changed is that I was a little better at holding my tears. So I didn't cry, but that was me working a little faster on putting my emotions into a box. I'm a lot quicker at it now. Again, I'm not saying it is a badge of honor because it's probably very unhealthy. Probably very unhealthy. But I am a lot quicker. When I start feeling those emotions, I'm a lot quicker at putting them in the box and putting them aside. So I did.* And then after that meeting where he gave me the list of things…*Some of the things on the list weren't like, "Oh, it's the first time I'm ever hearing of this." There were a couple things where I was just like, "Okay, why did that have to even be stated?" It's kind of a given that had to be done, but the way that [they] framed it would be like, "Know that you have to do this?" Basically like this is the action and then this is also the consequences that'll come with that," how [they] were framing it. And then some of the things was*

framed just around how [they] basically would be too busy to deal with me trying to push this through. And whether he meant it to be like that or not is exactly how it came off. I mean if you list to me I'm doing X, Y, Z and that be one of the reasons why I can't [advance in the program], then that's you telling me that, "Okay, I don't really have time to deal with [supporting you right now]." Let's just be real. I will call it a threat of funding or lack thereof. That [email] message was loaded. Just absolutely loaded it. All of the motivation I had, all the motivation that had me working full time during the day, getting right off of work and literally still at the office transitioning to my research, all that motivation I had doing all of that, doing my work assignments and all working on the weekends. I was working six, seven days a week. It was happening. Whether it was killing me or not, it was happening. But all of that just deflated the second this ... I don't know, just all of that went out the window, which of course affected me in other ways because I am that type of person that when I have stuff going on, I feel very productive. And when I don't, I don't. And by that deflating me as much as it did, it affected me in other ways as well KAGOME. I really started to question myself as a scholar, as an intellectual, and as a person. I mean I know that we are all humans but during my PhD process, I really felt like people treated me like a tool, a resource, a non-living product that they can benefit from. It was the worst feeling. And it was like, when I was seen as a person, it was solely my marginalized identities.

I mean people really **reduced me down to my marginalized identity**. When I say this, I mean that people looked at the color of my skin, or any other variable differences, and framed their opinions about me, my intellect, and my experiences around their ideas of what my marginalized identities meant to them. For instance, I remember

when I joined my first advisor's lab. [They] were a new professor at the time. [Their] *lab was all about increasing opportunities to do engineering work in different communities. But [their] lab wasn't really racial diversity-focused, it was just inclusion in general. We never had that many conversations about how I felt as a Black person on campus. But I did a lot of activism, but I never directly shared any of that activism with [them]. But I guess [they] heard about it around campus, and a lot of the projects, I'm not going to say, "A lot," the projects that [they] suggested to me, were usually racially-focused. And even as we were working on other projects, I felt like [they] would often put me on the part of the project that required the lit review into the experiences of the students, which is a very common grad student task. But it also bothered me; because I had been really clear that what I was really interested in was new methodologies. I was also really interested in more of understanding students' present experiences. I had also made it pretty clear that I was interested in the out-of-classroom experiences of students. But the major project that I ended up working on, was about the experiences of Black and Brown students in mechanical engineering. That was, I think, mostly because [they] were on the board for that project, and they needed a researcher. And I think [they] probably saw some of the activism I was doing on the news, or maybe it was coming up in staff meetings. So [they] assumed that would be something I was interested in. And, fundamentally, I wasn't, because I knew for me, having just finished an undergrad in engineering at a predominantly white institution, I knew it would bring up some stuff that I wasn't really trying to process. But I also knew if I didn't do it, I didn't really trust that there was anybody else that could do it in a way that didn't re-traumatize the students. And because I was doing all this activism, I had a lot of personal relationships with the*

Black students in that department, and I just didn't want them to go through that. I also didn't want their first experience with engineering education to be something that was traumatizing and poorly informed. As we worked on that project, you know, because the project was what it was, whenever I would have ideas about different ways of engagement, and even recruitment, I knew sending out emails wouldn't be enough. I knew students were not going to come talk about their experience for $15. Also knew that [with] this particular population, there was no way to really protect the students if the project only focused on mechanical engineering students because there was only four or five of them in a program. So no matter what pseudonyms I gave them, because I was reporting back to the department heads and their professors, you would know who the students were. So I had to fight to make sure that we're recruiting not just through email, but that I'm showing up to events, that I'm doing information sessions, offering food. I also had to fight to make sure that they got paid at least $40-$50 for every conversation and every interaction they had with me, which was, I think, outside of the budget that they had for the project initially. Then I also had to fight to do research on students who were not just in mechanical engineering. One, because I knew though the disciplines are fundamentally different, the experiences were going to be very similar. Two, like I said, because I knew that in order to really get data from these students, and be able to protect them in some way, I needed to have a larger sample size. I was able to get all those things, but not because my advisor helped me in any way. There was actually another professor who was on the board, who was a Black man, who I had experience with because he worked with minority engineering program, and we just had a personal relationship. And when I would say things, and they would question them in the meeting,

usually before you got the chance to question it, [this Black man] would say the thing that validates what I'm saying. But I remember the meetings that [this Black man] wasn't at because I both had to say the thing and also defend the thing and also come to an agreement on the thing. That's relatively natural to research. But I think the racial component of it was still very present for me. And even when me and my advisor were trying to publish about the work that I did afterwards, it was just very clear that [they] didn't understand, and was looking to me to help [they] to understand what we were trying to say in the publication. Which was just frustrating because when you're publishing, you have to defend yourself to the reviewers. But to try to have to defend yourself to your co-author, who actually, because [they] were a major professor, [they] were the first author. So it's like, "I don't feel comfortable writing a paper with you, with your name as first author, if you don't really understand why we need to talk about the social positionality of Black people and then talk about the social positionality of Black engineers." [They] just didn't get it. But it continued in different ways once I changed advisors. I feel like my second advisor, [they] were more supportive of me, but also didn't have a lot of experience with supporting researchers with different mindsets. I think [they]'d had a lot of Black female students in the past, but a lot of the students [they] had, were doing more conventional studies. [Their students] were a lot more, I'll say, they were a lot more assimilated, and very much on the pathway of traditional academia. And therefore, were very much looking to establish themselves as researchers that could do what was expected of them. And I feel like throughout the process of actually finishing my dissertation, there were parts of me that were supported, and parts of me that were not[KADIJAH]. I mean, after all of the work that I did, all of the contributions that I made, all of

the progress that I made, all of the footwork that I did, I was still diminished to just being the Black girl with other marginalized identities who could only contribute in limited ways, or ways that weren't seen as valuable. And there was little to no accountability for the wrongdoing of the faculty. And after all of these experiences, *I'm not a cocky person but I know I do fucking amazing work*[KAGOME]. And even though I graduated, it still left me with the remnants of a multi-murdered spirit.

The Reflection

Within the interpersonal domain of power, racial bias and institutional betrayal were two of the major things that should be considered in the experiences of Black women engineering PhD students. Much of the research that discusses microaggressions (Wilkins-Yel et al., 2019), racial bias (J. B. Williams, n.d.), stereotype threat (E. O. McGee & Martin, 2011), etc. is usually found in this domain, and they all showed up as being prevalent in these Homegirls' experiences. Due to white privilege and power dynamics (Eastman et al., 2019; Kovach, 2020), most faculty operate in ways that are demeaning and devaluing to the Homegirls and they seem oblivious to how their actions impose harm on those in their research groups/labs. For instance, the "hands-off" advising approach can be felt as an indifference of support for a student, especially if they are not familiar with engineering doctoral program practices.

Moving Forward

Marvilous Marie's blog entries represent the stories of my six Homegirls who shared their spirit-murdering experiences with me to shed light on the ways that the matrix of domination impacted their PhD process as well as their well-being. In an effort

to center their voices but not necessarily their pain/trauma, I chose to expose some of the inequitable practices and policies that caused the murder and the environment that it was in. Throughout her PhD program recap, Marvilous Marie unpacked her experiences within the structural, disciplinary, hegemonic, and interpersonal domains of power coined by Collins (1990). Many of her experiences were multi-layered, spanning across multiple levels within the domains of power. For instance, the subjective and unquestioned criteria for passing PhD milestones spanned across all domains of power.

Many scholars have begun to see academia, the professoriate, and doctoral education as being part of this ivory tower (*Ivory Tower*, 1894). Here, in this work, it is the site for, and cause of, the spirit-murdering incidents that impede liberation and progress for Black womxn in these spaces. The lack of concern placed around the needs and inclusion of Black womxn in these spaces causes spaces for spirit-murdering to occur. There was no additional support to aid in the inadequate racial/gender representation present in the programs. There was no direct action taken to help our Homegirls combat discouraging classroom and peer interactions. No one helped when the Homegirls had toxic advisor/advisee relationships. No one cared about the injustices that were present because of bias that caused our Homegirls to fail PhD milestones while being the high-achieving, token diversity staple. The ivory tower, and engineering, were developed without the inclusion of marginalized cultures and therefore is systemically cracked and flawed in the design of its processes and must be recognized as such. It is because inclusion of these groups is surface-level, and not embedded within our practices, that spirits will continue to be murdered, resulting in more people leaving the academy.

There are several implications for the data that was examined. The first implication is that spirit-murdering is not about the color of your skin. It's about the whiteness of the interaction, which means that anyone operating in a power position can spirit-murder someone. The second implication is that there is no flat experience. Everything is multidimensional and layered heavily across marginalized identities as well as levels of power. The third implication is that these Homegirls are navigating tension amongst multiple identities at one time that are marginalized in engineering doctoral program spaces - Black/woman/professional/researcher/student.

Therefore, here are a few things that can be done at each level by institutional stakeholders. The first thing is that more research to examine successful cases of institutions humanizing their graduate students in just ways at the structural level can be done. Faculty can also examine the ways that they view their relationships with their students - as professionals in a partnership, not through an apprenticeship lens. Based on the structural domain of power, it is important that institutions find ways to honor their students as holistic, professional, human beings who have lives outside of academia. Providing some level of autonomy to your doctoral students will challenge the outdated systemic setup of the ivory tower but provide liberation to your students in ways that can advance the field. For example, honor when your students need a mental break, or when they tell you working on a certain project does not aid in their overall success. These students are professionals who have lived a life long before they were ever introduced to you. You only have a glimpse into who they are as a person, so trust them when they tell you what they know to be best for them.

At the disciplinary domain of power, faculty can be accepting of students with interests and grounding in other methodologies and epistemologies. They can also examine policies for racial and gendered underpinnings. Based on this domain of power, it is important that faculty find ways to honor the independence and professionalism of their students without snuffing out their light for personal gain. For example, if a student wants to explore varying research projects in class or outside of your work, honor that and allow them the flexibility to do so (with your support). Every single thing they do should not just be associated with your academic interests and needs. Varying theories and methods should be acceptable, with you having an interest in further advancing your own scholarship by adding these things to your toolbox.

Within the hegemonic domain of power, faculty can demystify the hidden curriculum and examine qualifying exam, comprehensive exams, and dissertation defense policies for racial and gendered underpinnings. Based on this domain of power, it is important that faculty find ways to make students privy to their idea of success in a clear, concise, objective way. For instance, when it comes to qualifying exams or comprehensive exams, there can be examples provided, a set of evaluation criteria, and preparation workshops. Having these aids does not mitigate the rigor of your program but sets your program up for collective success by supporting those who support your programs' growth.

On an interpersonal level, they can be reflective and critical of their actions and unconscious biases every day. Based on this domain of power, it is important that faculty find ways to honor the reflection and adaptation of their actions to be supportive of their

doctoral students. For example, have a checks and balances system with your lab that provides a safe space for addressing potential issues to identify potential solutions.

By taking these steps, we can work to mitigate the spirit-murdering experiences of all engineering doctoral students and enact justice and equity within our programs.

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CHAPTER 3

JOURNAL PAPER #2 - "I DIDN'T SUCCUMB TO THE DARKNESS": MULTI-MODAL REFLECTIONS ON BLACK WOMEN'S ENGINEERING PHD EXPERIENCES

Abstract

This journal paper seeks to engage debate for the use of multi-modal representations of qualitative inquiry within engineering education research. Using representations of art, poetic inquiry, and creative analytical processes, this research seeks to understand Black womxn's reflections of their spirit-murdering experiences in their respective engineering doctoral programs. The poem itself, compiled from the excerpts of six Homegirls, or intellectual contributors, highlights the collective and individual accounts of the impact of spirit-murdering experiences. The art itself, used as a culminating piece to corroborate the composite poem. Findings from this research shows that Black womxn: 1) share common epistemologies with differing positionalities that are subject to the same spirit-murdering, 2) experience targeted acts of spirit-murdering that result in longitudinal impacts on professional endeavors, personal health, and intellectual efficacy, and 3) often operate within the dialectical relationship between oppression and activism within their programs.

Art

Illustration 1. **"Cut Across, Into the Womanism and Positive That Wraps Her"**. Hippolyta, 2022. Multi-dimensional Painting.

Poem: "I Didn't Succumb to the Darkness"

Just being a Black woman, we all know what's there without even saying it. (Kagome)

We all know that someone somewhere is trying to suck the life out of you. (Kagome)

Doubt. Anger. Questions. Angry. Mad. Sad. Am I sure? (Ashley)

The things I think. They burn in my mind. And it's just unfortunate. (Ashley/Kagome)

****

I'm a grown ass woman, but this is still my formative years as far as career goes. (Kagome)

And my positionality is not up for conversation for real. It is what it is. (Kadijah)

But if you want to have that conversation, that's a different invoice, (Kadijah)

and that's not necessarily what I'm being paid to do, what the research project is. (Kadijah)

****

But it's still just that pressure of, (Nostalgia)

"I'm about to do all this hard work and the decision is still in somebody else's hands. (Nostalgia)

My approach to engineering research… how it's taught to us anyway.. (Nostalgia)

There's only one correct answer. Only one correct way to do it. (Nostalgia)

However, I want to make it my own, to make it authentic, representative of the population I'm trying to serve. (Nostalgia)

****

So the time process I've had dealing with spirit-murdering (Nostalgia)

to rebuild who I am, the way I perceive things and how I want to be, (Nostalgia)

Our heckles rise up, our blood pressure rises up, our body temperatures rise. (Kadijah)

Figuratively, you have this thing happen to you. Your spirit dies. (Nostalgia)

****

Spirit-murdering is targeted. It is targeted. It's accumulation, though. (Hippolyta)

[They're] going after you, your scholarship, your work, what you do, how you are in this world. (Hippolyta)

I can't un-remember some of the things said and written. It lessens a bit over time, but 9 years out, I still experience it. (Hippolyta)

So that (fuels) me having anxiety about what does this mean for my standing in the program? (Harper)

I couldn't grasp what I've actually done with my life these past four years. It called everything into question. (Kagome)

****

Confusion. Angry. Super pissed. White woman's tears. Made me feel like I was in trouble. (Harper)

It's a blindsided eruption. It's just a real shock to your system. I still battle with that. (Nostalgia/Ashley)

But they all cut across into the womanism, that cut into the person, into her face. (Hippolyta)

The womanism and the positive that wraps her up to push up against that. (Hippolyta)

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It's a constant battle... And always be ready to fight in my mind. (Ashley)

Not being enough. Always question myself. (Ashley)

Anxiety and depression were not really parts of my life until grad school. (Hippolyta)

Ruined my gut. Definite connections for Black women and fibroids and anxiety and stress. (Hippolyta)

****

Times over the years where my hair was coming out. (Hippolyta)

Weight gain… Exercise every day… I'm not losing any weight (Hippolyta)

Just talking about it still gives me a physical visceral reaction. (Kagome)

Figurative blood, sweat, and tears. But some of that was literal in a lot of ways. (Hippolyta)

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Yes, I would love to teach, but how much is that dream going to cost me? (Ashley)

If that dream causes me to get sick and die by 40, is it worth it? (Ashley)

So in order to [let my spirit rejuvenate], I'm in autopilot. Not really stirring the pot, not really making no noise. (Nostalgia)

Having this darkness, and even in the dark cloud, …pieces of red and orange.. Representing hell. (Hippolyta)

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Textures. Directional. Maroon, just the harshness. It's not a flat experience, .. demonstrate some additional depth. (Hippolyta)

The environment is different, but the context is at least partly the same. A different person projecting this, but the impact being similar. (Kagome)

The red is definitely the thing that people get caught up on, which is the trauma, or the roots, or what might make me different from whatever space I'm in. (Kadijah)

That purple angle, where it might look like trauma… is more royal. That's just the background of where I come from. (Kadijah)

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It's been over 50 years. You should have been changed something right then or there. (Ashley)

And if you're not going to change over the next 50 years, why are you lying to me? (Ashley)

Do what you need to do so your committee will let you out. (Ashley)

Even though I can survive this, do I necessarily have to go through that again in an academic career? (Ashley)

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I know that I can put the work in to get whatever I need to get done. (Ashley)

But now I think it's like, "Is it necessary?... Does it really require this?" (Ashley)

It's really hard for me to even be interested in entering [academia] again. (Kadijah)

I still want to, but I think I have a lot more standards about what that would need to look like. (Kadijah).

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I'm seeing that I'm also proud that even with all these dark things or doubts, (Nostalgia)

I didn't give up. I didn't succumb to the darkness. (Nostalgia)

I don't know if that's resiliency or what, (Nostalgia)

And maybe this is something that I'm learning, too. (Nostalgia)

Arts Based Research Methods

Explanation of Poem Creation

This narrative poem (Butler-Kisber, 2018; Willis, 2019) was created by marrying the art of storytelling (Hoffman & Martin, 2020), poetic inquiry (Kromidas, 2019; McClaurin, 2001; Prendergast et al., 2009), and creative analytical processes (McClaurin, 2001; Owton, 2013) together to create a composite narrative expression that highlighted the collective and individual Black women's ways of accounting the impact of spirit-murdering experiences throughout their engineering doctoral programs. The Black women included in this research are all intellectual contributors, aka Homegirls, in my dissertation study. The six Homegirls in my study identified as Black women with previous professional experience who were enrolled in, or had already graduated from, historically white institution (HWI) engineering PhD programs in the United States. Homegirls contributed to my dissertation study by 1) engaging in an initial homegirl conversation, which served as an initial consultation to make sure we operationalized "spirit-murdering" the same way; 2) creating a 2D art piece describing what spirit-murdering means to them; 3) recording a narrative explaining the conception of their art piece and what each component means; and 4) a "spirit-murdering" homegirl conversation, where we had conversations that ebbed and flowed around their experiences within their engineering doctoral programs. The creation of the poem was based on the data collection of the art narrative and "spirit-murdering" homegirl conversation transcripts. While doing a second pass with the transcripts, I used a

codebook developed from the first pass with the data and coded based on 1) the conceptualization of spirit-murdering, 2) the spirit-murdering experience, 3) the homegirl's positionality, 4) and the homegirl's perspectives on their experiences. Once I found the transcripts associated with these themes, I determined how I wanted to set up the flow of the poem. I used an interpretive lens to determine the flow of the themes. I wanted to open with their positionality, feed into their spirit-murdering experiences, followed by their conceptualization of spirit-murdering, and finish with their perspectives on their experiences. I then decided that I wanted to honor individual experiences but highlight how they also represent the collective of the Homegirls in this study. Therefore, based on the desired flow of the poem, I started piecing together lines of their excerpts as if it was one long narrative expression, which led to the resulting poem above. As I was piecing together the quotes from the individual narratives, I studied the art pieces to see which best represented the collective view on their experiences, and I decided on "Cut Across, Into the Womanism and Positive That Wraps Her".

Explanation of Artistic Painting

The piece is titled "Cut Across, Into the Womanism and Positive That Wraps Her." A multi-dimensional painting created by Hippolyta in 2022 as a research artifact in my dissertation study. Each of the six intellectual contributors were asked to create a visual artistic expression of what spirit-murdering meant to them, and Hippolyta chose to create a multi-dimensional painting about her conceptualization of spirit-murdering based on her engineering journey from undergrad through the doctoral program. Hippolyta's art piece was chosen because it artistically called out many of the commonalities across the

intellectual contributors in this study. One of the main tenets was that of self-defined values and identity, and the way they described themselves as whole human beings prior to their engagement in an engineering doctoral program. Each of the six intellectual contributors referenced their identity and values with things representing beauty, strength, intelligence, resilience, pride, and community. For instance, most women drew themselves as different shades of Black bodies, and had colors like white, gold, and purple to represent their womanism, intellect, and royalty. The second main tenet was the harshness of their engineering doctoral program experiences, each referring to some form of correction and surveillance (Foucault, 1990) and institutional betrayal and trauma (Smith & Freyd, 2014) that they experienced because of their marginalized identities and values. Each of the six intellectual contributors referenced this harshness with warm colors, like orange and red, which traditionally represent intensity when used to describe degree or depth. The third main tenet was the longitudinal impact it had on them, most expressing psychological harm manifesting in physical ways. This was represented by something coming towards their face (which corresponds with their identity), towards the top of their head (which corresponds with their intellect and epistemology), and towards their body (which corresponds with their strength and stability).

Discussion

Explanation of Poem Content

Stanza 1: Kagome/Ashley speak about a common, understood epistemology (or way of knowing) for Black women because of their shared experiences of being Black

and woman in their current social location, which in this case is multi-layered (see restatement of Stanza 1 below).

Just being a Black woman, we all know what's there without even saying it. (Kagome)
We all know that someone somewhere is trying to suck the life out of you. (Kagome)
Doubt. Anger. Questions. Angry. Mad. Sad. Am I sure? (Ashley)
The things I think.. They burn in my mind. And it's just unfortunate. (Ashley/Kagome)

The multi-layered social location that these women exist in includes: 1) the United States - which happens to be majority white, 2) their respective doctoral institutions - which are all historically white institutions, and 3) their respective engineering doctoral programs – with roughly 0.56% of engineering doctorates being awarded to Black womxn in the year 2021 (American Society for Engineering Education, 2022). Because of their social location within these environments that they live and operate in, they experience things that only people with those marginalized identities can, and will, experience as a result of their marginalized identities (Charleston et al., 2014; Wilkins-Yel et al., 2022). Black women experience things that other social groups would not, and do not understand because they exist within a different social location within society. Therefore, when Black women try to explain their experiences and ways of knowing, it is often looked at as subjugated knowledge (Michel Foucault, 1980, p.82), resulting in them questioning their intellectual aptitude/ability. This coincides with several tenets of a theory that Patricia Hill Collins developed called Black Feminist Thought (Collins, 1990). Black Feminist Thought (BFT) is a theory that represents a collective of words, ideas, expressions, and experiences of Black feminist intellectuals both within and outside of

academia (Collins, 1990). It is vital to examining how the complexities of Black womxn's intersecting oppressions of race, class, gender, sexuality, and more shape our experiences and how these experiences shape consciousness as Black women (Collins, 1990). Even more, it explains how these experiences are cultivated through the matrix of domination (Collins, 1990), which is an interlocking system of oppression with multiple levels that causes oppression for those with multiple marginalized identities. This matrix of domination presents multi-layered oppressive experiences that work to kill the mind and spirit, which often manifests in physical ways. I will refer to these experiences and the implications of these experiences as spirit-murdering. I first heard the term spirit-murdering in accordance with scholars Patricia Williams (1987) and Bettina Love (2014, 2017), as "the personal, psychological, and spiritual injuries to people of color through the fixed, yet fluid and moldable, structures of racism, privilege, and power." Because of my interest in exploring Black women, I felt marrying the spirit-murdering definition with the tenets of BFT would be complimentary in exploring *Black women's reflections of spirit-murdering experiences in their engineering doctoral programs through multi-modal representations*.

Stanza 2: Kagome/Kadijah speak about their positionality (Pollock, Megan, 2021 Blog - Engineer Inclusion) as it relates to their Black, woman, adult, professional, and researcher identities (see restatement of Stanza 2 below).

I'm a grown ass woman, but this is still my formative years as far as career goes. (Kagome)

And my positionality is not up for conversation for real. It is what it is. (Kadijah)

But if you want to have that conversation, that's a different invoice, (Kadijah)

and that's not necessarily what I'm being paid to do, what the research project is.

(Kadijah)

Operating in these engineering PhD spaces, these intellectual contributors describe how their intellectual contributions, their values and identities, are often under surveillance and not valued or respected within their scholarly environments. They even acknowledge the tension that occurs between their identities as adult Black women with professional work experience and their roles as doctoral students and engineering researchers on their advisor's or other faculty's grant projects. They speak on how people question what they know in a way that questions their identity and their intellect. However, they also own their professional identities as well by sharing their identities as "grown ass wom[e]n" and needing people to pay them for that additional labor of also having to explain who they are, which is a burden that students existing in privileged groups do not have to do. This is referred to as the minority tax (Rodriguez, 2015), which is the "burden of time and resources placed on minority persons to represent and advocate for their communities. (p.1)"

Stanza 3: Nostalgia speaks on being in an environment like her engineering doctoral program, where there is a preconceived notion of being objective and there being a right way to engineer (see restatement of Stanza 3 below).

But it's still just that pressure of, (Nostalgia)

"I'm about to do all this hard work and the decision is still in somebody else's hands. (Nostalgia)

My approach to engineering research… how it's taught to us anyway.. (Nostalgia)

There's only one correct answer. Only one correct way to do it. (Nostalgia)

However, I want to make it my own, to make it authentic, representative of the population I'm trying to serve. (Nostalgia)

However, what do you do when certain ways of being and doing in engineering do not align with your values, your way of knowing, and your way of doing? This is what happens for Black women in engineering when they are taught to be objective. From an outsider-within (Hill Collins, 1990) perspective, you don't always have the same perspective as those who claim to be "objective." I argue that there is no such thing as objectivity in engineering because everything from inception, to design, to production, to deployment, to maintenance is done by human beings like you and me. The only difference from the Black women and the people who claim objectivity, is that Black women live in the margins of engineering. This means that the makeup of engineering norms, culture, rules, etc. are based on people who belong to the majority group, which is why they feel that these things are "fair" because they align with the majority. However, time has proven the majority may always rule, but the majority is not always right. This majority rule through notions of "objectivity" works to exclude any other way of establishing engineering practices, or innovations that are authentic to the engineer themselves, or representations of the populations they wish to serve. This adds an undue amount of pressure to Black women engineers to try to uphold their desires in a system that does not value what they value.

Stanza 4-8: Nostalgia/Kadijah/Hippolyta/Harper/Kagome/Ashley speak to the vicious way that spirit-murdering compounds upon them as Black women, as scholars, as human beings (see restatement of Stanzas 4-8).

So the time process I've had dealing with spirit-murdering (Nostalgia)

to rebuild who I am, the way I perceive things and how I want to be, (Nostalgia)

Our heckles rise up, our blood pressure rises up, our body temperatures rise. (Kadijah)

Figuratively, you have this thing happen to you. Your spirit dies. (Nostalgia)

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Spirit-murdering is targeted. It is targeted. It's accumulation, though. (Hippolyta)

[They're] going after you, your scholarship, your work, what you do, how you are in this world. (Hippolyta)

I can't un-remember some of the things said and written.. It lessens a bit over time, but 9 years out, I still experience it. (Hippolyta)

So that (fuels) me having anxiety about what does this mean for my standing in the program? (Harper)

I couldn't grasp what I've actually done with my life these past four years. It called everything into question. (Kagome)

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Confusion. Angry. Super pissed. White woman's tears. Made me feel like I was in trouble. (Harper)

It's a blindsided eruption. It's just a real shock to your system. I still battle with that. (Nostalgia/Ashley)

But they all cut across into the womanism, that cut into the person, into her face. (Hippolyta)

The womanism and the positive that wraps her up to push up against that. (Hippolyta)

****

It's a constant battle... And always be ready to fight in my mind. (Ashley)

Not being enough. Always question myself. (Ashley)

Anxiety and depression were not really parts of my life until grad school. (Hippolyta)

Ruined my gut. Definite connections for Black women and fibroids and anxiety and stress. (Hippolyta)

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Times over the years where my hair was coming out. (Hippolyta)

Weight gain… Exercise every day… I'm not losing any weight (Hippolyta)

Just talking about it still gives me a physical visceral reaction. (Kagome)

Figurative blood, sweat, and tears. But some of that was literal in a lot of ways. (Hippolyta)

They speak to the immediate impact being the physical response their body has to such a targeted offense. However, they also highlight what it does to their psyche, noting that the impact is longitudinal and multi-layered as well, causing them to have anxiety and question themselves. Mind you, these Black women were more than qualified to pursue their doctoral degrees based on the academic standard. All six intellectual contributors included throughout the entire poem had previous full-time and or internship professional experience prior to starting their PhD programs. Therefore, their intellect, according to the standards of whiteness, had been tried and true. Why is it that being in their engineering doctoral programs makes them question everything? I believe this is because of the hegemonic domain of power that exists in the matrix of domination (Collins, 1990). The hegemonic domain of power is where people justify old systems of ideas by refashioning them as new "commonsense" ideas. But recall, if Black women are outsiders-within when it comes to their engineering programs, they are typically not privy to the same notions of "common sense" as someone else who is demographically similar. This hegemonic way of operating causes spirit-murdering experiences to seem nonexistent to the majority group, causing one to uphold stereotypes of Black women speaking out on it as "sensitive", "angry", etc. (Doharty, 2020; Hill Collins, 2009; J.

Celeste Walley-Jean, 2009; McGee & Martin, 2011). This aloof nature of the ivory tower then begins to impose ideals like imposter syndrome (Nicole & DeBoer, 2020; Stitt & Happel-Parkins, 2019) into the minds of Black women engineering doctoral students. This pattern causes an ongoing cycle of accumulated murders of this social group's spirits, which manifests in emotional, mental, spiritual, and physical ways.

Stanza 9-13: Ashley/Hippolyta/Kagome/Kadijah/Nostalgia speak to this dialectical relationship between oppression and activism (Collins, 1990) and how that manifests itself through their understanding of the engineering academic environments they are in, or plan to be (see restatement of Stanzas 9-13).

Yes, I would love to teach, but how much is that dream going to cost me? (Ashley)

If that dream causes me to get sick and die by 40, is it worth it?" (Ashley)

So in order to [let my spirit rejuvenate], I'm in autopilot.. Not really stirring the pot, not really making no noise. (Nostalgia)

Having this darkness, and even in the dark cloud, …pieces of red and orange.. Representing hell. (Hippolyta)

****

Textures. Directional. Maroon, just the harshness. It's not a flat experience, .. demonstrate some additional depth. (Hippolyta)

The environment is different, but the context is at least partly the same. A different person projecting this, but the impact being similar. (Kagome)

The red is definitely the thing that people get caught up on, which is the trauma, or the roots, or what might make me different from whatever space I'm in. (Kadijah)

That purple angle, where it might look like trauma… is more royal. That's just the background of where I come from. (Kadijah)

****

It's been over 50 years. You should have been changed something right then or there. (Ashley)

And if you're not going to change over the next 50 years, why are you lying to me? (Ashley)

Do what you need to do so your committee will let you out. (Ashley)

Even though I can survive this, do I necessarily have to go through that again in an academic career? (Ashley)

****

I know that I can put the work in to get whatever I need to get done. (Ashley)

But now I think it's like, "Is it necessary?... Does it really require this?" (Ashley)

It's really hard for me to even be interested in entering [academia] again. (Kadijah)

I still want to, but I think I have a lot more standards about what that would need to look like. (Kadijah).

****

I'm seeing that I'm also proud that even with all these dark things or doubts, (Nostalgia)

I didn't give up. I didn't succumb to the darkness. (Nostalgia)

I don't know if that's resiliency or what, (Nostalgia)

And maybe this is something that I'm learning too. (Nostalgia)

The five intellectual contributors in Stanzas 9-13 started their initial homegirl conversations with desires to become engineering professors; yet all but one have decided not to pursue academic endeavors post-graduation. Although they enjoyed what they did, they critically assessed if engineering academia was the environment that would allow them to be authentically themselves, doing work that serves a purpose, aligns with their values, and is equally valued. They recognized how they could evolve so much within their time in their programs; yet, questioned how institutions could stay the same over decades even though they all had diversity, equity, and inclusion initiatives. They discuss their strength to endure and how it kept them going through the dark times; however, they

questioned if they wanted to endure that type of murder experience again just because they could "survive" it. Therefore, four of the six intellectual contributions presented in this poem have changed their professorial intentions (Burt, 2019; Coley & Thomas, 2023) as impacted by their experiences. They expressed pride in not "succumb[ing] to the darkness," but boy what a loss to the engineering academic community.

Implications of Combined Approaches

Poems and art are living modes of representation that allow the ability for different forms of access, interpretation, and reflection of the data for the researcher, the intellectual contributors, the readers, and the listeners (Owton, 2013). It is designed to enhance criticality and flexibility through authentic engagement with individual and collective reflections and responses to what is presented (Rapport & Sparkes, 2009). It also serves as a means of being more inclusive to those who may not speak, write, see, hear, comprehend, or retain the same way as was believed to be the traditional way of presenting academic research. Using art, storytelling, and poetry allows us to honor voices and traditions that were once excluded as forms of traditional academic scholarship and devalued as being "othered" forms of knowledge. In this research, I hope to spark debate around what is considered "engineering scholarship" and what the inclusion of all modalities of data collection, analysis, and representation can do for the innovative evolution of engineering as a field.

Conclusion

Multi-modal representations of spirit-murdering presented in this article allowed us to explore Black womxn's reflections on their engineering doctoral programs in ways

that were critical, yet liberatory (Collins, 2009). Arts based research methods (ABR) have been used in other STEM fields, primarily science, as a way to connect deeper with the needs and interests of students (Allina, 2018; Emdin et al., 2016). In engineering, arts-based methods have primarily been used to inform STEM K-12 educational policies and practices (Aguilera & Ortiz-Revilla, 2021; Bequette & Bequette, 2012; Clapp & Jimenez, 2016; Graham, 2020; Guyotte et al., 2014). The use of ABR has proven to be influential in the development of students at the K-12 level learning science concepts and being connected to their educational experience (Kijima et al., 2021; Quigley et al., 2017). It has even been included in engineering ethics research (Hitt & Lennerfors, 2022). However, ABR has not been used as a lens for conducting and presenting research at the doctoral level in engineering. Creating and interpreting art and art narratives as meaning-making tools provided me with different vantages for assessing the knowledge in the data. Through these multi-modal representations of spirit-murdering, this study shows that Black womxn: 1) share common epistemologies with differing positionalities that are subject to the same spirit-murdering, 2) experience targeted acts of spirit-murdering that result in longitudinal impacts on professional endeavors, personal health, and intellectual efficacy, and 3) often operate within the dialectical relationship between oppression and activism within their programs. As ABR promotes reflexivity, time investment, innovative thinking, and meaningful interpretation, it can be used to explore critical occurrences in engineering while creating liberation through expression for marginalized groups.

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CHAPTER 4

JOURNAL PAPER #3 - SHIFTING FROM MURDERED TO RENEWED: A MUSICAL INTERPRETATION OF THE SPIRIT-RENEWAL SENTIMENTS OF BLACK WOMXN ENGINEERING PHDS

Abstract

This study seeks to interpret Black womxn engineering doctoral students' sentiments on the transition from spirit-murder to spirit-renewal using arts-based research methods and Hip-Hop. Using Black feminist thought to center Black womxn's epistemologies, this research aimed to represent the collective data of their painful experiences into joyful expressions, which is representative of most Black womxn's relationship with Hip-Hop. Data collection used for the findings in this paper include homegirl conversations, art creations, and art narratives. These conversations were analyzed to find commonalities and salient themes across my Homegirls (Clarke & Braun, 2017). The salient themes were then compiled to develop the six raps that make up the mini mixtape presented in the results section. Rooted in BFT's ethic of caring, the hip-hop mixtape's progression describes homegirl's spirit-renewal tactics as: 1) owning their professional identity, 2) dispelling projected biases, stereotypes, and aggressions, 3) calling out inequities in their interpersonal relationships and program culture, 4) learning to set boundaries to protect themselves, and 5) standing on their ways of knowing and being.

Introduction

"Every day the sun won't shine, but that's why I love tomorrows" – GloRilla

These are lyrics from my favorite rapper, Gloria Hallelujah Woods, known professionally as GloRilla. She is my favorite rapper for several reasons. The first reason is because she creates relatable hits that showcase the dialectical relationship between oppression and activism, which is a tenet of Black Feminist Thought (Hill Collins, 2009a), or BFT for short. She does this by talking about her pain points, past trauma, and healing processes all over the sound of spirit-moving beats. She artistically expressed many issues she had experienced as a young Black woman and did it in a way that represented femininity, yet strength and independence. This is why her song, "F.N.F. (Let's Go)" was a viral hit that sparked her incredible rise as a performer. The second reason is because she is authentic in her representation of self, leveraging her deep-toned voice, southern slang (Rickford, 1999), love for her petite (but thick) body, and controversial ass rhymes to challenge how society views Black womanhood in successful careers (Love, 2012). The last reason I'll note here for my love of GloRilla (because I could go on forever), is that her personal journey to lyrical success is a representation of her ability to use music to transition from spirit-murdering (Williams, 1987) experiences with others to spirit-renewal within herself (Hines & Wilmot, 2018; Young & Hines, 2018), which she so graciously shares with us.

Much like the Black women in this critical ethnographic research study, GloRilla is a part of the collective of Black womanhood that we, as Black women, experience because of our social location in the United States. These women spoke about their experiences in ways that ebbed and flowed gracefully, yet passionately between the sites

of spirit-murdering and the trail of spirit-renewal. Therefore, I desired to find a way to share their collective voices and sentiments of their transition process through a mini-mixtape that can be used to show solidarity amongst this social group and others who may resonate with their experiences. Using the six Homegirls (aka participants) involved in my dissertation study, I used BFT and a Hip-Hop pedagogy (Buffington & Day, 2018; Emdin et al., 2016; Love, 2017b) as an interpretive framework to collect, analyze, and present the data that I engaged with for my PhD culminating work. This particular study is a subset of that study where I chose to study the spirit-renewal process of Black womxn engineering doctoral students. Therefore, the research for this study is as follows:

How can an arts-based methodological design interpret the sentiments of spirit-murder and spirit-renewal for Black womxn engineering doctoral students?

Depicted in a mini mixtape, I interpreted the findings of spirit-renewal tactics into six hip hop raps using the art piece of the Homegirls as the song cover art. My Homegirls were six Black womxn engineering doctoral students (or PhD holders) who engaged in this research process with me. I analyzed themes (Clarke & Braun, 2017) from the twenty-four research artifacts I collected, which included: 6 initial homegirl conversations, 6 art creations, 6 art narratives, and 6 spirit-murdering and renewal homegirl conversations. The goal of this work was to 1) create a mini mixtape that can be used by Black womxn and other social groups as love letters and a living form of solidarity; 2) provide an example of how critical topics can be explored in liberatory ways without re-murdering the spirit of the "participants"; and 3) move conversations

into a space that explores using culturally sustaining pedagogy and practices in engineering scholarship, especially for the students.

I find it important to note here that, because I am centering the ways of knowing of Black womxn, the language choices for this study include African American Vernacular English (AAVE) (Rickford, 1999) and come from a stance of empowerment for the Black community. Therefore, I highlight a few alternative words that have been used in place of more traditional, Western researcher terms. First, I start with the term "womxn". I am operationalizing the term "womxn" only to decenter men and sexism and to center and empower womxn. I do not use this as an alternative to be inclusive to trans women and femme-presenting nonbinary persons because they are included in the term women and do not need a separate classification. Secondly, I discuss the term intellectual contributor. For too long, the intellectual contributions of Black womxn in the academy, and outside the academy, have been ignored, unfavored, undervalued, discredited, and rejected. Not today. These Black womxn are not just participating in these studies but providing intellectual contributions that they are not getting recognition or accolades for. Meanwhile, their stories and lived experiences have been used to advance the field and academic scholarship. In alignment with the need for Black womxn to define their own identities, I consider participants to be intellectual contributors that I refer to as my Homegirls who are investing in the advancement of this scholarship. (For protection purposes, I cannot list all their names as authors, although I think it would be more than fair for their contributions to my scholarship). Thirdly, I move to the term homegirl. Homegirl is a slang term in AAVE that refers to a female acquaintance from your own town, neighborhood, or social background. These womxn are not just contributors to my

study, but my Homegirls in a sense that we share common identity markers, and we will "go to bat for" (fight for each other) in the same way that we would our family and best friends. Therefore, I refer to our semi-structured interview as a homegirl conversation. Lastly, I want to address the supporters of this work. I, Fantasi Nicole, do not consider this work to be that of my own. I am the idea generator that is being used as a vessel to highlight the knowing and experiences of my peers, my Homegirls. For protection purposes, I cannot list all their names as authors, although I think it would be more than fair for their contributions to my scholarship. Additionally, without the support of my advisor as she helps me to revive my murdered spirit through empowerment and activism, I could not have had the energy or the support to do this work. So, I show solidarity with, and connection to, my Homegirls and my advisor who have made this research possible for me. This is our work, not just mine.

Framing this Study

Spirit-murdering is a concept that was coined by scholar Patricia Williams (Williams, 1987) and implemented in anti-racist K-12 education by scholar Bettina Love (Love, 2014, 2017a, 2019) as a lens of critiquing systemic racism while humanizing those it effects. Spirit-murdering is a two-folded process (Nicole, 2022) that emotionally, spiritually, and intellectually harms the wholeness of a scholar, which then complicates their relationship with belonging (Bucher, 2017; Fisher et al., 2019; D. R. Johnson, 2012) and knowledge production (Hill Collins, 2009b, 2013; I. R. Johnson et al., 2019; Love, 2019) in engineering. Although engineering is the field where we reside, it should be a space of intellectual freedom and curiosity, not a site for harm and murder. Therefore, we

need to embrace theories that allow us to be critical of the inequities that exist in our fields while allowing us to have an ethics of care with the people who we engage with, in research or in community. That is where Black Feminist Thought (Hill Collins, 2009b) can be used as a framework that 1) centers the perspective of the persons engaging in the research as experts; 2) brings the perspective of the outsider-within to notice things that go unseen by dominant social groups; 3) serves as a liberatory framework that embraces Black womxn culture and intellectual contributions as valid ways of knowing; and 4) considers an ethic of caring to be at the root of all of its framing. The use of this theory provided me with the framing to design this research in a way that was liberatory for my six Homegirls and me. Using arts-based research methods, I was able to aid in the spirit-renewal process by not interpreting and presenting their spirit-murdering experiences in ways that would be retraumatizing within a repeatable cycle.

Arts-Based Research Methods

Arts-based research methods (ABR) are means of transformational qualitative research practices that contain emotionally evocative expressions, multiple perspectives, and phenomenon descriptions (Barone & Eisner, 2012). ABR creates space for authenticity by allowing the users multiple ways to reflect on and express their knowledge of the phenomenon being studied. It increases human understanding and empathy by creating methods that are liberating to the voice, especially for those who were frequently silenced or never felt they knew the right thing to say in academic lingo.

This study seeks to interpret Black womxn engineering doctoral students' sentiments on the transition from spirit-murder to spirit-renewal. By centering their ways

of knowing, I present the findings in a mini mixtape format as a creative way to represent the collective data of their painful experiences into joyful expressions, which is representative of most Black womxn's relationship with Hip Hop (Love, 2012). Data collection used for the findings in this paper include homegirl conversations, art creations, and art narratives. These conversations were analyzed to find commonalities and salient themes across my Homegirls (Clarke & Braun, 2017). The salient themes and commonalities were then compiled to develop the six raps that make up the mini mixtape presented in the results section.

My data collection methods for this study included the transcripts of the homegirl conversations and the art narratives, as well as the art itself. The initial consultation served to identify if potential Homegirls met the criteria for the study which was 1) identify as a Black womxn; 2) be an engineering PhD student/graduate; and 3) have experience with spirit-murdering. During this conversation, we, my Homegirls and I, conversed about current positions, career intentions prior to starting PhD, the operationalization of the term "spirit-murdering", and experiences with spirit-murdering. After the initial conversation, Homegirls who shared a common understanding were contacted to move forward in the research process, which involved them 1) creating a 2D art piece to represent how they conceptualize spirit-murdering from their own experiences, 2) creating a video narrative to explain the elements of their art creation, and 3) having a post homegirl conversation around understandings of experience and impact of spirit-murdering. During the post homegirl conversations, Homegirls shared more in-depth reflections of their experiences with spirit-murdering and the impact that it has had on them.

The Homegirls who intellectually contributed to this study: 1) identified as Black womxn; 2) were enrolled in a doctoral program, or have obtained a PhD; 3) and are in an engineering discipline. During the initial homegirl conversations, I discussed the operationalization of the constructs "spirit-murdering," and they provided an example if they experienced the construct to be confirmed as Homegirls in the study. I did not have any restrictions on time limits, institution type, or contribution level because there are not that many Black womxn with PhDs, or pursuing PhDs, in engineering and I wanted to protect my Homegirls by not having too specific accounts of experiences that can be easily identified and used against them. All Homegirls attended an engineering PhD program at a Historically White Institution (HWI). Homegirls were recruited through purposeful and snowball sampling (Creswell & Poth, 2018; Gobo, 2004) using peers and social groups that identify as Black and/or womxn in engineering or doctoral programs. I want to thank them for sharing their narratives and contributing to this scholarship. They are valued here, and I hope that the representation of their knowledge in this mixtape serves as a form of spirit-healing for them.

Table 1. Demographic Information of Black Womxn Homegirls.

Black Womxn Intellectual Contributors / Homegirls					
Pseudonym	***Doctoral Status***	***University Type***	***Bachelors***	***Masters***	***Pre-PhD Professional Experience?***
Nostalgia	PhinisheD	HWI	Industrial	Yes	Full-Time
Hippolyta	PhinisheD		Physics	Yes	Internships
Harper	PhinisheD		Industrial	Yes	Internships
Kagome	4th Year		Electrical	Yes	Internships
Ashley	4th Year		Mechanical	Yes	Full-Time
Kadijah	PhinisheD		Industrial	Yes	Internships

The data analysis method followed through several phases. During the first phase, I read through all of the transcripts to identify any salient things that stood out to me using *in vivo* coding (Saldaña, 2016). Next, I created a codebook using the inductive codes that I found through the initial pass. After establishing a codebook, I went back through the data with a second pass thematic analysis (Clarke & Braun, 2017) resulting in six themes. Each theme had its own set of codes, with three recurring codes for all six themes: spirit-murdering (the action), spirit-murdering (the impact), and spirit-renewal (the tactic). These three codes were included across all six themes because it categorized the different elements of spirit-murdering and renewal that is associated with each of the themes. For example, theme 1 is "Grown Ass Woman Securing the Bag" which is about professional and intellectual identity. For this theme, there were five codes: professional experience, intellectual attributes, spirit-murdering (the action), spirit-murdering (the impact), and spirit-renewal (the tactic). For the last three codes, the spirit-murdering and spirit-renewal excerpts included in this theme were related to professional and intellectual identity. An example of the process from coding to theme for Theme 1 is presented in Table 2 below.

Table 2. Analysis Process for Theme "Grown Ass Womxn Securing the Bag.

Analysis Process for Theme "Grown Ass Woman Securing the Bag"		
Codes	***Description***	***Example***
Professional Experience	Describing previous or current professional experience, etc.	I was definitely the **top recruit out of that class** that applied that year - Hippolyta
Intellectual Attributes	Describing contributions to lab, work, research, etc.	I've been **working on a grant** for, I don't know, almost three years now or about three years now. I've **gotten multiple publications** out of it. I've **done what I needed to do**. I've **mentored projects** out of it. - Kagome
Spirit-Murdering (The Action)	Describing the action that caused the spirit-murder	I **passed everything with strong pass** [on my qualifying exam] **except for the question which was based on a paper that was a trigger that y'all knew was a problem** [from the previous cohort] and **y'all picked the worst possible paper** for the people that you were giving this exam to. - Hippolyta
Spirit-Murdering (The Impact)	Describing the impact caused by the action of the spirit-murder	I hear those things and those messages don't run away. They don't evaporate because of time. They still very much impact me. I still have days where I'm like, "I can't do this. I can't write." - Hippolyta
Spirit-Renewal (The Tactic)	Describing affirmation, clarity, positive reflection around the spirit-murdering incident	When you look at the references for any engineering education work, they are coming from lots of different disciplines, lots of different perspectives. We publish people in engineering education journals that have nothing to do with engineering nor education. So you have to be more expansive in how you're problematizing the space and what epistemology counts in that space. - Hippolyta

Once I established the major themes, I expanded the themes into rap songs using titles that reflect Black womxn colloquialisms that sum up the essence of the song. For

example, Theme 1, which is “Grown Ass Womxn Securing the Bag”, represents professional and intellectual identity. I used this code for when my Homegirls expressed the many positive things that reminded them that they were professional, capable, intellectual womxn, before and during their PhD process. One of the womxn said that she has been a grown ass womxn prior to starting her PhD experience. That sentiment coincides with colloquialisms like “Put Some Respect On My Name” which means that people need to acknowledge and value who I am and what I bring to the table. That sentiment also coincides with the phrase “I’m HER”, which is an assertion of self-worth and self-value. Hence, this is how the Theme, “Grown Ass Womxn Securing the Bag”, became the Rap, “Put Some Respect On My Name, I’m HER”. As for the music that I used, I found free beats that could be used for non-profit purposes, and I chose beats that were uplifting and robust, yet feminine and powerful. I took extra care to make sure that I leveraged some of their individual words, experiences, and sentiments without being too specific, as to protect the identity of my Homegirls.

Mini Mixtape

The mini mixtape is a compilation of six raps that represented the six themes developed. Since there are six themes and six Homegirls, each song’s title cover art is a homegirl’s art creation that best represented the theme. After the art is presented, I list a set of details that explain the rap. First, I list the naming convention, or title, for the rap, which is titled using a common Black womxn colloquialism (Emdin et al., 2016; Hill Collins, 1990), an informal, familiar phrase that has meaning amongst common groups. Next, I list the sentiment, which is two-fold because it: 1) expresses the theme; and 2)

gives a recommendation for spirit-renewal tactics. Following the sentiment, I list the musical beat that was used for the rap and give credit to the beat maker. I chose beat types based on rappers that express Black feminist ideals, like GloRilla and Megan Thee Stallion. After I name the beat, I present the rap. Following the raps, I briefly discuss some points to consider about Black womxn and engineering doctoral programs based on their sentiments from the rap. See the details of the raps in Table 3 below.

Table 3. Spirit-Renewal Mixtape.

Spirit-Renewal Mixtape			
Mix #	***Theme***	***Art Piece***	***Beat***
"Put Some Respect On My Name, I'm HER"	Been A Grown Ass Woman Securing the Bag	"Cut Across, Into the Womanism and Positive That Wraps Her" - Hippolyta	City Girls x Saucy Santana Type Beat "Distress" - (Breeze, 2022)
"I Ain't JUST A Black Woman"	Don't Project Your Unspoken Biases as My Spoken Truth	"White Woman Tears and Resulting Fears" - Harper	GloRilla x Cardi B Type Beat "Make It" – (4Naygo, 2023)
"The Caucasity! Bitch, Please"	Be Critical of Yourself and Your Actions	"Them Vs Us" - Kagome	Megan Thee Stallion Type Beat x City Girl Type Beat "Show It" – (Baby Breeze, 2021)
"Whew Chile…The Ghetto"	Check Your Cultural Norms At The Door, Not Mines	"Better" - Kadijah	GloRilla Type Beat – Energy - (Selimm, 2022)
"Mmm Mmm Get Somebody Else To Do It"	Recognize My Resilience, But Understand Why I Need to Be Resilient	"Release and Let Go" - Ashley	City Girls Type Beat "Ready" - (Baby Breeze, 2023)
"I Said What I Said. Period."	Standing On My Epistemology, Leaning On My Cultural Strength	"This Time Correctly, And For The Right Reason" – Nostalgia	DaBaby x Megan Thee Stallion Type Beat – Trenches - (firbykirby, 2022)

It is important to note here that I am using these raps as living, breathing forms of research that can be engaged with in multiple ways for meaning making processes. The song recordings can be found for listening at the following Google Drive link: https://bit.ly/spiritrenewalmixtape. Now, listen with an open mind, a genuine heart, and a desire to act.

Mix 1

Illustration 1. **"Cut Across, Into the Womanism and Positive That Wraps Her"**. Hippolyta, 2022. Multi-dimensional Painting.

Title: "Put Some Respect On My Name, I'm HER"

Sentiment: Been A Grown Ass Woman Securing the Bag (Professional)

Beat: https://www.youtube.com/watch?v=89J-DQdXS4Q

[Opening]

Trust and believe me when I say "I'm HER".

All of my accolades both, personal and professional, concur.

All I ask is that y'all put some respect on my name

And stand for that equity and inclusion that y'all claim.

[Chorus]

Put some respect on my name, I'm HER.

"Top recruit of my class", Numba 1, I'm HER

Been a "grown ass woman" getting a bag, I'm HER

You try to play me like a simp, and that's sad, I'm HER

Remember who do your publications,

and run all your meetings

Up late conducting your research

while you at home and you sleeping

And you won't let me advance

Because you know that I'm seasoned

But I'm gone tell you one thing now,

I'm Numba 1 for a reason.

[Versus 1]

I'm an expert in many ways,

Got knowledge for days.

My dual epistemologies

read through all of your plays.

I can't deny what I feel,

You can't deny what is real.

Had "engineering experience"

Before this entire ordeal.

I do your research and mines,

Professionalism combined

Connections out the wazoo

And my wisdom ages like wines

But you can't get through your head

The value that comes from my lead

The way I handle my business

So you gaslight me instead.

[Hook 1]

"Worked on your grants for some years"

"Mentored" most of my peers

Advanced your tenure and careers

And interest in my progress disappears

[Hook 2]

"Understand where [I'm] coming from."

And know that my victory's already won.

And if you mad that your darkness didn't succumb

Just know that my reign of terrors just begun."

[Chorus]

Put some respect on my name, I'm HER.

"Top recruit of my class", Numba 1, I'm HER

Been a "grown ass woman" getting a bag, I'm HER

You try to play me like a simp, and that's sad, I'm HER

Remember who do your publications,

and run all your meetings

Up late conducting your research

while you at home and you sleeping

And you won't let me advance

Because you know that I'm seasoned

But I'm gone tell you one thing now,

I'm Numba 1 for a reason.

[Verse 2]

Please see through the haze,

The system acts as a maze,

For Black women to navigate,

It causes such the malaise.

But you can be better now

It thrives on what you allow.

So see your students as partners

And don't act holier than thou.

Adopt a business-like mind,

Apprenticeship not assigned

Respect your folks as professionals

And as they have defined.

Be upfront and direct,

Treat them with utmost respect,

And see how much your lab evolves

When you reflect and correct

[Hook 3]

Honor what we know and what we feel

Always reflect and keep it real

Hold up your end of the deal

And allow your folks time to heal

[Hook 4]

Take time out to affirm.

Appreciate the growth that I've had through the term.

Have my back and stand 10 toes firm.

And watch how much the results will confirm.

[Chorus]

Put some respect on my name, I'm HER.

"Top recruit of my class", Numba 1, I'm HER

Been a "grown ass woman" getting a bag, I'm HER

You try to play me like a simp, and that's sad, I'm HER

Remember who do your publications,

and run all your meetings

Up late conducting your research

while you at home and you sleeping

And you won't let me advance

Because you know that I'm seasoned

But I'm gone tell you one thing now,

I'm Numba 1 for a reason.

Mix 2

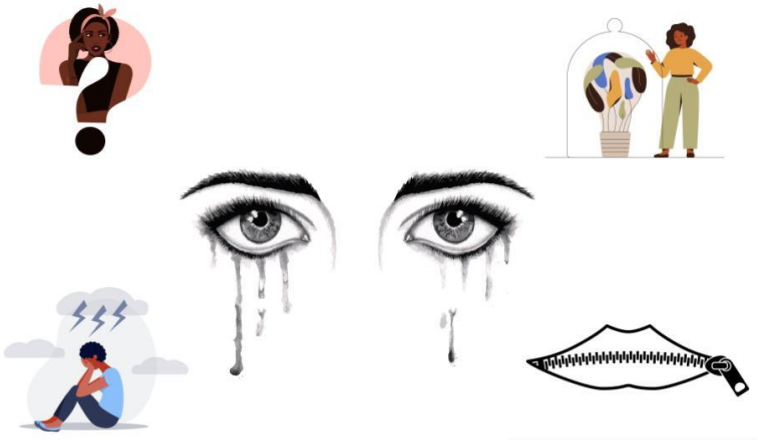

Illustration 2. **"White Woman Tears and Resulting Fears"**. Harper, 2022. Collage.

Title: "I Ain't JUST a Black Woman"

Sentiment: Don't Project Your Unspoken Biases as My Spoken Truth

Floetry Beat: https://www.youtube.com/watch?v=74sjDfnV7pM

[Opening]

I ain't JUST a Black woman

It's so much more to me than what you see.

[Verse 1]

A prized possession

Something they can hold at the door.

The diversity martyr

They can put out for show!

The angry Black woman

That they can't take no mo'.

That real ghetto chick

That they surveillance for sho'.

I'm getting sick and tired of the bias

The disciplinary ways yall conspire

With y'all it's like I'm constantly putting out fires

And y'all keep wearing masks like Michael Myers

[Chorus]

I ain't JUST a Black woman, ya dig!

Stop playing with me and play with ya own damn kids.

I'm so sick and tired of y'all stepping outta line

Then wanna cry white women tears when I stand for me and mine.

I ain't JUST a Black woman, ya dig!

Stop playing with me and play with ya own damn kids.

I'm so sick and tired of y'all stepping outta line

Then wanna cry white women tears when I stand for me and mine.

[Verse 2]

And when I try to speak,

it's like the circus in town

Y'all make me jump through hoops

And spin this merry go-round

To share my freaking truth,

And then it really goes down.

Cuz all you seem to do

Is try to ground it in brown.

I wear my crown proudly

But I ain't just my skin.

My SES status

Is not just where I've been

My sexuality and gender

Should not count as a win

And don't play me no tune

On that got damn violin.

[Chorus]

I ain't JUST a Black woman, ya dig!

Stop playing with me and play with ya own damn kids.

I'm so sick and tired of y'all stepping outta line

Then wanna cry white women tears when I stand for me and mine.

I ain't JUST a Black woman, ya dig!

Stop playing with me and play with ya own damn kids.

I'm so sick and tired of y'all stepping outta line

Then wanna cry white women tears when I stand for me and mine.

[Closing]

Yeah, and my positionality is not up for conversation for real. It is what it is. But if you want to have that conversation, that's a different invoice, and that's not necessarily what I'm being paid to do

Mix 3

Illustration 3. **"Them Vs Us"**. Kagome, 2022. Painting.

Title: "The Caucasity! Bitch, Please!"

Sentiment: Be Critical of Yourself and Your Actions

Beat: https://www.youtube.com/watch?v=l7QzAcO83us

[Opening]

The Caucasity

[Chorus]

The Caucasity! Bitch, Please

You walking round like what I say is make believe

You know whiteness exists in here like a disease

And multiplies my murder to the first degree

Do yourself a favor and be critical

We all know PhDs are straight political

Check your actions. Just be analytical

And don't expose yourself as hypocritical

[Verse 1]

I failed my quals based on a trigger

Instead of checking yourself you gave me the middle finger

And tried to uphold a flawed system based on "rigor"

And tried to play me like an unlearned nigga

It's showing lack of competence in this space

Where even if I'm not the problem, you make it the case.

You really sit here and insult me in my face,

When really it's your practices that need to be replaced.

[Hook]

"Remedial writing" is what you said

That feedback just keeps replaying inside my head

A part of my spirit lying cold and dead

Because you came for me and not the flaw instead.

So give me solid feedback when the time is due.

Don't have your feelings hurt. This is just a cue

To do what I know you scholars can do

And put all program practices under review.

[Chorus]

The Caucasity! Bitch, Please

You walking round like what I say is make believe

You know whiteness exists in here like a disease

And multiplies my murder to the first degree

Do yourself a favor and be critical

We all know phds are straight political

Check your actions. Just be analytical

And don't expose yourself as hypocritical

[Verse 2]

I know you care and that's not to debate

Some times when I was heavy, you lifted the weight

But part of that heaviness is my progress rate

So I need to make sure my intellect is straight

This means support my intellectual growth

Act like you K-12 and took the teacher's oath

Critique and support me, yeah I need both

While I endure the harshness of this doctoral troth

[Hook]

"Remedial writing" is what you said

That feedback just keeps replaying inside my head

A part of my spirit lying cold and dead

Because you came for me and not the flaw instead.

So give me solid feedback when the time is due.

Don't have your feelings hurt. This is just a cue

To do what I know you scholars can do

And put all program practices under review.

[Chorus]

The Caucasity! Bitch, Please

You walking round like what I say is make believe

You know whiteness exists in here like a disease

And multiplies my murder to the first degree

Do yourself a favor and be critical

We all know phds are straight political

Check your actions. Just be analytical

And don't expose yourself as hypocritical

Mix 4

Illustration 4. **"Better"**. Khadijah, 2022. Painting.

Title: “Whew Chile…The Ghetto”

Sentiment: Check Your Cultural Norms At The Door, Not Mines

Beat: https://www.youtube.com/watch?v=DrpRFCSpnT8

[Opening]

Whew Chile… The Ghetto

[Chorus]

Whew Chile… The Ghetto

The lip service in here?… Falsetto

Expectations for change?…. It’s Narrow

I just wanna be done… Faneto

Whew Chile… The Ghetto

The lip service in here?… Falsetto

Expectations for change?…. It’s Narrow

I just wanna be done… Faneto

[Verse 1]

This is really where the ghetto resides

It devalues other cultures…like mines

Ran on outdated practices…Designs

To weed out qualified candidates…declines

Grad student strike and protest, for pay

Got smart folks who can go to industry, today

And your program practices turn them away

I swear it's really time out for the fake display

[Hook]

Ace'ing classes but failing subjective exam

Being treated like I ain't the scholar, I am

Faking diversity and equity for, the Gram

Triggers left and right and it's just like "well damn"

[Chorus]

Whew Chile… The Ghetto

The lip service in here?… Falsetto

Expectations for change?.... It's Narrow

I just wanna be done… Faneto

Whew Chile… The Ghetto

The lip service in here?… Falsetto

Expectations for change?.... It's Narrow

I just wanna be done… Faneto

Whew Chile… The Ghetto

The lip service in here?… Falsetto

Expectations for change?.... It's Narrow

I just wanna be done… Faneto

[Hook]

Don't let the system fool ya

It'll spit you out if it choose ta

So if this song really moves ya

Go ahead and do what you 'pose ta

[Verse 2]

Don't give me no excuses, you know that it's true

You know because alot of this shit happened to you

So don't just let "I did it" be your way too

And advocate for something equitable and new.

Different times, different lines, and different views

You have so much autonomy on what you choose

So choose to let go of all of the abuse

And identify targeted policies that you can refuse.

It's always ways to get around "the rules"

Use that privilege and all of your tools

Make the naysayers look like fools

And let's establish a new meaning for schools

Mix 5

Illustration 5. **"Release and Let Go"**. Ashley, 2022. Mind-Map Drawing.

Title: “Mmm Mmm Get Somebody Else To Do It”

Sentiment: Recognize My Resilience, But Understand Why I Need to Be Resilient

Beat: https://www.youtube.com/watch?v=z4VMdrDSK6M

[Opening]

I really had my come to jesus moment

And I just realized that I need to release and let go

I ain’t gone keep playing these toxic games

I just gotta really protect my peace

[Chorus]

Mmm Mmm get somebody else to do it

I’m tired of sitting round here feeling so stupid

And that goes for you and everybody else included

You can go and get somebody else to do it

Mmm Mmm get somebody else to do it

I’m tired of sitting round here feeling so stupid

And that goes for you and everybody else included

You can go and get somebody else to do it

[Verse 1]

Setting boundaries to protect my peace

Hermit mode, so all of that damn extra shit can cease

And it’s crazy cuz people wondering what’s got into me

I’m just focused on healing my spirit to release

I'm gone maximize my time and my energy

Investing in myself in ways that you never see

Until we all on one page and be in synergy

But until then you can reference me in memory

[Hook]

Not pulling no got damn all-nighters

I'm not scheduling to meet with no new hires

If it ain't really paying or putting out old fires

Then I'm gone do what my spirit requires

[Chorus]

Mmm Mmm get somebody else to do it

I'm tired of sitting round here feeling so stupid

And that goes for you and everybody else included

You can go and get somebody else to do it

Mmm Mmm get somebody else to do it

I'm tired of sitting round here feeling so stupid

And that goes for you and everybody else included

You can go and get somebody else to do it

[Verse 2]

I'm focused on what's gone keep me sane

And what's gone bring that new addition to my last name

It's crazy cuz I really thought we had the same aim

But that's just how we're recruited, it's a shame

I can struggle, but I shouldn't have to suffer.

I know it's my experience is rougher

They say what doesn't kill you, only makes you tougher

But y'all need some damn practices in place to be a buffer.

[Hook]

Not pulling no got damn all-nighters

I'm not scheduling to meet with no new hires

If it ain't really paying or putting out old fires

Then I'm gone do what my spirit requires

[Chorus]

Mmm Mmm get somebody else to do it

I'm tired of sitting round here feeling so stupid

And that goes for you and everybody else included

You can go and get somebody else to do it

Mmm Mmm get somebody else to do it

I'm tired of sitting round here feeling so stupid

And that goes for you and everybody else included

You can go and get somebody else to do it

Mix 6

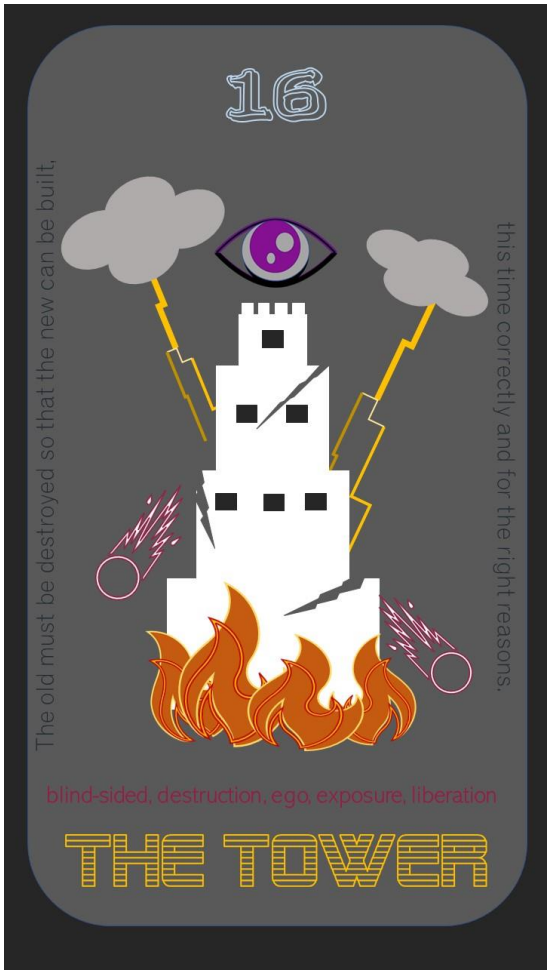

Illustration 6. **"This Time Correctly, And For The Right Reason"**. Nostalgia, 2022. PowerPoint Art.

Title: "I Said What I Said, Period."

Sentiment: Standing On My Epistemology, Leaning On My Cultural Strength

Beat: https://www.youtube.com/watch?v=HJXfZwNcBhc

[Opening]

I'm done playing myself like I'm the problem.

I'm going to really own myself as the Goddess I am.

And that's really that on that.

[Chorus]

I said what I said. Period.

House of mirrors and delusion. Delirious

I ain't gotta prove myself, Superior

I lean on my epistemology. Imperial

[Verse 1]

I'm problematizing this engineering space

Using methods that are set to my own damn pace

For the scholarship, yes I'll leave just a trace

But I'm rooting results in something I embrace

[Chorus]

I said what I said. Period.

House of mirrors and delusion. Delirious

I ain't gotta prove myself, Superior

I lean on my epistemology. Imperial

[Verse 2]

It ain't just what you know and that's a fact

The stuff I'm saying is really not that abstract

And I'm really sorry if you feel so attacked

But if that's the case, then it's your time to act.

[Chorus]

I said what I said. Period.

House of mirrors and delusion. Delirious

I ain't gotta prove myself, Superior

I lean on my epistemology. Imperial

[Verse 3]

You ain't gone wear me out no more

I'm done being your diversity whore

Cuz you do nothing, games you implore

Institutions don't want to change at the core.

[Chorus]

I said what I said. Period.

House of mirrors and delusion. Delirious

I ain't gotta prove myself, Superior

I lean on my epistemology. Imperial

[Verse 4]

Respect my experience and my time.

Quit covering my identity in your grime.

The person who I am is so sublime

And the one I'm becoming is on a climb.

[Chorus]

I said what I said. Period.

House of mirrors and delusion. Delirious

I ain't gotta prove myself, Superior

I lean on my epistemology. Imperial

[Verse 5]

I'm really a Queen in the grand scheme of things

Acting like a puppet letting you pull the strings

But this is the moment, where I spread my wings

And see what type of innovation that my hope brings

Discussion

I hope you enjoyed listening to the six raps of the mini mixtape created from the data of the six Homegirls from this study. The first rap touched on the acknowledgement of professional and intellectual contributions that the Black womxn produced in their engineering doctoral programs, as well as the need for others to acknowledge their contributions as well. The second rap touched on the perceptions and biases that were placed on my Homegirls while in their engineering programs, with the most salient one being the phenomenon of white women tears (Hamad, 2020). The third rap spoke to the need for advisors and faculty to be critical of themselves and how their actions impact the students they are supposed to be advising and supporting (Young & Hines, 2018). The fourth rap is a call to acknowledge that the makeup of the engineering doctoral program itself is the problem, not the Homegirls or any other students (Holly, 2020; Holly & Masta, 2021). The fifth rap is a call to respect the boundaries and humanness of these Homegirls (Gonzalez, 2022). The sixth rap is an acknowledgment of power and strength embodied to own who they are and stand on what they know and how they feel (Hill Collins, 1990). This study served to be an example of how we could used the spirit-renewal tactics of Black womxn through arts-based research methods and a Black

feminist lens. Using ABR and BFT allowed me to conduct critical research and use liberatory practices to engage with said research. Engineering doctoral programs should consider leveraging the use of ABR and BFT for two reasons: 1) they allow people to conduct and engage with research in critical yet liberatory ways; and 2) it produces findings that can be used to tackle issues of systemic inequities in engineering doctoral programs.

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CHAPTER 5

CONCLUSION

Findings and Significance

The purpose of this overall dissertation study was to explore the epistemically aligned interpretive methods used to illustrate the engineering PhD spirit-murdering experiences of Black womxn. The overarching research question was:

What are the engineering PhD spirit-murdering experiences of Black womxn?

In order to address the question through a lens of Black feminist epistemology and Arts-based research methods, I used three different interpretive analysis styles that all resonate with ways that Black womxn intellectuals have used to express themselves: a composite narrative presented as a blog, a poem created solely of direct quotes from the research transcripts, and a mini mixtape used to culminate their spirit-renewal experiences.

For paper one, I aimed to answer how spirit-murdering experiences manifested in the structural, disciplinary, hegemonic, and interpersonal domains of power within engineering doctoral programs for Black womxn. Using a composite narrative blog, I identified the following: 1) spirit-murdering is a targeted act that is dehumanizing, 2) spirit-murdering occurs because of the aloof nature and capitalist ideals of the engineering academy, and 3) spirit-murdering causes further conflict in negotiating identities as Black, woman, professional, researcher, and student.

In order to create the composite narrative blog, I followed through several phases. During the first phase, I read through all of the transcripts to identify any salient things that stood out to me using in vivo coding (Saldaña, 2016). Next, I created a codebook using the inductive codes that I found through the initial pass as well as some deductive codes that I found through a review of the literature on BFT's matrix of domination. After establishing a codebook, I went back through the data with a second pass thematic analysis (Clarke & Braun, 2017). Once I established some major themes, I organized the themes into BFT's matrix of domination framework and identified which themes fit into which of the four domains of power. After that, I put the experiences associated with the themes in a word document under their respective domain, and created the composite blog using their narratives by organizing them in a way that flowed together.

I centered the composite narrative blog around a composite Black engineer named Marvilous Marie who is blogging about her PhD experience to her audience, The Marvilous Mob. Marvilous represents the six marvelous Homegirls who trusted their stories to be shared for the advancement of justice in Black womxn, engineering, and doctoral education scholarship. The creation of a composite narrative blog allowed me the ability to: 1) use narrative style writing with AAVE and slang allows research to be represented in a way that showcases the complexities of individual experiences while drawing out commonalities across those experiences, 2) offer a significant degree of anonymity to my Homegirls (Gonzalez, 2022), and 3) make this work accessible and increase understanding across particular groups and non-academic audiences (Hill Collins, 1990, 1990).

For paper two, I aimed to answer how multi-modal representations of Black womxn's reflections of spirit-murdering can shine light on how they describe spirit-murdering and its influence on them. The composite poem illustrated that these Homegirls: 1) have a common, understood epistemology because of their shared experiences of being Black and woman in their current, multi-layered social locations, 2) identify strongly with their positionality and values while describing their outsider-within status, and 3) experience spirit-murdering in an emotional, intellectual, and spiritual way that then results in physical manifestations.

The narrative poem (Prendergast et al., 2009) was created by marrying the art of storytelling (Butler-Kisber, 2018), poetic inquiry (Prendergast et al., 2009), and creative analytical processes (McClaurin, 2001; Owton, 2013) together to create a composite narrative expression that highlighted the collective and individual Black women's ways of accounting the impact of spirit-murdering experiences throughout their engineering doctoral programs. The creation of the poem was based on the data collection of the art narrative transcripts and the "spirit-murdering" homegirl conversation transcripts. While doing a second pass with the transcripts, I used a codebook developed from the first pass and coded based on 1) the conceptualization of spirit-murdering, 2) the spirit-murdering experience, 3) the homegirl's positionality, 4) and the homegirl's perspectives on their experiences. Once I found the transcripts associated with these themes, I determined how I wanted to set up the flow of the poem. I used an interpretive lens to determine the flow of the themes. I wanted to open up with their positionality, feed into their spirit-murdering experiences, followed by their conceptualization of spirit-murdering, and finish with their perspectives on their experiences. I then decided that I wanted to honor

individual experiences but highlight how they also represent the collective of the Homegirls in this study. Therefore, based on the desired flow of the poem, I started piecing together lines of their excerpts as if it was one long narrative expression, which led to the resulting poem above. As I was piecing together the quotes from the individual narratives, I studied the art pieces to see which one best represented the collective view on their experiences, and I decided on "Cut Across, Into the Womanism and Positive That Wraps Her".

For paper three, I aimed to answer how an arts-based methodological design can be used to interpret the sentiments of spirit-renewal for Black womxn engineering doctoral students. Rooted in BFT's ethic of caring, the hip-hop mixtape's progression described my homegirl's spirit-renewal tactics as: 1) owning their professional identity, 2) dispelling projected biases, stereotypes, and aggressions, 3) calling out inequities in their interpersonal relationships, 4) calling out inequities in their program culture and environment, 5) learning to set boundaries to protect themselves, and 6) standing on their ways of knowing and being. For all three studies, I used synthesized member checking (Birt et al., 2016) and peer review to ensure the credibility of the research (Barone & Eisner, 2012; Creswell & Poth, 2018).

The same thematic analysis process for the composite blog and poem were used for the mini mixtape as well. Once I established the major themes, I interpreted theme into rap songs and found beats that I felt reflected the sentiment of the theme. I took extra care to make sure that I leveraged some of their individual words, experiences, and sentiments without being too specific, as to protect the identity of my Homegirls. The mini mixtape is a compilation of six raps, one for each homegirl, that represented the six

themes developed. Each song's title cover art is a homegirl's art creation that best represented the theme. After the art is presented, I list a set of details that explain the rap. First, I list the naming convention, or title, for the rap, which is titled using a common Black womxn colloquialism (Emdin et al., 2016; McClaurin, 2001), which is an informal, familiar phrases that has meaning amongst common groups. Next, I list the sentiment, which is two folded because it: 1) expresses the title of the theme and 2) gives a recommendation for spirit-renewal tactics. Following the sentiment, I list the musical beat that was used for the rap and give credit to the beat maker. I chose beat types based on rappers that express Black feminist ideals, like GloRilla and Megan Thee Stallion. After I name the beat, I present the rap. Following the raps, I briefly discuss some points to consider about Black womxn and engineering doctoral programs based on their sentiments from the rap. It is important to note here that I am using these raps as living breathing forms of research that can be engaged with in multiple ways for meaning making processes.

Each framing of the data represented unique benefits and challenges of its own. The primary benefit is that it allowed me to engage with my Homegirls in ways that felt fluid and natural, yet critical and validating. There was an air of comfortability and familiarity that I had with each homegirl, causing an open level of communication, honesty, and vulnerability. Another benefit was the ability to study a phenomenon that is new to the field but not new to us as outsiders-within (Hill Collins, 1990), and allowed us to transcend the boundaries of traditional verbal expressions when you may not have the language to express how you feel. Another benefit is that it allowed for constant reflection, from the initial homegirl conversation to the creation of the art to the recording

of the art narrative to the spirit-murdering homegirl conversation. Having the space to just engage with the homegirl conversations, the art creations, the art narratives, and even the member-checking process was remarkably effective in enhancing the credibility of the research. One of the challenges that we experienced using the art is that, because it evokes emotional responses, there were a few times of emotional lows from reflecting so deeply on the work. They always resulted in an epiphany that brought about a new, more liberating way of viewing the experience, but it did occur.

As the engineering doctoral community tries to expand in representation, innovation, and scholarship, it is imperative that we address the issues of inequities from a holistic view that is critical and liberatory. To address underrepresentation in engineering doctoral programs, there should be equitable treatment of Black womxn, their intersecting marginalized identities, their epistemological perspectives, and their respective experiences. If Black women and everything they bring with them into these academic environments is treated as being necessary, invaluable, and agentic, academia would grow expeditiously and be able to address current and developing challenges. And, if we can address the issue of inequities for the most marginalized, most underrepresented group in engineering doctoral programs, then we can create movement towards liberation for all.

Moving Forward

There are several immediate actions that can be taken from this work. The first action item would be to do the "spirit-murdering" art activity with you lab, classroom, colleagues, or peers to understand the issues that are prominent within your sphere of

influence. The second action item would be to explore a different type of method that uses culturally sensitive pedagogies and methods. The third action item would be to consider how you engage with the people who intellectually contribute to your study. Starting with these activities will help you become aware of what you can change, prepare for how you can change it, and move on the actions necessary to enact such change. Addressing the issue of underrepresentation starts with you.

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APPENDIX A

INITIAL HOMEGIRL CONVERSATION

Hey girl hey! My name is Fantasi, and I am a fellow PhD student and engineer. I want to begin by thanking you for expressing interest in this research study designed by the SPACE Lab at Arizona State University. The purpose of this study is to 1) expose practices that hinder the scholarly development of Black women engineers in PhD programs, 2) highlight the ways that these women empower themselves to develop their scholarly identity, and 3) emphasize how activism can foster inclusive and diverse ways of knowing that can support Black women in their respective programs. This session today serves as our initial consultation. This is the session where we confirm that you meet all of the criteria to be a intellectual contributor (participant) in this study. If you meet all of the criteria for this study, we will provide you with a consent form to complete. Once the consent form has been completed, we will give you a prompt with next steps. If you do not meet all of the criteria, we will keep you in mind for our future studies on Black women in engineering doctoral programs. Do you have any questions, comments, or concerns for me before we get started? [pause and answer any questions]. Ok great. Before we get started, we request verbal consent to participate in this screening process. If you give me permission, please say "I consent to the screening process". If you do not consent, please say "I do not consent to this screening process." Okay thank you. Let's get started. (Screening over if consent is not given).

Demographic Criteria

Do you identify as a Black woman?

Do you speak fluent English?

Are you currently enrolled in an engineering discipline? [For those who have graduated, do you have an engineering graduate degree?]

Where are currently enrolled in school and what is your major?

What made you chose that major at that university?

Are you currently enrolled in a doctoral program? [For those who have graduated, have you been awarded a doctoral degree?]

What made you decide to pursue a PhD?

If chosen to be in this study, can you provide proof of engineering program and doctoral program status? (i.e. class schedule, course syllabus, transcript, photo image of diploma)

Phenomenon Criteria

For this study, we are interested in people who have had experiences with any/all of the constructs: spirit-murdering, empowerment, and activism. We will provide you with a definition of each construct and provide examples. We will then ask you if you have had experiences with the construct. If so, we will ask you to give a brief summary of that experience before proceeding to the next question. Ok? [waits for response, then proceeds]

Spirit-Murdering

For this study, "spirit-murdering" is defined by Patricia Williams and Bettina Love (Love, 2014b; P. Williams, 1987) *as "the personal, psychological, and spiritual injuries to people of color through the fixed, yet fluid and moldable, structures of racism,*

privilege, and power." In this context, spirit-murdering would be the non-physical injuries to Black women engineering graduate students through experiences that are racist, gendered, or inequitable.

A few examples of spirit-murdering are:

1) *Laws and policies that lead to inequities or disadvantages for people of color*
2) *Silencing people of color and their experiences to decrease discomfort for others*
3) *Questioning people of color and their ability to make valued, intellectual contributions*

Have you had any experiences with spirit-murdering in your graduate program? [If so, can you give me a brief example?]

Research Activity Criteria

If asked to contribute to this study, you will be asked to create a 2D visual art form, brief corresponding video response, and participate in a 90-min interview for the constructs you have experiences with. For example, if you have only had experiences with spirit-murdering and activism, you will create (2) 2D visual art form, (2) brief corresponding video responses, and participate in (2) 90-min interviews. If at any point you decide to discontinue your involvement with this study, we will remove your data at your request and you will not be required to do any more research activities.

If asked to contribute, will you be able to meet the research activity requirements (i.e. 2D art, video, and interview)?

Closing Remarks

Alright! That was my last question. I would like to thank you again for your time. My research team and I will look over your responses and get back to you within two weeks to confirm whether you will be involved in the study, and to what extent. When you hear back from us, you can accept or decline participation in the study. If you accept, we will then provide you with next steps. Any questions for me? [pause and answer any questions]. Alright, thank you again and have a great day.

APPENDIX B

ART AND ART NARRATIVE PROMPT_SPIRIT-MURDERING

The purpose of this study is to understand the experiences of Black women in engineering graduate programs and how they channel spirit-murdering experiences to empower themselves and others through varying forms of activism that aids in their scholarly development. As part of this study, you are being asked to create a visual art form that expresses "spirit-murdering" to you.

Spirit-murdering is defined as "the personal, psychological, and spiritual injuries to people of color through the fixed, yet fluid and moldable, structures of racism, privilege, and power." In this context, spirit-murdering would be the non-physical injuries to you through experiences that are racist, gendered, and/or inequitable. Now that I have reminded you of the definition, I will provide you with the instructions below.

Reflect on the definition of "spirit-murdering" and how it relates to any experiences, emotions, thoughts, or perspectives you may have.

Create a 2d visual art form that represents how you visualize "spirit-murdering" based on your reflection. [ex: a collage of images that represent how spirit-murdering makes you feel or a painting that represents a "spirit-murdering" incident].

- Examples of 2d visual art forms include paintings, drawings, collages, photographs, memes, etc.
- It can be digital or hand-made with craft materials. If it is hand-made, you can take a picture of it.

Create a video response that explains the elements of your "spirit-murdering" art creation.

- Ideally, the video would be no more than 5 minutes.

APPENDIX C

HOMEGIRL CONVERSATION_SPIRIT-MURDERING

Hey honey! I want to say thank you for agreeing to participate in this study! The purpose of this study is to understand the experiences of Black women in engineering graduate programs and how they channel spirit-murdering experiences to empower themselves and others through varying forms of activism that aids in their scholarly development. The focus of this interview is the concept "spirit-murdering". We will ask you questions about your experiences and the impact of those experiences. This interview may be a little heavy and may result in varying emotions. This is a safe space for your to share your experiences as well as your emotions. If at any point you want to stop the recording or discontinue your participation, please let me know. With that being said, I hope that this will be a space that validates you and your experiences in pursuit of equity and justice. Do you have any questions, comments, or concerns for me before we get started? [pause and answer any questions]. Alright, let's first begin with a wellness check-in.

Wellness Check-In

Have you decided on your pseudonym for the study?

What is your pseudonym?

How are you doing today?

How has this week been for you?

The Experience

Tell me about the experience(s) you thought of when creating your art form.

Who was involved?

What were their respective positions, in relation to you?

How did this impact your well-being? (i.e. mentally, health-wise, academically?)

How did this impact your development as an engineer?

How did this impact your development as a scholar?

How did you, if you did, find support during this experience?

Tell me about how this experience has impacted you long-term.

The Art

Okay, now we will move into some questions about your art.

Explain your art piece to me.

How does it represent "spirit-murdering"?

What was your process for deciding what to include in your art?

How did you feel creating the art?

The Video Response

Okay, now we will move into some questions about your video response.

Explain where and how you recorded your video response.

What was your process for deciding what to include in your video response?

How did you feel recording the response?

Closing Remarks

Alright! That was all I had. Do you have any more questions for me? [pauses and answer any questions].

Level 1: Well, we will get this interview transcribed and I will email it to you to provide you with the opportunity to read it and add, remove, change, or edit anything you said. You are not obligated to do this, but I encourage you to do so if you would like. Anything written or quoted from you will be sent to you for verification. Your incentive for participating in this study will be processed within the next 2-3 weeks. If you have any questions, please let me know. Thank you for participating in this study. Be empowered.

APPENDIX D

CONSENT FORM

You have been selected to participate in “The Path of Most Resistance” study as an intellectual contributor (participant). Based on your verbally-consented screening interview, we would like to welcome you to the cohort of 9-15 other Black women in the U.S. who either have, or are obtaining, PhDs in engineering disciplines and have had experiences with the construct of [insert construct here]. We are extremely excited to see what activistic ways we can leverage the research conducted here to advance equity and justice in Black women’s intellectual and holistic contributions to engineering graduate education.

For the construct of [insert construct here], you will be expected to create a 2D visual art form, brief 3–5 minute video explanation, and participate in a 60-90 minute interview that will be conducted via Zoom. To fully participate, you are expected to complete all 3 research activities. Upon completion, you will be compensated $100 for your intellectual contribution.

This work will be longitudinal spanning the time of one to two years. Your consent in this process is your intent to fulfill the commitment of participation, which includes (1) 2D visual art form, (1) video narrative, and (1) Zoom interview for the construct of [insert construct here].

Data collection and storage will be done with the utmost ethical consideration and care. We would like to audio and video record this interview. However, the interview will not be recorded without your permission. Please indicate below if you give us permission to record:

___ I give permission to audio record my interview.

___I give permission to both audio and video record my interview.

___I do not give permission to record my interview.

You have the authority to change your mind after the interview starts, just let the interviewer know. You also have the authority to skip any questions that you wish to not answer. The audio and video recordings will be transcribed externally and the transcriptions, plus the art, will serve as the primary data for the research project. All data collected will be stored on a secure server. No IP addresses will be needed for this study.

Information obtained from you in connection with this study and that can be identified as you, will remain confidential. You, as well as all other intellectual contributors, will choose your pseudonym that will be used during the data collection, analysis, and dissemination of this research. All de-identified data collected as a part of this current study may be used for future research purposes and will be kept for up to 5 years after the study is complete and a master key will be kept in a separate folder.

Your participation in this study is completely voluntary. We expect to have 9-15 intellectual contributors. If you choose not to participate or to withdraw from the study at any time, you are able to do so without penalty. You have the right not to answer any question and to stop participation at any time. You must be 18 or older to participate in this study. There are no foreseeable risks or discomforts to your participation other than the challenge of scheduling and providing intent to participate with the unknown schedule/expectations of future. There may be participants that despite the best intentions, are unable to complete the study.

Participants who participate may benefit from the opportunity to reflect on their experience in the engineering environment and possibly how liberatory experiences of

empowerment and activism have helped them and/or played a big role in their success. They will be able to share important insights on their experience.

All identifying information will be discarded after ten years. The results of this study may be used in reports, presentations, or publications, but your name will not be used. We will do our part to share all project-related publications with you all as intellectual contributors.

If you have any questions concerning the research study, please contact Fantasi Nicole at: fantasi@asu.edu or Brooke Coley at: 480-727-2564 or bccoley@asu.edu. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

Your signature below indicates you have been consented for the study "The Path of Most Resistance" and would like to be move forward as an intellectual contributor.

_____ _____

Signature of Participant Date

_____

Printed Name

_____ _____

Signature of Person Obtaining Consent Date

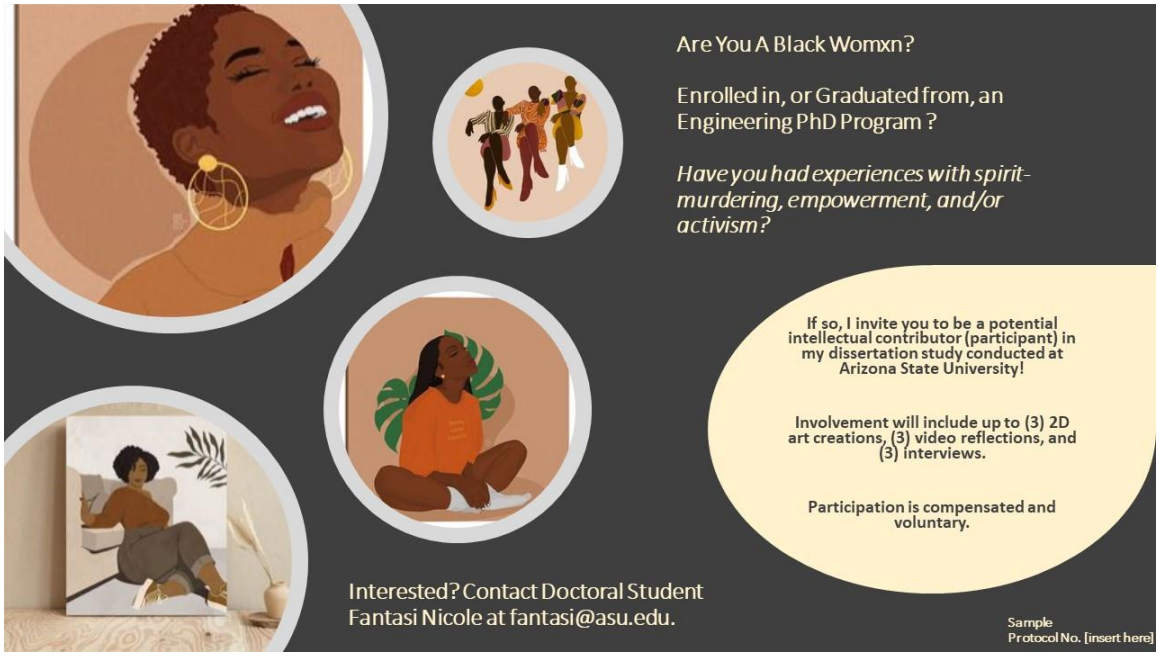
_____

Printed Name of Person Obtaining Consent

APPENDIX E

RECRUITMENT COMMUNICATIONS

Social Media / Text / Email



Hello My Beautiful Black Woman,

My name is Fantasi, and I am a fellow PhD student and engineer. I am conducting a dissertation study with the purpose of understanding the impact of spirit-murdering on Black women in engineering graduate programs and how they empower themselves and others through varying forms of activism that aids in their scholarly development.

I am looking for intellectual contributors (participants) who identify as Black womxn who are enrolled in, or have graduated from, an engineering PhD program, and have had experiences with the constructs spirit-murdering, empowerment, and/or activism.

You are receiving this [email/text/DM] because 1) you expressed interest or 2) someone referred you.

Either way, I'm happy we have connected and would love to schedule an initial consultation with you to 1) discuss specific details of the study, 2) participation requirements, 3) construct definitions, and 4) conduct a prescreening process.

Interested? Choose your available times using this scheduling link: [insert here]. If you have any other questions, please let me know.

Peace, Justice, and Blessings,

Fantasi Nicole
Doctoral Student,
SPACE Lab, Arizona State University
fantasi@asu.edu
662-648-8558

APPENDIX F

IRB APPROVAL

APPROVAL:
MODIFICATION

Brooke Coley
IAFSE-PS: Polytechnic Engineering Programs
(EGR) 480/727-2564
Brooke.Coley@asu

.edu Dear Brooke

Coley:

On 3/1/2022 the ASU IRB reviewed the following protocol:

Type of Review:	Modification / Update
Title:	The Path of Most Resistance: Spirit-Murdering as an Impetus for Empowerment and Activism Amongst Black Women in Engineering Doctoral Programs
Investigator:	Brooke Coley
IRB ID:	STUDY00015243
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• ConsentForm_Level3, Category: Consent Form;

The IRB approved the modification.

When consent is appropriate, you must use final, watermarked versions available under the "Documents" tab in ERA-IRB.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

REMINDER - Effective January 12, 2022, in-person interactions with human subjects require adherence to all current policies for ASU faculty, staff, students and visitors. Up- to-date information regarding ASU's COVID-19 Management Strategy can be found here. IRB approval is related to the research activity involving human subjects, all other protocols related to COVID-19 management including face coverings, health checks, facility access, etc. are governed by current ASU policy.

Sincerely,

IRB Administrator

cc: Fantasi Curry
Fantasi Curry

BIOGRAPHICAL SKETCH

Poem: I AM FANTASI NICOLE CURRY, PhD.

F – Fantasi, a figment of your reality, but the essence of my ancestors' wildest dreams
A – A product of engineering profession and the product of my demographic streams.
N – Nestled in between innovation and authenticity, success and growth, and culture
T – Tenaciously crafting my purpose and destiny like the details of a beautiful sculpture.
A – Aiming to advance engineering in a way that denies the stagnant and unrealistic
S – Southern values and epistemic grounding making me the most optimistic.
I – Igniting a professional fire that transforms in efforts to enlighten

N – Navigating the perils of a broken system in hopes for the attainable heighten.
I – Imbibing the ideals that brought me here to this point of activism and innovation
C – Calling for others to embody this care so we can inspire an entire nation.
O – Operationalizing engineering and education as spaces for liberation and triumph
L – Labeling inequities so people in power can no longer act in compliance.
E – Engaging in work that is critical by nature, but liberatory in practice

C – Cultivating space to mitigate the constant actions of engineering malpractice.
U – Uniquely me with no desire to be like the next engineer or professional
R – Reclaiming my time through owning who I desire to be, and that's exceptional.
R – Radiating with the ambitions and aspirations that other people may call insanity.
Y – Yet, I may be just what engineering needs to reach it's wildest fantasies.