Strategies that center equity and support well-being within all-women academic virtual research teams

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Strategies that center equity and support well-being within all-women academic virtual research teams

by

Sarah Hepler

Under the Direction of Jennifer Darling-Aduana

ABSTRACT

Very little research examines the intersection of virtual research team labor, the experiences of women and diverse people working on virtual research teams, and the role that power dynamics play in constraining and opening up possibilities for resilience and agency on virtual research teams between members of all roles, including the non-human actors and digital technologies that support human researchers. The general body of
research that does exist focuses on corporate virtual teams that seek to reduce conflict between members in order to increase profit margins. Likewise, research settings, theory and methodology is homogenous in the literature and tends to align with the profit goals of large corporations. A few studies do conceptualize and study power dynamics on virtual research teams and these all suggest that a flattened hierarchy increases creative adaptation, satisfaction amongst researchers, and research output. Still, these studies don’t consider all-women virtual research teams in their exploration of power nor do they specifically work through a critical lens. In my work, I sought to fill these gaps by doing interpretive, empirical research on diverse academic women researchers, supported by other human and non-human actors, working on a single-gender virtual research team over several years together. Theoretically, my work was situated in both the critical feminist and actor network theory postmodern worldviews. Using these worldviews, I conducted 10 interviews and gathered recorded meetings and related documents. I then performed a thematic analysis of the 10 interviews and 9 selected meetings. Next, I completed two rounds of critical discourse analysis. First, within a larger critical ethnographic lens, I analyzed interviews, documents, and recorded meetings using Grbich’s frames of analysis technique. Then, I ran a second discourse analysis using Venturini’s cartography of controversies approach. I presented these as a consolidated set of analyses within analyses in this manuscript. I also offer a pragmatic model for virtual research teams to work from to flourish better together in the academy. In this way, I hoped to contribute to the literature and to the praxis of VRTs composed of diverse woman-identifying researchers, and the non-human actors that support them, in co-creating more resilient systems together.
INDEX WORDS: well-being, virtual research teams, research teams, women, higher education

Strategies that center equity and support well-being within all-women academic virtual research teams

by

Sarah Heper

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1 THE PROBLEM

In this exploratory study, I constructed the experiences of a group of diverse woman-identifying educational researchers working together on a virtual research team. These researchers are committed to working from a justice perspective in conducting their research, but also in their working relationships with each other. My study interrogated how a team committed to culturally affirming research practices apply justice practices in their work with each other in a virtual setting.

Research Question & Purpose

My research question is: How do diverse, women-identifying researchers, supported by human and non-human actors, co-create strategies that center equity and support well-being on a virtual research team? While a handful of past studies have explored culturally responsive research (Berryman et al., 2013; Seponski & Lewis, 2017; Trainor & Bal, 2014), this work has focused on interrogating the power relations between researcher and participants rather than deconstructing power relations between academic researchers. More importantly, very little work has described how research team members might flourish together. In addition, no current research has explored the role of technology as an additional agential actor on a virtual research team. In particular, I was interested in how the meeting and documentation technologies that the human team members have chosen - like Google Docs, the Cayuse iRIS IRB software, and video conferencing - open up or close down network formation possibilities.

Significance of the Study

Very few current studies explore the experiences of woman - including women with multiply-marginalized identities - specifically as researchers in relationship with each other, even though some research has been performed that examines the lives of diverse academics (Acker &
Feuerverger, 1996; Onwuegbuzie, A. J., 2021; Han, Scull, and Harbor, 2021; Wolf-Wendel & Ward, 2006). Moreover, a paucity of research exists on virtual research teams in non-corporate settings, much less literature that takes a critical or transformative worldview. The literature that does exist tends to focus on corporate Research & Development teams (Gassmann & von Zedtwitz, 2003; Kratzer, Leenders, & van Engelen, 2006) rather than on those teams doing research in the public sector.

On a more pragmatic and more personal note, my two and a half decades of experience working in support, curriculum development, mentoring, teaching, and leadership roles motivated this research. Across these roles, I’ve worked alongside and formed deep friendships with women faculty and others in support, teaching, leadership, and research roles. Although we all had different official titles and ranks - adjunct faculty, researcher, full professor, associate librarian, lead instructional designer, director of tutoring, and so many more - we all shared common joys and challenges in the academy as women. A decade ago, I moved from one teaching center at an access institution to a teaching center at a large R1 institution. There, I noticed a huge leap in the anxiety level of the women faculty that I was working with. Moreover, my offer of partnership - no strings attached! - was often a shock to these faculty. Many meetings ended with hugs and tears of relief. I wondered what caused this surprise and this emotional response to what I saw as standard practice in my field. As I talked with these women, I came to understand the culture and the pressures of the large R1 that I was working at was rarely supporting these faculty with the time, resources, mentoring, or communities that they needed to flourish. I realized that the women I was engaging with were working in a competitive, high-pressure role with fuzzy expectations that demanded transactional relationships in order to secure grant funding and move through the promotion and tenure process. Many, many women
faculty described to me how their work was negatively affecting their personal lives and their mental health. I wondered how these women survived - and sometimes thrived - in very difficult working conditions. As women faculty at my institution went online during the COVID pandemic and stayed hybrid after, these questions became more critical. I wondered: Was anyone studying researchers in general? What about women researchers? What about women researchers working online while juggling complex personal lives? And how might we all work together to improve the lives of these faculty?

**Assumptions and Limitations**

Since my study was framed within the critical tradition, my research assumed that the taken-for-granted ways of working on virtual research teams within academia are imbued with unhelpful and undemocratic structural and systematic power dynamics. However, my study also assumed that women have agency within large-scale and more localized power dynamics and enact, resist, and subvert historical power dynamics. More specifically, I assumed that women with multiply-marginalized identities (race, class, status, motherhood, gender) are critical models for and contributors to more culturally-affirming and more equitable research team practices that positively affect *everyone*. My study was limited to one long-term research team that has shifted and changed members and roles over time.

**Overview of the Study**

My study participants were 5 woman-identifying researchers from diverse backgrounds, diverse identities, and with different power positions on the team over time. My setting was the digital ecosystem that these women inhabit and co-create, including web conferencing rooms and recordings, shared drives and documents, email, text, and other digital means of communication,
along with their particular culturally and politically signified physical bodies, homes, communities, places of work, cultures, and geographic regions.

I used a double reading (see Lather, 2001) meta-method in my research. I did this to interrogate my own assumptions and analysis as I worked through all stages of the research process from question generation through instrument development through analysis and reporting. Moreover, as I performed my research, I found that some of my participants inhabited a more critical theoretical space in their professional and personal lives while others took up a more postmodern way of becoming. In this way, my double reading also reflected the evolving ways that my participants move through the world.

In order to more specifically investigate my research question, I used both Critical Feminist (CF) and Actor-Network (ANT) theories and the related methodology of critical intersectional digital ethnography. In using both Critical Feminist Theory and Actor-Network Theory, I first applied a theory that broadly centers the experience of women, including women with multiply-marginalized identities, and then applied a theory that traced the relationships and circulation of local power within virtual research teams.

My study was a critical intersectional digital ethnography. I first analyzed interview transcripts and meeting observations to create a thematic analysis from a critical ethnographic perspective since my study focuses on “where power lies, how it is maintained, and how this might be changed” (Grbich, 2013, p.55). Although I came to this analysis with a code tree based on my literature review, this analysis involved a close reading to both apply and construct codes and then themes related to local and non-local cultural power dynamics as Grbich (2013) describes above. In other words, my code tree evolved over my analysis. Next, I performed two critical discourse analyses simultaneously. Following Grbich (2013), I identified the frame and
then interpreted the text across my sources of data. I then repeated this discourse analysis from an ANT perspective, to create a “cartography of controversies” (Venturi, 2009) from a more postmodern ethnographic perspective. As the name indicates, the cartography of controversies (COC) is a series of visual mappings. These mappings describe the human and non-human actors that worked together, diverging and converging in their goals, labor, and ideologies. After completing a draft of each type of discourse analysis, these continued to inform each other as I revised and rethought their individual contributions. In this way, I performed a fluid “double reading” (see Lather, 2001) or an analysis of data using one theory or methodology and then a reanalysis of the data using a second theory or methodology.


2 REVIEW OF THE LITERATURE

Research on women academics working on virtual research teams is scarce, even though academics and other researchers are working on virtual teams in larger and larger numbers in light of the ongoing COVID pandemic (Brown et al., 2022). The general literature on virtual teams that does exist tends to focus on corporate R&D teams (Gassmann & von Zedtwitz, 2003; Kratzer, Leenders, & van Engelen, 2006) and trends towards more apolitical, capitalist approaches focused on employee optimization with an eye on profits. Only a handful of extant studies focus on the relationship between power and the experiences of women, including women with multiply-marginalized identities, working as researchers on virtual teams in non-corporate settings (Thaba-Nkadimene et al., 2021; Brown et al., 2022).

Since the literature in this area is scant, this literature review will review several related areas and will be split into two major sections. First, I will turn towards the question of power in the academy, with a specific focus on intersectional identities and virtual research teams. Second, I will discuss trends in the virtual teams literature before focusing more specifically on the area of virtual research teams. Drilling down further, I will consider the research on people working on virtual research teams.

To better structure my literature review, I include the logic model (Figure 1) below as a reference. In short, this model demonstrates the context, elements, mediators, and interactions that I hope to analyze in my study. Overall, this logic model shows that team resilience is mediated by digital and analog technologies in the global context of existing power dynamics and the local context of the virtual research team. The global context and the local context only partially overlap here to recognize that although global power structures most definitely
influence local contexts, this influence is diverse and only partial. In addition, from an Actor Network Theory perspective, the local context is the primary context of concern.

**Figure 1**

*Literature Review Logic Model*

In addition to the logic model, I also include a coding tree to further organize the concepts from the literature review that I engaged with in my own work. The coding tree can be found in Appendix A. I will refer back to this model and this coding tree throughout the literature review.

**Literature Review Search Strategy**

In my review, I used the Ebscohost Discover Advanced option. This service searches all library databases and allows the user to use Boolean operators to include and exclude multiple search terms. I performed the following main searches using the “Peer-Review” limiter and the *and* Boolean operator. I then viewed the detailed record of the results and determined their
appropriateness by reviewing the titles, abstracts, and tagged subject terms. After reviewing initial broad results, and storing broadly-relevant sources, I then narrowed my searches using the terms in parentheses, performing the same review for appropriateness (please note that although I only include this parentheses on the first main search combination here for brevity, I used it with all main searches). For each of these more-specific searches, I used the and and the or Boolean operator. In this way, I invited search results that were both tagged with discrete metadata and those results that were tagged with more holistic or intersectional metadata.

- **Academia and Power or Power Dynamics and**
  - Identities: Gender, Women, Race, BIPOC, Black, Latino/a, Latinx, Hispanic, Indigenous, Class, SES, Faculty, Status, Rank, GRA, Adjunct, Part-Time, Parents, Parenthood, Mothers, Motherhood
  - Justice: Justice, Diversity, DEIR, Diversity Equity and Inclusion, Inclusion, Equity, Power Dynamics, Leadership, Roles, Agency, Inequality, Structure, Discrimination, Minority, Minoritized, Intersection, Intersectionality
  - Technologies: Technology, High Fidelity Technology, Member Mobility

- **Accademia and Hidden Curriculum and (Identities or Technology or Justice or Well-Being items)**

- **Academia and Professionalization and (Identities or Technology or Justice or Well-Being items)**

- **Teams and Power and (Identities or Technology or Justice or Well-Being items)**

- **Virtual Teams and Power and (Identities or Technology or Justice or Well-Being items)**

- **Virtual Research Teams and (Identities or Technology or Justice or Well-Being items)**
Virtual Research Teams and Power (Identities or Technology or Justice or Well-Being items)

Power Dynamics in Education & Academia

Figure 1 demonstrates that power exists locally on Virtual Research Teams (VRTs) - or “a [research] team whose members rely on technology-mediated communication in working across geographical, organizational, and/or time boundaries to accomplish team tasks and achieve team goals” (Wakefield, 2008, p. 435) - and in the particular VRT under study, but also as a more global structure. In addition, the contexts of organizational culture and the tension between real life and virtual life overlap these two types of power. This portion of the paper first considers power in the context of academia before turning to a more specific examination of the experiences of diverse academics: Those who are women, minoritized, from lower socioeconomic backgrounds, mothers, and/or with a more marginalized professional status.

Academia is hierarchical and is thus imbued with power differentials, or the idea that differently situated people with different roles and identity markers have differing levels of control over their own lives and different levels of political say. The critical Marxist tradition theorizes power through the concept of hegemony as a norming and dividing force on social order (Marx, 1926; Gramsci, 1971). Hegemony “denotes the success of a dominant class in presenting its view of the world and its ideology, in achieving an intellectual and moral leadership in a way that the other classes accept it and consider it common sense” (Menga, 2016, p. 406) while the embedded “ideology” means having power over ideas (Menga, 2016). These ideologies exist as tools to maintain the status quo and to keep the privileged in more privileged positions through their ostensible adherence to dominant cultural values, while relegating others who don’t or won’t comply to positions that support the flourishing of the privileged.
Furthermore, Gramsci (1971) holds that hegemony is promoted by the class of professional intellectuals, including educators.

Many educational theorists (Friere, 1972; Giroux, 1981; Apple, 1990) have taken up Gramscii’s thinking about hegemonic power in schooling and education. Foundational critical pedagogist Henry Giroux (1978) helpfully provides us with a Marxist reimagining of Philip Jackson’s (1968) anthropological idea of the “hidden curriculum” - or the unstated but structuring social rules that sort workers into classes - as an alienating means of control both inside and outside of the classroom. Apple (1979) furthers Giroux’s reimagining, arguing that schools exist to preserve and distribute economic and symbolic property in order to maintain social control by dominant groups. Although Apple focuses on K-12 education and posits that one of the sorting functions of this “hidden curriculum” is to further the higher education of an elite class, theorists have used this thinking at the university level in considering everything from the effects on general student achievement (Nami et al., 2014) to medical student valuation systems (Doja et al., 2016). Other researchers have gone further to consider how hidden curriculums of professionalization - or, unspoken rules around how to become an optimal worker in a particular profession - affect faculty members and faculty-in-training (Villanueva et al., 2018). For instance, in a study of engineering faculty, Villanueva et al. (2018) found that 1) faculty only sometimes recognize the existence of the unspoken rules of their profession, 2) women, including women with multiply marginalized identities, experience professional inequalities related to these hidden professional expectations, and 3) faculty indicated that personal advocacy can occur in their roles as instructors to change the status quo for future faculty. These findings are connected to my own study since I am writing about the experiences
of justice-oriented women working on an academic research team. I have included these concepts in my coding tree.

Relatedly, in a study of power differentials and ethical decision-making in academia, Gibson et al. (2014) helpfully describe a typology of power that more senior academics possess over others - coercive power (force), expert power (knowledge or prestige), legitimate power (role-based), reward power (ability to fulfill wants), and referent power (role models). In their work, they found that academics discuss power and ethics through the role lenses of authority, peer, and subordinate, with those in authority trusting themselves more than they trust others with a similar amount of authority. In my own study, I used Gibson et al.’s (2014) typology to code instances of power.

In considering how power circulates amongst academic research team members in real and material ways, it seems helpful to consider how neoliberalism - or the modern free-market global economy with a focus on deregulation and unlimited growth (Vallier, 2022) - has shaped the possibilities of interpersonal relationships in education. In particular, Biesta’s (2003) work on accountability regimes in education is especially useful. In short, Biesta contends that the neoliberal push towards auditable accountability of all things - including all relationships in education - limits the possibilities of personal responsibility in unhelpful and undemocratic ways. Although not inevitable, this “new managerialism” sets up a potential world of relationships where each educational interaction resembles a corporation competing for customer attention and approval.

**Power: Gender, Race, Motherhood, SES, and Professional Status in The Academy**

In considering power and the related concept of accountability regimes, it seems helpful to turn to an exploration of how academia holds academics with marginalized identities to
different standards. Marginalization, or historically disproportionate and systematic oppression, is critical to the understanding of identity, power, oppression, and opportunity in the U.S. Although identity is constructed (or, not determined through biological means), intersectional and overlapping, rather than additive, and mutable, I’ll consider six identity markers - gender, race, status as a parent, SES, and professional status - in the following discussion from an intersectional perspective. “Intersectionality”, a concept developed by legal scholar Kimberly Crenshaw, “describe[s] the intersecting effects of race, class, gender, and other marginalizing characteristics that contribute to social identity” (Seng et al., 2012). Since women, including women with marginalized identities, are faculty and faculty with marginalized identities are subjected to many of the same oppressions, I present the general literature on marginalized faculty below. Through this discussion, I wonder: How can we decrease oppression for women faculty - including discrimination, role strain, overwork, underpay, and limited career prospects - and increase security, social mobility, and general flourishing?

**Structural Inequalities**

Structurally, unequal access and representation begins during graduate education with fewer women gaining doctorates than men (NCSES, 2021). A mere 7% of PhDs are awarded to Black students and 6% to Latinx students overall (NCSES, 2021) despite Black and Latinx people making up 35% of the U.S. population. Inequalities exist within particular disciplines as well, with engineering and computer sciences doctorates overwhelmingly awarded to white men (NCSES, 2021). Many disciplines (Physical Sciences, Mathematics, Geosciences) graduate proportionately miniscule numbers of Black students as well, thus leading to disciplinary homogeneity in the academy (NCSES, 2021).
After graduation, Black and Latinx PhDs are more likely to work in academia than their White peers but are much less likely to hold tenure-track positions (NCSES, 2021). Women in general - and more specifically, women of color - are also much more likely to work as adjuncts and much less likely to hold tenure-track positions (AAUP, 2018). Likewise, faculty from poor and working socioeconomic backgrounds are much more likely to be adjuncts and work at 2-year colleges (Haney, 2015). Moreover, class of origin continues to affect faculty member earnings and prestige, even when faculty from different classes of origin obtain graduate degrees from comparable institutions (Chiappa et al., 2019).

In some disciplines, this inequality is more pronounced with fields such as engineering and computer science having few tenure-track women faculty. This pattern persists in leadership as well, with all women only representing 30% of executive leadership positions and BIPOC women only holding 5% of these positions (AAUP, 2018). Across all faculty positions, we also know that women experience significant pay gaps. This gap persists despite women doing more work than men (Docka & Stone, 2021; Guarino & Borden, 2017; Hanasono et al., 2019), including producing more frequently cited research (AAUP, 2018) and providing more service to their institutions (Lester, 2008).

Structurally, 75% percent of executive-level academic positions are held by individuals identifying as White men (AAUP, 2018; NCES, 2021). Ironically, in addition to doing more traditionally gendered work and gender-related research without reward, women academics are doing more and more impactful research in general (Thelwall, 2020a). Nevertheless, women are much less likely to be promoted into more senior positions (Thelwall, 2020a; Thelwall, 2020b). These findings suggest that women researchers contribute more to the practical and prestige
impact of their communities and universities yet are not equally represented in academic leadership positions.

**Job Security: Positions, Pay, & Benefits**

Job security is a pressing and continuing concern as universities continue to reduce the number of available full-time positions across job roles. In their 2017 book *The Gig Academy: Mapping Labor in the Neoliberal University*, Kezar et al. (2017) describe this trend as the *Gig Academy* and describe the increasingly precarious living situation of workers in academia, with contingent faculty, GRAs, and staff all experiencing unstable working conditions, low salaries, non-existent or insufficient benefits, and other features that reflect the larger trend towards gig working. Although job security in academia is tenuous for everyone without full-time tenured positions, the situation is especially fraught for workers with marginalized identities. For instance, faculty from lower Socio-Economic-Status (SES) families-of-origin are much more likely to be adjuncts and to work lower paying jobs at 2-year colleges (Haney, 2015).

**Acute Discrimination**

In their day-to-day work, academics identifying as belonging to minoritized groups report experiencing racial discrimination (Onwuegbuzie, A. J., 2021). Moreover, these same academics must constantly self-surveil or risk becoming “suspect” (Han, Scull, and Harbor, 2021). The specter of suspectness was described by one participant in a study by Han, Scull, and Harbor (2021, p. 78):

> Once “mistakes” are made and attributed to a [faculty of color], they are concretized, recorded, singled out and the officials in power and other university members get the confirmation of the narrative, constructed about [faculty of color] by the White
superstructure. The narrative begins with “This [faculty of color] is difficult to get along with, not intelligent enough, has unclear communication, or lacks something.”

**Overwork, Role Strain, & Burnout**

We also know that women, including women with multiply-marginalized identities, do more work and more emotionally exhausting work both inside the academy and at home (Docka & Stone, 2021; Guarino & Borden, 2017; Hanasono et al., 2019). The literature clearly demonstrate that women in academia are expected to adhere to traditional gender roles by performing more emotional labor - or, unrecognized but critical structural and interpersonal care-taking activities - with students, colleagues, and fellow researchers (Acker & Feuerverger, 1996; Ashencaen-Crabtree & Shiel, 2019; Bird, Litt, & Wang, 2004; Docka & Stone, 2021; El-Alayli et al., 2018; Knights & Richards, 2003; Tierney & Bensimon, 1996) with no real benefits to their careers. According to Lester (2008), this emotional work not only includes informal support, but also the time-consuming work of advising students. In general, the literature demonstrates that women in academia have heavier service loads than men (Docka & Stone, 2021; Guarino & Borden, 2017; Hanasono et al., 2019) and that this service is focused on internal service to the campus community rather than more prestigious external service (Guarino & Borden, 2017). Relatedly, women from poor and working class backgrounds must work harder throughout their university schooling and faculty careers to compensate for the invisible and early social conditioning provided to their middle and upper class peers (Haney, 2015).

Relatedly, Lester (2008) also points out that women take on the brunt of often difficult and emotionally exhausting gender relations research. Likewise, academics identifying as belonging to minoritized groups experience higher expectations to perform emotionally burdensome work around race and identity work such as holding positions on diversity
committees (McGinn & Niemczyk, 2020). Although academics identifying as Black, Brown, and Indigenous are expected to do committee work around race and identity, race-related research is often viewed as illegitimate by tenure and promotion committees (Han, Scull, & Harbor, 2021).

Junior faculty face an increasingly more competitive and more labor-intensive work environment once they secure a position, with younger faculty taking on more teaching and administrative roles than are outlined in their contracts (Azevedo, 2020). This effect is especially pronounced for early career faculty that are women (Caretta et al., 2018) and early career faculty of color (Guillaume & Apodaca, 2022).

The decision to become a parent often coincides with the early careers of faculty and women experience the most strain around this life stage. First, faculty men are much more likely to have children than women and tenured men are also much more likely to have families specifically (AAUW, 2018). When faculty women do become parents, they report experiencing intense role strain as they manage the competing responsibilities of teaching, research, promotion and tenure activities, and parenting (Wolf-Wendel & Ward, 2006). These negative effects only intensified during the pandemic as mothers took on a disproportionate amount of childcare, schooling, and housekeeping responsibilities to the detriment of their careers (Docka & Stone, 2021; Fulweiler et al., 2021; Zamarro, Perez-Arce, & Prados, 2020).

**Designing From The Margins**

Although people with marginalized identities experience a wide variety of overlapping oppressions, two points are critical here. First, these oppressions are not a result of chosen or imposed identities or expressions of these identities. Instead, the fault lies with entrenched structural hierarchies, processes, and relationships steeped in a racist, classist, and sexist system. These structural oppressions are materially connected to resource allocation and opportunity.
At a national level, for instance, we know that universities and colleges in the U.S. are purposefully stratified and encouraged to compete with each other for ostensibly scarce resources that almost always go to prestigious institutions with an already-wealthy student population (Davies & Zarifa, 2012). Since wealth is overwhelmingly White (United States Census Bureau, 2022), it is no surprise that students at these prestigious institutions are also overwhelmingly White (U.S. News & World Reports, 2022). This unequal resource allocation affects the students, faculty, and staff working at these less-resourced and less-prestigious institutions in both the short and long term (Davies & Zarifa, 2012). As previously noted, academics with marginalized identities are more likely to work at under-resourced institutions. At a more local level, we know that this capitalist approach to higher education can encourage individualistic and disposable approaches to diversity that are incommensurate with real structural change or recognition of oppression (Scarrit, 2019).

Many challenges exist to making changes in this system. However, the literature provides us with many actionable suggestions for increasing equity, or the process of recognizing and fixing systemic barriers to flourishing for marginalized people. These overlapping possibilities are shown in the figure below.

**Figure 2**
Some higher education institutions have made real and significant strides towards creating a more equitable workplace. For example, women faculty at Georgia Institute of Technology, under an ADVANCE grant from the NSF, have been working since 2001 to increase the general equity of the entire institution through efforts such as spearheading an effort to no longer require the GRE and researching and advocating for the successful adjustment of faculty and staff salaries (Georgia Institute of Technology, 2021). Since a detailed grant report is due each year, more discrete equity efforts can also be seen, such as advocating for the admission of and then mentoring of black women graduate students, along with more traditionally recognized academic duties such as thematically aligned publishing (Georgia Institute of Technology, 2021). Importantly, these efforts at Georgia Tech are connected to funding and prestigious recognition and thus side-step some of the pitfalls of doing DEIR work as previously discussed.

Second, rather than being a burden to higher education, folks with marginalized identities bring ontologies, epistemologies, life experiences, and approaches to praxis that make working in academia better for everyone. For instance, from a structural perspective, designing systems
from a Designing From The Margins process “centers the most impacted and marginalized users from ideation to production, pushes the notion that not only is this something that can and must be done, but also that it is highly beneficial for all users” (Rigot, 2022). From a more interpersonal perspective, designing from the margins can help foster higher education workplaces with real effects on individual worker happiness (Mousa, 2021).

**Intersectionality In The Literature**

Although identity is intersectional and constructed, intersectional approaches to research are only beginning to emerge and not all researchers coming from an intersectional theoretical perspective agree on how to conceptualize, research, and represent the construction and effects of intersectional identity. For example, in their work on intersectional identity amongst graduate students, Long et al. (2018) used a grounded-theory version of intersectional analysis that positions emerging micro-, meso-, and macro-level identity figures as clashing *binaries*. They argue that certain identities may become dominant for researchers working in higher education in ways that may either open up or constrain well-being. For instance, graduate research assistants that are new parents tend to adhere to an ideal graduate student identity to such an extent that this “supersede(s) the ideals of a new parent” (Long et al., 2018). This identity is formed and constrained by taken-for-granted disciplinary discourses about what it means to be a graduate student, as well as institutional policies about GRA parental leave and work expectations. In this way, the roles of *new parent* and *graduate student* clash with one another and *graduate student* succeeds. Long et al. (2018) represent this binary, conflicting conception in their write-up as a series of discrete headings: *Intersecting with graduate student, Intersecting with gender, Intersecting with culture.*
Other researchers position intersecting identities as impossible to disentangle and model their conceptualization, theorizing, methodologies, and representation on this entangled approach. For instance, Pittman (2010) used Collin’s matrix of domination to explore the oppressive structural and interpersonal experiences of women faculty of color. Importantly, in the matrix of domination, oppression is not additive; thus, different forms of oppression can not be examined separately. Pittman’s write up reflects this approach - with literature review and findings both presented thematically rather than by separate identities - and, more importantly, Pittma’s findings support the conjectures of the model. For example in discussing their experiences with white male students, black women faculty do not experience their own identities as split into “black”, “woman”, and “faculty”. Instead, these three identity markers are experienced simultaneously and in relation to white male students (Pitman, 2010).

In my own work, I followed Pitman’s approach. I modeled her example in my literature review by presenting my review holistically and conceptually, rather than split up by identity markers. In my research, I followed through with this approach in my collection methods and analysis. With collection, my interview questions, in particular, focused on the holistic experiences of women working on a research team. With analysis, I used my coding tree to identify oppressions and resilience holistically. In writing, I present the structural and interpersonal thematic findings that recognize the enmeshment of race, gender, class, parent-status, and employment-status rather than separating these out by identity markers.

**Virtual Research Teams**

In my study, I positioned the virtual research team as the major context in which researchers interact (see Figure 1). In this section, I will first present a summary of findings on the larger, more well-studied area of virtual teams before turning to the literature on virtual
research teams. I then turn to more specific literature exploring the experiences of women and marginalized people working on virtual teams, including virtual research teams.

**Virtual Teams**

According to Wakefield et al. (2008, p. 435) a virtual team is “a team whose members rely on technology-mediated communication in working across geographical, organizational, and/or time boundaries to accomplish team tasks and achieve team goals”. Although a great deal of research has been done on teamwork and team dynamics in general, less literature exists on virtual teams (VTs) (Gilson et al., 2015). This difference in inquiry is not only attributed to newer models of globalization that allow for distributed work (Harvey & Griffith, 2007), but also to the recent rise of more sophisticated digital communication and collaboration tools and environments that allow for more high-fidelity experiences (Fuller et al., 2006; Gilson et al., 2015). The virtual team literature that does exist coalesces around two main threads: individual team member traits and whole team considerations.

More trait-based VT research tends to be performed in the management sciences and focuses on psychological personality approaches, with validation and extensions of the Five Factor Model personality framework being a prevalent concern (Cogliser et al., 2012; Yi Zhang, & Turel, 2012, Dennis et al., 2022). Research in this area is largely experimental and has uncovered a robust positive correlation between individual VT member conscientiousness and team success across many studies (Cogliser et al., 2012; Yi Zhang, & Turel, 2012, Dennis et al., 2022). Similarly, other researchers seek to validate and extend other trait-based personality theories in the context of VTs, such as the circumplex model (Brown et al., 2004). On the other hand, whole team VT considerations tend to focus on more cognitive psychological approaches and consider more discrete concepts that lead to team success, such as efficacy (Fuller et al.,
2006), resilience (Degbey & Einola, K., 2020), and the creation of shared mental models (Xue et al., 2015). These research trends tend to seek to validate the findings of general teams research rather than to posit new directions. I include these two more psychological, business-oriented research directions as a juxtaposition to my own more politically motivated research. Although my research focused on well-being, individual team-member personality traits and group cognition are outside the bounds of the current study. Instead, I am concerned with more holistic, structural approaches to well-being and resilience.

Turning from the two main threads of research, some authors helpfully also offer a more comprehensive look at the state of VT research (Gilson et al., 2015; Scott & Wildman, 2015; Abarca et al., 2020; Morrison-Smith & Ruiz, 2020). In their comprehensive review of themes and opportunities in virtual team literature from 2004-2015, Gilson et al. (2015), found a total of 243 empirical articles. After coding these articles across several common dimensions (sample, methodology used, inputs, processes, emergent states, and outcomes), they found 10 major themes in the extant VT literature, as well as 10 opportunities for further research. The themes include an increase in field work across multiple disciplines, a focus on the team as a unit of analysis, the emerging construct of virtuality, a focus on the pro-social effects of computer mediated communication, recognition of the differing effects of VT work in different cultures, the importance of organized, non-hierarchical and relational approaches to leadership and team building, and the relationship between trust and knowledge sharing. Gaps include a lack of focus on varied disciplines, age, methodological diversity, high-fidelity technologies, member mobility, team subgroups, team adaptation, creativity, and well-being. Given the comprehensiveness of Gibson et al.’s (2015) review, these themes and gaps could be used as a fruitful taxonomy of VT literature or a coding scheme for future studies. In my own work, I was particularly interested in
focusing on the gaps of high-fidelity technologies such as video conferencing, member mobility (or anywhere, anytime work), team adaptation, and well-being. I integrated these 4 concepts into my coding scheme.

Virtual Research Teams

Adapting Wakefield et al.’s (2008, p. 435) definition of virtual teams to virtual research teams, a virtual research team is simply “a [research] team whose members rely on technology-mediated communication in working across geographical, organizational, and/or time boundaries to accomplish team tasks and achieve team goals”. Very little literature exists on virtual research teams (VRTs), much less literature that takes a critical or transformative worldview. The literature that does exist tends to focus on corporate R&D teams (Gassmann & von Zedtwitz, 2003; Kratzer, Leenders, & van Engelen, 2006) rather than on those teams doing research in the public sector. Moreover, the findings of the existing corporate research team literature may not generalize to a public sector context since corporate research ultimately has the goal of profit and the public sector does not. Thus, these two contexts need to be studied separately since they have separate motivations. Hanebuth (2015) also cites the overall lack of research on Higher Education (HE) VRTs, as well as a lack of specific research that includes the perspectives of both HE VRT leaders and other members.

Two studies are helpful in examining existing HE VRTs. In an exploratory study in an academic VRT context, Hanebuth (2015) developed a framework of academic VRT success factors drawn from the existing corporate VRT research and then surveyed team members from 18 public institutions to determine their validity across contexts. These factors include communication technology, processes and standards, organizational culture, human resource management, on-the-job development and qualification, leadership, and experience working
virtually. Although the respondents indicated that all of these factors are relevant to VRTs, they ranked organizational culture and leadership as most aligned to VRT success. Although helpful, Hanebuth presents these factors as taken-for-granted realities drawn from management research; critical traditions would likely instead interrogate them as potential sites of conflict and power differentials. This approach would allow for more nuanced approaches to policy and practice amongst VRTs.

Unlike Hanebuth, Hoffman et al. (2013) offer a critical and specifically higher-education focused perspective in their auto-ethnography examining their own academic VRT as a site of taken-for-granted power dynamics embedded in “the global division of academic labor” (p. 474). More specifically, the authors examined the little-researched intersection of team power dynamics, digital communication tools, and international research team dynamics in a hope to illuminate a methodological blind spot for future research. In short, they found that a significant blind spot exists for academics in this area and point out that “context matters…[and] scholars often forget this applies to us” (p. 490). Importantly, they point out that both online research life and real life overlap in complex ways that scholars in the academy rarely reflect on in their own lives. More expansively, the authors found that power dynamics and relationships must be studied across time, across projects, and across context rather than focusing on a single project. In this way, the research reflects the often complex, long-term nature of virtual research team relationships.

In my own work, these two studies proved useful conceptually (see Figure 1). From Hanebuth (2015), I adapted the concepts of organizational culture and leadership. Leadership style directly affects technologies - or the tools and processes a team uses to get work done (Hanebuth, 2015). Organizational culture is an important context that straddles the local and
global contexts since virtual research teams work in institutions embedded in global power structures. From Hoffman (2015), I engaged with the concepts of power across projects/across time, the co-constructive contexts of real life and virtual life, and the formation of friendships on VRTs. Hoffman points out that a more complex view of power dynamics is integral to work in this area since “a narrow focus on trees, such as individual projects or use of ICT can indeed hide forests, i.e. collaboration spanning time and projects, or a myriad of collaborative practices, each with their own dynamics and power relations” (p. 490).

Women and Minoritized People Working on VRTs

In this section, I synthesize the literature on women, including women with multiple marginalized identities, and minoritized people working on VRTs. In addition, it is outside of the scope of this study to discuss the tension between individual identification and culturally constructed and enforced identities. Noticeably missing from this section are the other identify markers I discussed earlier in this review: motherhood, socio-economic status, and professional status. This omission is due to the lack of VRT research in relation to these identities.

Women are not only members of research teams, but also increasingly manage research teams (Tomas & Castro, 2013). Despite this, VRT research that focuses specifically on the experiences of women is almost non-existent. A search of “virtual research team” and “women” in the EBSCOhost Discover service only displayed a total of six peer-reviewed articles and zero directly relevant articles. Due to this lack of literature, I turned to the related work on women working on research during COVID in an attempt to find related theorizing. After all, the COVID pandemic contributed to more women joining virtual research teams out of necessity as well as a new mini-wave of research on women working on VRTs (Brown, 2022; Davis et al.,
Unfortunately, this increase in women participating in VRTs is coupled with an overall decrease in women working in research (Davis et al., 2022).

Fortunately, Brown et al.’s (2022) recent article offers a holistic consideration of the state of international women academics working during COVID. Although their original intention was not to examine women working on VRTs, their narrative makes it clear that they themselves worked and continue to work on a VRT together. Moreover, they sought the thoughts of other international researchers working during COVID - including, specifically, women researchers - and connected their own lived experiences working on a VRT during COVID to those of their fellow academics. The researchers offer several insights that can be used by fellow woman-centric VRTs and those studying women working on VRTs, including the two lessons that “collaboration is a negotiated, evolving, recursive, and transformative process” (p. 10, 2022) and that “collaboration takes time and effort” (p. 11, 2022). In addition, the authors offer three practical recommendations for women working on VRTs: “Identify a team coordinator to organize efforts ...Create a safe and equitable space for all involved...[and] Build a network for collaboration” (p. 11-12, 2022).

Thaba-Nkadimene et al. (2021) also offer a small but compelling case study of academic women attempting to work on VRTs in South Africa during the pandemic. These women wrestled with a lack of childcare, increased time pressure and workload, and a lack of basic and online resources to execute research duties. These findings reflect much of the general literature on women working in academia in general outside of a COVID-specific context (Knights & Richards, 2003; Wolf-Wendel & Ward, 2006). I must point out again that this small body of research does not frame itself as VRT research, only as research focusing on the effects of COVID on women researchers.
Historically, individuals belonging to minoritized groups have made up a much smaller percentage of the academy (NCES, 2010), had fewer roles as leaders in the academy (Han, Scull, & Harbor, 2021), and have not had the opportunity to participate in research at the same levels as White men (Han, Scull, & Harbor, 2021). In addition, little research exists detailing the lives of diverse people working on research teams. Most of the studies that do exist are recent and helpfully detail the experiences of minoritized women working on research teams.

In their phenomenological research on librarians belonging to minoritized groups, research partners Bright & VanScoy (2021) vulnerably talk about their own identities as White and Black librarians and women, describe their research relationship with each other, and reveal several insights related to the importance of including diverse researchers on research teams. First, they discuss how Black researchers can more quickly build rapport with Black participants through shared cultural understanding while simultaneously avoiding some of the emotional labor that comes with intra-racial interviewing. In this case, cultural understanding is conceptualized through the head nod gesture, a culturally specific gesture between black people that means “I see you. I understand where you’re coming from. I’m here for you. We are here together and all is well”. In addition, they describe how black researchers are often responsible for explaining black culture to other research team members outside of the culture and how this can erode a black researcher’s sense of well-being by placing emphasis on their minoritized identity. In fact, this happens in this article as VanScoy explains the meaning of the nod to Bright. Finally, they discuss how diversity of research team members helps create more relevant readings of data. Returning to the head nod again, the researchers describe their different understandings of the gesture. For Bright, the nod is just a greeting but for VanScoy, the nod is a cultural indicator of safety and support.
Additionally, individuals in academia that belong to minoritized groups have been disproportionately negatively affected by the pandemic (Davis et al., 2022) and this is especially the case with research. In a review of research team dynamics during COVID, Nocco et al. (2021) not only discuss the ways that diverse researchers - including women - are differently affected by unprecedented working conditions but also contend that this recent development is just an extension of historic inequities. Helpfully, they offer a framework to help project leaders increase equity on their research teams via compassionate mentorship. These considerations include 1) regularly and publically prioritizing equity on research teams as a normal part of working together, 2) helping teams pivot to alternative projects when needed through appreciative inquiry, and 3) prioritizing team member well-being. In my own research, I was particularly interested in the overall concept of compassionate mentorship, as well as equity and well-being. I have included these in my coding tree. Unlike Nocco et al. (2022), I contend that all team members play a role in the well-being of the team regardless of role. I found myself returning to Nocco et al’s (2022) research over and over again over the course of my study and have not only used their work in my coding, but extended their framework. The new framework is included in Chapter 4: Results and Chapter 5: Conclusion.

Unsurprisingly, few studies have focused on diverse people working on virtual teams or virtual research teams (in fact, I found zero studies in the latter case). Those studies that do exist are largely in the businesses and consider improving business outcomes rather than detailing experiences or improving the working lives of differently situated people.

**Power Dynamics on VRTs**

Now I turn more specifically to the scant research that examines power dynamics on virtual research teams. This section first presents the more general findings on research teams
and virtual research teams before discussing the experiences of diverse people on virtual research teams.

Little research exists examining the role of power dynamics on research teams (Xu, 2022a). That research that does exist strongly lends support to the idea of creating a flattened power structure amongst academic researchers to increase the creativity and rigor of research, as well as to support the well-being of research team members and the institution (Griffeth et al., 2000; Gruenfeld & Tiedens, 2010; Xu et al., 2022a; Xu et al., 2022b). For instance, Xu et al. (2022a) recently described how non-hierarchical research teams are better able to “(1) adapt to unpredicted and creative tasks, (2) create psychological satisfaction, and (3) support coordination” (p. 14).

Although the number of published studies examining power dynamics on research teams is small, authors offer many fruitful avenues for further research based on existing gaps. Some (Griffeth et al., 2000; Gruenfeld & Tiedens, 2010; Xu et al., 2022a; Xu et al., 2022b) call for further investigation of team composition factors as a way to create more effective research teams and organizations. Others call for further conceptualization and theorizing around the idea of power and public involvement (Madden & Speed, 2017; Green & Johns, 2019) to increase democratic participation in science.

Although a good deal of research exists examining the emergence of virtual teams in mostly corporate environments during the past 20 years (Gilson et al., 2015; Scott & Wildman, 2015), little research considers the role of power dynamics on virtual teams much less problematizes the role of traditional power dynamics. This body of research, instead, focuses on managing conflict in order to increase productivity and profits (Brown et al., 2004; Paul et al., 2004; Bhusari et al., 2007; Wakefield et. al, 2008). One study by Panteli and Tucker (2009) does
use power as a main construct and helpfully explores how VTs that share power amongst members in a rotating fashion have higher levels of trust and more team success. Still, the goal of this study is ultimately to improve corporate profits.

Very little work has been done related to general power dynamics on virtual research teams. As with many other areas in this review, a general overall gap exists in the literature on power dynamics in virtual research teams. In fact, a search of “virtual research team” and “power” in the EBSCOhost Discovery service only displayed a total of 18 peer-reviewed articles. Upon further examination of the article abstracts and subject headings, I discovered that only one of these articles was somewhat relevant to my current review. This research by Aydinoglu et al. (2016) examines the amount of disciplinary diversity across 14 virtual research teams using an adapted version of Shannon’s Entropy Index. Although the authors did not include a paper section overtly tying their work to power dynamics, their work does intrinsically consider the question of differing disciplinary power on VRTs. The authors list several specific limitations in their study, including the exploratory nature of their work, the inclusion of only one year of publishing data, and the limited nature of their disciplinary classification system.

As with the general literature on power and VRTs, the research on women, diverse people, and power dynamics on VRTs is incredibly scant. In another EBSCOHost Discover service search of “virtual research team” “power” and “women or diversity”, I only found one relevant published peer-reviewed article that considers women and diverse people in relation to VRT power dynamics. More specifically, Brown et al. (2022) consider lessons learned working on an international team of women researchers during COVID. In this autoethnography, the researchers used a series of open-ended surveys to elicit responses from international academics working during COVID. They found that gender has an effect on expectations around VRT
work, distribution of work, and equitable recognition. The authors reflect on these experiences related to their own work: “This power differential around gender resonated for many of [of us] across [our] experiences in academia” (p. 6, 2022). Although this study is one of the first of its kind, its limitations are many including its exploratory nature, the lack of information around theoretical lenses and methodological approaches outside of “qualitative research” and the use of surveys, and a lack of theorizing around power differentials as a central topic of the paper.

Due to the lack of published research, I can not provide a holistic theoretical or methodological overview or critique for this section of the paper. However, this means that a highly significant gap exists in the literature most directly related to my research question. At the moment, other researchers interested in this area and VRT members looking to analyze and improve power relations on their teams only have a single peer-reviewed resource to help inform their work. My research not only contributed to the literature and will help other scholars, but I also provide practical guidance and suggestions for women, diverse people, and others working on VRTs. This area will remain a critical focus as the general workforce - including academic researchers - continue to both become more diverse and to transition to virtual working arrangements.

**Technology**

As Figure 1 shows, I contend that technology actors mediate local and global power structures as well as the relationships of researchers. In other words, in this study I assumed that technology can act to influence relationships, processes, and resources even though technology has no consciousness. Kline (2003) defines technology in 4 ways: 1) as manufactured artifacts, 2) as the sociotechnical system used to produce artifacts, 3) as knowledge, technique, know-how, or methodology and 4) as a sociotechnical system of use that extends human capacities and
possibilities. In my study, I was mainly interested in the first, third, and fourth definitions and have included these in my coding tree. I was particularly interested in how manufactured high fidelity communication technologies and human knowledge act upon each other to create more resilient VRTs.

**Resilience**

A major theoretical and practical goal of this study was to describe how already successful virtual research teams might contribute to the resilience of the individual contributors and to the ongoing team (see Figure 1). A contested term, resilience is defined by different researchers in a variety of ways including as 1) individual stability across time, 2) individual insight after an adverse event, 3) adaptation of dynamic systems, and 4) the process of harnessing resources to sustain well-being (Southwick et al., 2014). Like many areas in this literature review, the published work on resilience in virtual research teams is extremely scant. Thus, I will briefly summarize the recent literature on resilience in teams, virtual teams, and research teams before presenting the findings of virtual research team resilience work.

First, a great deal of research exists on general team resilience. This is best summarized in Hartwig et al.’s (2020) multi-level model of team resilience based on their large literature review. In this model, the authors demonstrate how individual factors and team level factors interact with team level states and resilience behaviors to produce an emergent team resilience state. Many of these same concepts show up in the literature related to virtual teams, research teams, and virtual research teams.

Turning to the literature on virtual teams, Degbey & Einola (2020) defined virtual team resilience as the ability to work together towards a series of time bound goals with changing scope while maintaining team member satisfaction and cohesion. They found that 3 practices
were critical to the most successful teams: 1) regulating emotions and emotional expression, 2) establishing team rules and modifying these for individual members, and 3) reflective practices. Recent research suggests that virtual team emotional regulation in particular can be successfully mediated through training interventions (Gamero et al., 2021; Holtz et al., 2020; Peñarroja et al., 2022).

Although scant, emerging research on virtual research teams during the early COVID-19 pandemic suggest several key factors critical to team well-being and resilience. Mcclunie-Trust (2022) found five factors that contributed to virtual research team resilience: distributed models of leadership, reflective practices, sharing resources, building emotional bonds and technological competence. Likewise, Lokhtina et al. (2022) found that the reflective practice of journaling was critical to their virtual research team’s success. Thus, like the literature on virtual teams, emerging findings suggest that both reflection and appropriate emotional expression are crucial to virtual research team success.

For the purposes of this study, resilience was a major coding theme and Southwick et al.’s (2014) four definitions served as categories as well as my conceptual definition. Inside each category, codes emerged as I performed interviews, document analyses, and observations. All four categories emerged in my analysis using both Critical Feminist and Actor-Network lenses. At the end of my study, I will present the current research team under study and future research teams with a set of practical suggestions to increase their well-being based on Sotuhwichk et al.’s (2014) work and Nocco et al.’s (2021) framework of team flourishing.

**Addressing The Lack of Research**

Throughout this literature review, I’ve discussed the lack of research related to research teams and virtual research teams more specifically, in addition to the dearth of literature on
marginalized people working on these teams. It is helpful to uncover why this lack may exist to help future researchers. First, researchers would be the ones doing this research and researchers can be hesitant to use their own methods to examine themselves. Hoffman et al.’s (2013) commentary on their own virtual research team autoethnography is relevant here:

Any time researchers take a hard, critical look at the way they (themselves) are doing things and ask ‘Isn’t there a better way, particularly regarding established problems that have been well documented?’ - others (who might in some ways be linked to the dynamics we are trying to improve), might take offense at us asking that simple question. In some occupational settings, questioning the status quo makes you a hero, in others it damns you to hell. (p.483)

Thus, researching research teams can put academics at risk. This risk is likely compounded for researchers from marginalized groups. Second, virtual research teams specifically are a new phenomenon that have only emerged more overtly during the COVID pandemic and have only begun to be studied more fully in the past couple of years. We will likely see much more research in the near future. Finally, as discussed in this review, there are fewer researchers that belong to minoritized groups working in the academy. This lack of representation, along with the complications related to doing DEIR-focused work, likely contributes to the scant research in this area.

3 METHODOLOGY

This exploratory study examined the experiences of a group of diverse woman-identifying educational researchers working together on the Reimagining Citizenship (RC) virtual research team. These researchers were committed to working from a justice perspective in conducting their research, but also in their working relationships with each other.
My study interrogated how a team committed to culturally affirming research practices might apply flourishing practices in their work with each other in a virtual setting, along with the digital communication technologies that work alongside them. Specifically, my study explored what strategies the team co-created to flourish together. My research question is: How do diverse, women-identifying researchers, supported by human and non-human actors, co-create strategies that center equity and support well-being on a virtual research team?

In this chapter, I will first briefly describe the meta-theories that situate my study: modernism, critical theory, poststructuralism, and postmodernism. Next, I will describe how some theorists have conceptualized critical theory, poststructuralism, and postmodernism as not in opposition theoretically or methodologically, but as complementary worldviews that can be used together in empirical research to address different questions. I will then briefly describe the two major theories that I will use for my research - Critical Feminist Theory and Actor-Network Theory - and describe how each of these theories can be 1) used to target different components of the research question in my study and to 2) create a more theoretically and methodologically robust study. Finally, I will discuss how my study addressed theoretical, methodological, and content gaps in the current literature on women, diverse people, and power and teams, research teams, virtual teams, and virtual research teams.

Situating My Study in Critical, Poststructural, and Postmodern Meta-Theories

My study was situated in the conjunctions and disjunctions of critical, poststructural, and postmodern theories. Very briefly, all three of these theories position themselves as responding to the enlightenment-era project of an ostensibly a-political, positivist, modern world, or the idea that scientific investigation can find verifiable truths that can then be applied to progress the human condition. Instead, each of these theories hold that science is yet another site of
value-imbued human construction. First, critical theory is a large umbrella of more granular approaches that all generally criticize the project of humanism as benefiting those in power while claiming to benefit all. For instance, in the early 20th century the Frankfurt School developed a theory around how the false consciousness of capitalism pushes people towards internalizing the values of capitalism and uncritically reifying capitalist production (Agger, 1991). In other words, this form of critical theory is concerned with how our modern economy encourages individuals to competitively strive towards wealth through work, while actually enriching owners, and to ignore more political pathways towards collective liberation. While more modern forms of critical theory continue to question the logic of capitalism and colonization, they focus on the effects of ideologies on marginalized groups. Critical race theory and critical feminist theory, for instance, both complicate the theorizing of the Frankfurt school in ways that are directly relevant to my project. In short, critical race theory, founded by legal scholars of color including Delgado, Bell, and Crenshaw, holds that 1) race is constructed, 2) racism is systemic and systematic, not an aberration, and occurs daily, 3) the civil rights-era legal approach to equality while, ostensibly beneficial to black people, did not actually deconstruct our racist hierarchy even though it successfully reconstructed the overtly racist image of the United States to the rest of the world, and 4) black people are uniquely positioned to speak towards their lived experience of racism (Delgado & Stefancic, 2023). Furthermore, race can not be considered on its own as a marginalized identity; instead, race, class, and gender are all complexly experienced in a non-additive way (Crenshaw, 1995). Derrick Bell, a founder of the field along with Delgado and Crenshaw, further described the importance of experience, the state of critical theory in the world of folks experiencing marginalization, and the status of CRT in the humanist academy (1995):
Comparing critical race theory writing with the Spirituals is an unjustified conceit, but the essence of both is quite similar: to communicate understanding and reassurance to needy souls trapped in a hostile world. Moreover, the use of unorthodox structure, language, and form to make sense of the senseless is another similarity. Quite predictably, critics wedded to the existing legal canons will critique critical race theory, and the comparable work by feminists, with their standards of excellence and find this new work seriously inadequate. (p.48)

Like critical race theory, critical feminist theory (gestured to above by Bell) holds that 1) gender is a construct, 2) gender discrimination is built into our daily cultural systems, not just into our legal systems, and 3) people of particular gender identities are uniquely positioned to speak to their own situation within our discriminatory system. Importantly, the work of black critical feminists in the 1970s and 1980’s like Angela Davis (1981), Audre Lorde (2020), and Kimberlee Crenshaw (1995), considered the non-additive intersections of race, class, gender, and other identity markers in their writing. In other words, one strain of critical feminist theory is intersectional and this intersectional approach will be used in this paper. Crenshaw (2013) defined intersectionality in this way: “Intersectionality is a metaphor for understanding the ways that multiple forms of inequality or disadvantage sometimes compound themselves and create obstacles that often are not understood among conventional ways of thinking”. Although Crenshaw and others brought intersectional ways of thinking to a larger academic and legal audience in the 1970’s and 1980’s, this thinking was not new and was being embraced by black feminist activists outside of the academy historically. For instance, in their 1977 “Black Feminist Statement” the Combahee River Collective, who had already been working together for years, clearly stated an intersectional position:
We believe that sexual politics under patriarchy is as pervasive in Black women's lives as are the politics of class and race. We also often find it difficult to separate race from class from sex oppression because in our lives they are most often experienced simultaneously. We know that there is such a thing as racial-sexual oppression which is neither solely racial nor solely sexual, e.g., the history of rape of Black women by white men as a weapon of political repression. Although we are feminists and Lesbians, we feel solidarity with progressive Black men and do not advocate the fractionalization that white women who are separatists demand. Our situation as Black people necessitates that we have solidarity around the fact of race, which white women of course do not need to have with white men, unless it is their negative solidarity as racial oppressors. We struggle together with Black men against racism, while we also struggle with Black men about sexism. We realize that the liberation of all oppressed peoples necessitates the destruction of the political-economic systems of capitalism and imperialism as well as patriarchy.

(Taylor, 2017, p. 178)

Critical intersectional feminist theory will be explored at length in a later section in this paper. In short, critical race and critical feminist approaches both seek to question and seek solutions to the taken-for-granted ways that assigned human categories give both overt and subtle power to some groups in society while denying power to others.

Second, postmodernism questions the master narratives of post-enlightenment history that encourage the story of scientific progress and the unified self (Agger, 1991). For instance, colonial conquest was once supported by “scientific” theories that promoted White male supremacy. Third, poststructuralism turns its eyes to the question of the modernist uses of language, in particular, in hopes of deconstructing the notions of binary opposites and the
coupling of signifiers and signified (Agger, 1991). Here, the ongoing conversation around sex, gender, gender expression, and sexuality is helpful in thinking through how words have no essential meaning yet may have material affects on every aspect of an individual’s life.

Appendix B contains more information on these meta-theories in the form of tables and visuals. I will also include two visuals in the body of this paper.

Now, I describe how these three theories can be combined theoretically, which will help situate my study within these three meta-theories. Although critical, post-structural, and postmodern meta-theories all contain their own perspectives, concepts, related flavors of theories, and methodologies, Agger (1990) offers a helpful description of how these three meta-theories may be combined to help “attune working empiricists to the ways in which their own analytical and literary practices encode and conceal value positions that need to be brought to light” (p. 121). More specifically, he points to the democratic potential in the reflexivity of critical theory, the rhetorical deconstruction of poststructuralism, and the multiple subject positions opened up by postmodernism. This is exactly the overarching aim of my project as I examine how women and diverse people work within and resist dominant power dynamics on a virtual research team. Below, I have included two visualizations of how critical theory, postmodernism, and post-structuralism might be visualized as working together.

Figure 3

Doug Belshaw’s Venn Diagram of Critical Theory, Post-Structuralism, and Pragmatism
Note. From Open Thinkering, by D. Belshaw. (http://dougbelshaw.com/blog/venn_diagram/).

Copyright 2010 Doug Belshaw.

Figure 4

Intersection of Critical Theory, Social Liberalism, Postmodernism, and Social Constructionism


In my study, I followed Agger’s lead in combining these three meta-theories in the following ways. First, one long-term contribution of my study is to help researchers better attune to their own beliefs, values, and interests and how these might circulate as power dynamics on the research team. Second, in examining spoken and written language on virtual research teams, I hoped to contribute to encouraging scientists and other researchers to more closely examine and
transform the taken-for-granted language of research. Third, in using multiple methodologies, I hoped to expand the possibilities of research in this area.

**Theories: Critical Feminist and Actor-Network Theories**

Now that I’ve introduced my meta-theories and situated my study in them theoretically, I will turn to describing my two main theories and situating my study within them. First, I take up Critical Feminist theory. Since I’ve already described the meta-critical theory previously, I won’t spend much time describing Critical Feminist theory. In addition, Critical Feminist theory can also describe a huge range of different theories that don’t necessarily inhabit a strict “critical theory” paradigm. Second, I take up Actor-Network Theory. Actor-Network Theory is a type of poststructuralist theory (or, postmodern theory, depending on which camp claims it!).

**Critical Feminist Theory**

Critical feminist theory is sometimes an off-shoot of critical theory. According to Coakley (2011):

> Critical feminists focus on issues of power and seek to explain the origins and consequences of gender relations, especially those that privilege men. They study the ways that gender ideology . . . is produced, reproduced, resisted, and changed in and through the everyday experiences of men and women. (p. 45-46)

Although one version of critical feminism is most definitely a type of critical theory concerned with examining gender ideologies, “Critical Feminist Theory” can also contain a huge diversity of thinkers concerned with a range of emancipatory, linguistic, and arts-based projects depending on how critical feminism is defined (or not). In other words, “Critical Feminist Theory” is sometimes also just feminist theory. According to Goodkind et al. (2021), both “critical” and “feminist” are contested terms. However, most Critical Feminist thinkers tend to fall somewhere
within the critical-postmodern-poststructural worldview. Some even “work the ruins” (Lather, 2001) between these theories, just as I did in my own study. Nevertheless, Goodkind et al. (2021) offer a helpful list of common modern feminist research commitments that point to the relational, collective, and liberatory potential of questioning binary conceptions, embracing complexity, and centering praxis (or, the combining of theory and practice).

My own research addressed many of these commitments, including 1) focusing on ways to reduce power differentials on virtual research teams through both interpersonal and structural change, 2) using a “double reading” (see Lather, 2001) method to interrogate my own assumptions and analysis, and 3) focusing on the relationships between women researchers as well as their individual and collective relationships to the project itself.

Importantly, although the all-encompassing umbrella of critical feminist theory allows for a huge diversity of thought and action, not all people working towards a more equitable world have been welcomed as critical feminists either historically or currently. White feminism in particular has a history of racism and exclusion through its discourse and actions, beginning with the betrayal of newly freed black citizens by first wave feminist activists (Davis, 1981) to the second wave white feminist focus on reproductive freedom with no consideration of the history of forced sterilization in the U.S. on black, brown, and indigenous people (Delamont and Atkison, 2004) to more recent conversations around the more subtle exclusion of black, brown, and trans women from large-scale women’s protest movements in the past 10 years (Bolivar, 2022). As a white woman and a feminist myself, I must wrestle with this history and keep the dual oppressive/liberatory potential of critical feminism at the fore as I reflexively consider my own position throughout the study. In this study, I hope to position myself as an intersectional feminist of action, helping to create a more equitable experience and greater well-being for
women working on virtual research teams through flexible practical suggestions and
customizable work aids that are ultimately owned by and crafted by the teams themselves. In this
way, I hope to decenter my own experience.

**Actor-Network Theory (ANT)**

The second theoretical lens that I used was Actor-Network Theory (ANT). Developed by
Latour and his peers in the early 1980s, ANT is a type of post-structuralist and postmodern
theory that specifically examines the development of networks (Müller, 2015). Influenced by
fellow philosophers such as Deleuze, Foucault, and Haraway, ANT developed out of the field of
science & technology studies with the goal of uncovering how networks are established and
dissolved via the sociology of translation (Müller, 2015).

As a type of post-structuralism/postmodernism, ANT advances many of the same
propositions related to epistemology, metaphysics, and philosophy of mind. In ANT, subjects are
called actors. Actors may be human or non-human as long as they act upon others (Latour, 2005,
p.69). As with other post-structural theories, no essential preexisting subjects exist in ANT.
Instead, actors develop in relationship with each other (Latour, 2005, p. 176). Importantly, the
existence of actors precedes the development of the network. Although humans and non-humans
emerge as actors together, there is no essential hierarchy of subjectivity in ANT analysis (Latour,

> It’s not that there is no hierarchy, no ups and downs, no rifts, no deep canyons, no high
spots. It is simply that if you wish to go from one site to another, then you have to pay the
full cost of relation, connection, displacement, and information (p. 176)

In other words, when running an ANT analysis, humans and non-humans are treated as equally
able to act in ways that contribute to the emergence of the network.
Likewise, power is not conceptualized as hierarchical in an ANT analysis amongst humans or between humans and non-humans. Instead, power is relationally constructed as subjectivities emerge and the network is developed (Latour, 2005, p.183). Because the network is constantly shifting, power is also constantly shifting within Actor-Networks. The term “Actor-Network” itself includes a clue to this flat, ever shifting theorizing of power in that it does not prioritize the actor or the network, but instead visually shows them both in relation with each other and as a single entity at the same time by using the hyphen as a connector.

In ANT, emergent systems are called networks. As with actors, no essential networks exist. Instead, the emerging subjectivities of actors create emerging networks as actors work together and negotiate (Latour, 2005, p. 202). So, although no essential networks exist, subjects must begin to emerge before the network can emerge. Like Deleuze and Guattari’s concept of rhizomes, the network may have connections between actors but these connections do not employ order, direction or hierarchy. The network is established through a process called translation (Latour, 2005, p. 105) and it can be observed temporarily by researching it and writing about. In fact, Latour holds that this study that you are reading now is the actor-network - this paper is the visible product of my work and the work of the research team. You are seeing the actor-network at this very moment.

Situating My Study More Specifically in Critical Feminist and Actor-Network Theories

In order to investigate my research question, I used both Critical Feminist (CF) and Actor-Network (ANT) theories. Although these two theories can differ dramatically in their approaches, as Agger (1991) discussed, critical theories, postmodernisms, and poststructuralisms all respond to the prevailing modernist paradigm in ways that were helpful to my research. In this section, I will first describe the current lack of CF and ANT theorizing in the literature
related to power dynamics on virtual research teams. At the same time, I will describe how CF and ANT aligned with my different study aims.

**Filling Gaps in Literature: Theory**

As indicated in my literature review, very little literature has examined the experiences of women, including women with marginalized identities, and marginalized people in general working on virtual research teams. In addition, the literature has not adequately conceptualized power on research teams (Xu et al., 2022a), described what power dynamics are like on VRTs nor how women/marginalized people might counter traditional power dynamics (Brown et al., 2022; Green & Johns, 2019; Hoffman et al., 2013) as differently positioned team members (Mauthner et al., 2010; Tomas and Castro, 2013). Finally, the literature that examines teams (Lewin & Lewin, 1948; Naveenan, & Kumar, 2018; Penland & Fine, 1974) research teams (Ballesteros-Rodriguez, et al., 2020; Liu, et al., 2020; Olenick, et al., 2019), virtual teams (Gilson et al., 2015; Scott & Wildman, 2015), and virtual research teams (Gassmann & von Zedtwitz, 2003; Kratzer, Leenders, & van Engelen, 2006; Hanebuth, 2015) is theoretically homogenous with most research falling into a more positivist psychological paradigm, or, the view that there is a reality that exists outside of our observation and that we can reliably find and measure it. The scant research that focuses on women, marginalized people, and power does tend to use more interpretivist, critical, and postmodern perspectives (Mauthner and Edwards, 2010; Tomas & Castro, 2013; Hoffman et al., 2014; Brown et al., 2022; Thaba-Nkadimene et al., 2022). Thus, my use of both Critical feminist Theory and Actor-Network Theory contributes to a diversification of the literature into more-than-positivist directions.

Like all of these studies, I took a theoretical approach in my work that questions positivist worldviews. Moreover, as in these studies, I took a qualitative, interpretivist approach in my
methods. These two moves aligned with both my primary Critical Feminist theoretical perspective and my secondary Actor-Network theory perspective, along with associated methods that both have in common such as interviews, document analysis, and observation. Moreover, my study meets several of Gilson et al.’s (2015) gaps: a lack of consideration of non-business disciplinary diversity, various ages, social network and communication analysis, high-fidelity technologies, member mobility, and team adaptation. Set in the context of higher education, my qualitative study considered how researchers of different generations and professional levels work with high-fidelity communication technologies across time and space to center equity and support-well being. Thus, this handful of studies provided theoretical, conceptual, and methodological support to my design.

**Developing My Research Question: Theoretical Alignment**

Now I will briefly discuss how each theory contributed to the development of my research question: How do diverse, women-identifying researchers, supported by human and non-human actors, co-create strategies that center equity and support well-being on a virtual research team?. First, Critical Feminist theory works well as an overarching framework that seeks better ways for people to be together and in the world. Looking to Goodkind et al. (2021), my research question embraced intersectionality, focuses on relationships, centers praxis, and reimagines social justice work as care. However, my research question also recognized that humans are *not* the only social actors involved as we work together; instead, non-human technologies such as software, policies, and procedures can also act alongside humans in significant ways. I turned to Actor Network Theory to answer this portion of the question. In using CF and ANT, I filled each of these gaps by 1) applying theory that broadly centers the
experience of women, including women with intersecting marginalized identities and 2) applying theory that traces the relationships and circulation of power within virtual research teams.

One of my overarching study goals was to help women researchers care for each other and themselves. This goal is aligned well with critical feminist theories. Although ANT has not traditionally been combined with feminist theories of care, some theorists have begun to consider how ANT can be used as a more ecological theory that considers how human and non-human actors both act within resilient systems (Brewer et al., 2013; Ainurrohmah, et al., 2022). For instance, Dwiartama and Rosin (2014) examined how non-human actors in an agricultural system - Indonesian rice and New Zealand kiwi-fruit - contribute to the resilience and agency of humans also living in these systems. Although these crops don’t have intentionality, they still affect the actor-network in caring ways that contribute to the well-being of humans. Much like the kiwi-fruit and rice, I suspected that high-fidelity technology actors in virtual research teams also offer constraints and opportunities that have tangible, local effects on the team even though these technologies aren’t conscious. For example, I wondered: How might Google Docs help or hinder the agency of the learning technologies research team as they work alongside it?

**Extending Theory Specifically In The Field of Learning Technologies**

Finally, my work extends theoretical possibilities in the field of learning technologies. Until very recently, research in and about our field has existed almost exclusively in the realm of positivist, modernist, capitalist science (Hall, 2011). Likewise, research results in learning technologies have historically been used as ostensibly value-free tools to improve educational outcomes (Hall, 2011). Although some researchers in our field (Kara Aydemir & Can; Marcovitz, 2022; Pischetola, 2021; Reeves, 2008) and many researchers in other educational fields (Barreto, 2008; Brooks, 2011; Castañeda & Williamson, 2022) have criticized these goals
as at best ineffective and at worst disenfranchising, learning technology researchers have only begun to move towards more critical approaches themselves in the past decade (Marcovitz, 2022).

**Methodologies and Methods**

In this part of the paper, I will detail the methodologies and methods that I used in my study. First I present an overview of my analysis plan and schedule. Then, I turn to describing my critical intersectional digital ethnography methodological framework. Next I detail my site selection, participants, data collection and analysis, ethical concerns, and criticisms and limitations. Finally, I will conclude with a summary. Below, I include a graphic summarizing my overall methods. I will discuss each of these components over the following pages.

**Figure 5**

*Methods Overview*
**Critical Discourse Analysis #1: Gribich's Approach**

First: Identify The Frame
- Structural Elements (How is the document or conversation constructed?)
- Authors & Participants (Who is included & excluded?)
- Discourses (What is included & excluded?)
- Overall Frame (What message does the overall structure convey?)

Second: Textual Elements
- Topics (What topics receive the most attention? How are different topics talked about in different or similar ways?)
- Speech & Writing By Name (Who talks or writes the most? What topics do they focus on? How do they indicate their respective positions of power through speech or writing?)
- Narrative (How does the tale shift over the course of a speech or writing event?)
- Assumptions (What assumptions are taken for granted?)

**Critical Discourse Analysis #2: Venturini’s Cartography of Controversies ANT Approach**

- Identify Local Controversial Statements And Literatures
  - Identify individual/conflicting ontological or epistemological statements.
  - Combine these into larger competing narratives.
- Identifying Local Actors
  - Describe people, processes, policies or technologies that act upon each other in the phenomenon under study, viewing all actors as equally possible of action even if each actor is not equally positioned with resources.
- Describe Local Network Flow
  - Describe how the nature of relationships between actors has changed and shifted over time.
- Uncover Cosmopolis (Ideologies) & Cosmopolitics (Common Reality)
  - Identify the values and meanings that people, processes, documents, and technologies demonstrate.
  - Identify how the values that people, processes, documents, and technologies might create a common reality.
Overall Analysis Plan & Schedule

My data collection and analysis timeline took place concurrently from 8/2023 - 3/2024. This timeline was based on 1) the average amount of time it takes to transcribe 15 interviews - 8 hours per 45 minute interview according to Sutton & Austin (2015), or around 240 hours manually, 2) the fact that thematic analysis can generally take several weeks to several months to perform (Joffe, 2011), 3) the constraint of my full-time job on my timeline, and 4) the fact that I was working with a group of academics that have their own busy timelines, including limited availability over summer. In addition, I performed multiple interviews in this process and needed to allow for some flexibility for my participants.

The site was the overlapping digital and real-life ecosystems inhabited and co-created by diverse women researchers working on a team together, including web conferencing rooms and recordings, shared drives and documents, email, text, and other digital means of communication. The participants included 5 former and current members of a long-term research team along with non-human actors. Data sources included observations of recorded team meetings, one-on-one
interviews, and documents including team created documentation and communication technologies. Instruments & Protocols are available in Appendix C. I analyzed this data in a double reading using critical discourse analysis, first from a critical ethnographic perspective and then from an actor network theory perspective. I used Dedoose as an analytical tool.

**Methodological Framework: Critical Intersectional Digital Ethnography**

In my study, I used a critical intersectional digital ethnographic methodological framework. This methodology aligns well with critical feminist theory and my research question since critical ethnography generally seeks to 1) investigate issues of interpersonal power amongst researchers embedded in a socio-political system in the 2) hopes of changing unhelpful entrenched power dynamics (Ross, Rogers, & Duff, 2016; Merriam and Tisdell, 2015). In addition, I also used an ethnography approach to align with the ANT portions of my research question to map how human and non-human actors act to form networks on virtual research teams.

**Features of Ethnographies and Critical Ethnographies.** The specific features of digital ethnography are similar to those of standard ethnographies and more critical ethnographies, so I will briefly describe these. Ethnography - developed in the late 1800s - is the traditional methodology used by anthropologists and is the basis of academic qualitative research. In fact, Merriam & Tisdell (2015) call ethnography a basic form of qualitative research with its focus on entering the field over long periods of time to perform observations, examine documents and other artifacts, and talk with people who inhabit the community under study. The goal of ethnography is to produce thick, rich descriptions of “the interaction of individuals not just with others, but also with the culture of the society in which they live” (Merriam, 2015, p. 25). On the other hand, “critical ethnography is a qualitative research method that endeavors to explore and
understand dominant discourses that are seen as being the 'right' way to think, see, talk about or enact a particular 'action' or situation in society and recommend ways to redress social power inequities” (Ross, Rogers, & Duff, 2016, p. 4). Likewise, Merriam and Tisdell (2015) agree that critical ethnography “attempts to interpret the culture but also to expose cultural systems that oppress and marginalize certain groups of people” (p. 63). Thus, the goal of critical ethnography is not just thick, rich description, but also social change.

**Actor-Network Theory and Ethnography.** ANT theory and analysis developed as a response to the perceived positivism and orthodoxy of ethnomethodology in the hopes of revealing the messiness of real-life research work in the sciences, and even more specifically, to understand how power circulates in scientific networks (Reid & Russell, 2017; Cresswell, Worth, & Sheikh, 2010). In his field-defining work “Reassembling The Social”, Latour (2005) describes ANT as a type of ethnographic methodology. Like critical ethnography, ANT is a flexible approach and can be “hung” onto other theoretical or methodological traditions. ANT in practice typically uses the same qualitative methods as ethnography - observations, interviews, document analysis, etc. (Rydin, 2012; Tummons et al., 2018; Bussular et al., 2019; Berry, 2021).

Researchers have theorized about the overlaps and discontinuities of ANT and ethnography (Reid & Russell, 2017). Similarities include a focus on anti-positivism, the actual over the ideal, and the role of interaction in creating situated realities. On the other hand, while many critical approaches to ethnography focus on more active political approaches to ideology as explanatory constructs within cultures, ANT as defined by Latour is more concerned with describing the conditions that make networks possible (Reid & Russell, 2017). Moreover, ANT analysis has been used in concert with ethnography or as ethnography in several recent published studies (Tummons, 2018; Berry, 2019; Vokes, 2021). Thus, my “double reading” (Lather, 2001)
approach may also be viewed as two complementary types of ethnography that may inform each other rather than two competing methodologies.

**Digital Ethnography.** Digital ethnography began to emerge as a subgenre of ethnography in the 1990s as humans began to engage closely with new computer-mediated media and environments. Although digital ethnography uses the same basic methods as other forms of ethnography, one crucial distinction is in the changed (and changing) concept of the field. Traditional ethnography bracketed the field as a particular place and bounded time - this is questioned in the case of digital approaches since people do not exist only online or in the real world, but in both always at the same time (Thompson et al., 2021; Reppening, 2022). Digital ethnographies have been performed across many disciplines at this point, from fashion design (Reppening, 2022) to marketing (Thompson et al., 2021) to education (Vazquez-Helig et al., 2021).

Hair (2003) offers 5 steps for engaging in critical digital ethnographies, including identifying proactive communities, negotiating access, conducting digital observations, conducting virtual interviews, and returning results to the community. Thus, the basic procedure for engaging in a critical digital ethnography does not differ significantly from an in-person ethnography. This basic structure can be seen across critical digital ethnographies (Berning and Hardon, 2019; Richter, 2019; Achmad, Ida, & Mustain, 2020; Atuk, 2022). For example, in his study on virtual cruising in Istanbul, Atuk (2022) identified the gay dating app Hornet and its community as his site. As a historical user of Hornet, Atuk was already a community member and contributor; however, he also negotiated more ethical access to participants in the community by reaching out to them to explain his position as a researcher and to invite them to participate, observed 300 anonymized profiles, and interviewed 40 users using the in-app
Virtual Research Team

chatting interface to help flatten the power differential between researcher and interviewee. Atuk (2022) does not discuss how and if he returned results to the community. In my own work, this final step is critical in maintaining a collaborative, more ethical research design as well as in returning actionable strategies to the community of virtual researchers.

**Filling the Gaps: Performing Critical Intersectional Research In A Digital Landscape.** I hope to fill a major methodological gap by performing intersectional research in a digital landscape. Although critical feminist research in the form of critical ethnography has been previously performed in a digital landscape (Keller et al., 2018; Kudaibergenova, 2019; Toffoletti et al., 2021), intersectional research is less prevalent in this area. Recently, this specific gap has been recognized by theorists such as Sharddha Chatterjee (2020), who calls for a queer feminist digital ethnography performed in conjunction with the oppressed, in order to:

- highlight the precarity and violence of their structural conditions, while foregrounding the hope and hopelessness endemic to their world-making, so as to eschew easy interpretations of victimhood, on the one hand, and valorization on the other (p.487)

Moreover, Chatterjee wonders how we might create a *speculative* methodology, weaving both dystopian and hopeful sci-fi stories from our findings. Likewise, Elizabeth Chin (2017) calls for a digital ethnography that centers antiracism and afrofuturism in a speculative landscape. Thus, in this study I hope to extend the field of critical digital ethnography into an intersectional space.

**Site Selection**

My site was not one clearly bounded site; instead, I recognized the overlapping sites of the digital and real life. Here, I draw from the work on the fuzziness of the concept of field in digital ethnography (Thompson et al., 2021; Reppening, 2022) and site as a negotiated outcome in postmodern research (Delamont and Atkinson, 2004). I am particularly inspired by
Reppening’s (2022) digital ethnography examining workplaces of mediation where “humans, connective media platforms, and spatiality implicate each other and merge in the constitution of social, material, and spatial everyday experiences” (p. 221). At the same time, I must artificially limit the types of digital documents, technologies, and interactions that I analyze in order to produce a realistic research design.

The study site is the digital space inhabited by one virtual research team of woman-identifying researchers. More specifically, the “setting” is the digital ecosystem that these women inhabit and co-create, including web conferencing rooms and recordings, shared drives and documents, email, text, and other digital means of communication. However, the participants in this study also live and work in their own particular culturally and politically signified physical bodies, homes, communities, places of work, and parts of the country. This study focused on the co-constructed virtual community site of this virtual research team, but gestured towards these other realities and incorporated them as meaning-making contexts. This “open” field focus reflects the common approach of digital ethnographers (Thompson et al., 2021; Reppening, 2022).

I ethically found and entered the site since I was invited to the site by one of the participants, Ashley. Ashley also provided me access to a trove of digital information as well as initial introductions to the participants. Moreover, Ashley spoke with each participant individually about the study before I made contact. This work by Ashley allowed me the access that I needed to perform the study and develop a rich, complete-as-possible and true-to-life account. Thus, my study met many of Curtis et al.’s (2000) and Madison’s (2020) holistic guidelines on critical ethnographic site selection. Second, following Madison (2020), I created a lay summary of the research design for my participants (see Appendix C). An important
component of my lay summary was participant access to my in-progress notes, transcripts, and analysis so that they could review them and comment on them if they desired. Only Ashley participated in this process, but I incorporated her suggested changes into my analysis. I also already hosted informal recorded meet and greets with all of my participants in the study as the first part of the first interview that they participated in.

**Participant Recruitment**

I selected my participants using purposive sampling since I was seeking a particular set of participants that aligned with the criteria set forth by my research question. The current group of participants were working together on the “Reimagining Citizenship” research project, which aims to “establish the extent to which -- and under what conditions - can antiracist, CSP-based instructional strategies be successfully facilitated in an asynchronous, technology-facilitated environment”. This study was carried out by the team, along with groups of 4 undergraduate student researcher teams enrolled in a technology-focused teacher preparation course.

The human sample was composed of 5 women researchers from diverse backgrounds and with different power positions on the team over time. Table 1 below shows the intersecting demographics of the 5 study participants. I constructed this table based on my conversations with Ashley and through checking with the participants during our interviews. Since I did not get to interview Jessica after she consented to the study, I used Jessica’s references to herself and her work during recorded meetings with Ashley to fill in her demographics. I did not include gender in the table since there was no diversity here - everyone identified as a woman.

**Table 1**

**Study Participants**
<table>
<thead>
<tr>
<th>Name</th>
<th>Years Active</th>
<th>Professional Status &amp; Role</th>
<th>Uni Type</th>
<th>Age</th>
<th>Race and/or Ethnicity</th>
<th>SES of Origin</th>
<th>Parent Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monica</td>
<td>2006-2020</td>
<td>Full Professor, Team Founder, Long-Term PI</td>
<td>Elite</td>
<td>50s</td>
<td>White</td>
<td>WC</td>
<td>3 Adult</td>
</tr>
<tr>
<td>Holly</td>
<td>2015-2021</td>
<td>Staff Research Scientist</td>
<td>R1</td>
<td>30s</td>
<td>White</td>
<td>UMC</td>
<td>2 Adolescent</td>
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<tr>
<td>Ashley</td>
<td>2017-2023</td>
<td>Last PI, Assistant Prof, Wendy’s Advisor</td>
<td>R1</td>
<td>30s</td>
<td>White</td>
<td>MC</td>
<td>1 Young</td>
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<tr>
<td>Jessica</td>
<td>2018-2021; 2023</td>
<td>Post-Doc</td>
<td>R1</td>
<td>30s</td>
<td>Latine</td>
<td>WC</td>
<td>1 Young</td>
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<tr>
<td>Wendy</td>
<td>2021-2023</td>
<td>Research Assistant/PhD Student</td>
<td>R1</td>
<td>40s</td>
<td>Black</td>
<td>WC</td>
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</table>

Although this research team descends from a line of other woman-led and woman-laboring versions of the team dating back to 2006, I choose to focus on the most recent
iteration of the research team in order to limit the large potential scope of genealogical tracing of roles across time. The most recent iteration of the team existed from Summer 2020-November of 2023. This iteration was first co-led by Holly and Ashley and included Jessica as a member. By 2023, Holly had left the team, Jessica was only sometimes involved, and Ashley and Wendy were the major members.

Although I focused on the 2020-2023 iteration of the RC team, I did, however, interview the originating PI that began the overall portfolio of research and I included her thinking in this study. In this way, I was able to map connections between projects, thus carrying out Hoffman et al.’s (2013) urging to examine power dynamics and relationships across time, across projects, and across context rather than focusing on a single project. Further exploration of past and future projects are outside of the scope of this project, but would be fascinating and needed additions as follow up studies. In addition to the team members, other humans and living beings - most notably, children and other colleagues - were important contributors to the work of the RC team.

The study also included non-human actors. These non-human actors included digital technologies, university and departmental policies, and standard research processes. For this study, I chose to focus on 3 major non-human digital communication actors: Google Drive, Cayuse/iRIS, and Webex. Although none of these actors are consenting participants in this study, they are agential actors that affected the work of the RC team in significant ways. Thus I present them here along with the official participants. These actors can also be viewed on the Actor-Network map located on the COC.

In the next section, I describe each RC team member and non-human digital communication actor. For the participants, these are drawn from interviews or meetings and represent a significant reflection that guided my work. These reflections served as a sort of
asynchronous co-theorizing. I then include not only a demographic and historical description of the participant, but their major themes from our interviews. In this way, I recognize the intellectual, emotional, and temporal labor of each woman as they talked with me about their sometimes difficult professional and personal experiences.

**Description of Human RC Participants & Non-Human Digital Communication Actors**

**Description of Humans: Official Team Members**

**Monica:** Monica is the originator of the virtual research team that would become the RC team and led it as a PI from 2006-2020. Unlike the other members of the team, Monica comes from an economics background and has been a full professor for some time. Monica thinks that the team was successful because of a great deal of respect - she spoke about how she and everyone else on the team valued everyone's contributions equally regardless of role. Over the years, Monica took an "integrator" role, ensuring the qualitative and quantitative work was integrated and given equal priority. She supported team members by providing resources and opportunities for them to pursue new directions related to the project. This helped team members like Ashley advance their careers. Monica also emphasized collective goals over individual interests and focused on the impact of their work and greater good, which fostered a collaborative team environment. Monica’s work on the team and in setting up the team was reflective. Part of this reflection was hoping to avoid the negative climate that Monica witnessed and experienced as a PhD student herself. Monica's leadership and emphasis on collaboration, integration and collective impact helped create a long-lasting and productive research team.

**Ashley:** Ashley is the most recent Primary Investigator and leader of the RC team. In 2017, Ashley joined the virtual Reimagining Citizenship research team during the second year of her PhD experience. Although she was assigned to the group and wasn’t initially excited about
the focus on online teaching and learning in a public school district, she soon discovered that the team was a great fit for several reasons. First, the team lead and primary investigator, Monica, treated her like a colleague and allowed her a great deal of autonomy in directing the theoretical and methodological direction of the research portfolio. Second, while exploring different ways to frame the heretofore more objectivist research, Ashley discovered critical approaches to the topic. This discovery led to a paradigm change in Ashley’s approach to her research and reflected the ways that she already understood reality outside of the research sphere. Two of Ashley’s team colleagues, Jessica and Holly, were already well-versed in critical approaches and helped guide her towards reading and thinking as she gained more say in the direction of the team. This new direction and shared approach led to a great deal of productivity for the team. Third, Ashley grew emotionally close to Monica, Jessica, and Holly. As the team lead, Ashley indicated that Monica helped facilitate this closeness by sharing her own life, making space for everyone to share their personal lives during meetings, and actively discussing and pursuing policy to make the lives of graduate students better. At the intersection of policy and the personal, Ashley focused on Monica’s personal support of her while she was pregnant, after giving birth, and during her divorce shortly thereafter. This personal support became program-wide as Ashley and Monica used this example to create more welcoming spaces for parents and potential parents. One result of this shift was the addition of many women of color to the program, many of whom became parents during their PhD experiences. In addition, Jessica, Holly, and Ashley supported each other not only through their intellectual resonance, but also through personal sharing with each other. These relationships all continue today as friendships.

After graduating during COVID in 2020 and then securing a faculty position at a large research university in the southeast, Ashley moved to the southeast with her daughter and
became the team lead and co-PI for the Reimagining Citizenship virtual research team. At the same time, Ashley was working with several other virtual research teams. She had similar experiences with small women-led virtual research teams, but did not find her work with male-led virtual teams to be satisfying in the same ways even when they were equally as productive since she found that male-led teams don’t tend to 1) put people and personal lives first and 2) are more objectivist in project management and approach. She indicated that this was especially evident in the lack of vulnerable personal sharing about children and childcare.

Monica, Holly, and Jessica remained on the team during the first part of this new iteration of the team, conceptualizing projects, doing analysis, and publishing papers with Ashley. Graduate student and Ashley’s advisee Wendy joined the team in 2021. As a team lead, Ashley enacted many of the humanistic strategies that she learned in her time with mentor Monica, along with developing a praxis of research management drawn from critical approaches. As Ashley’s work with Wendy increased, her work with the other team members decreased for several reasons. First, Monica, a prestigious full professor in the field of economics, moved on to other projects and other interests. Second, Ashley found it difficult to secure grant funding as a more junior faculty member. Previously, Monica had been bringing in multi-million dollar grants to help fund the core team members as well as related, but less core, teams and team members. Since Ashley had to make decisions about how to distribute the smaller amount of funding that she was bringing in, she shared the majority of this funding with Wendy. Thus, Holly and Jessica were not funded at the same level that they were previously. Since funding is tied to Holly and Jessica’s ability to work on projects, they were no longer able to devote significant time to Reimagining Citizenship. Ashley and Wendy continued to publish papers together, but Ashley
officially decided to close the research portfolio in November 2023. Ashley and Wendy continue their research relationship on other topics and an emerging portfolio.

**Holly:** Holly was part of the Reimagining Citizenship (RC) team for many years, starting as a graduate student then working as a postdoc and finally progressing to an academic staff role. During her time on the RC, the team consisted mainly of women and worked with various school districts, especially in the midwest. The team was face to face at first - and very small - but a large grant allowed them to expand and become virtual with sites around the country (Chicago, Minneapolis, Texas, California). To aid in this virtual work, the team used phones and emailed documents at first, then expanded to Skype (later Webex) and Box/Dropbox/Google Drive with running notes. This shift towards remoteness and through different technologies reflects shifts in how we work in general in the U.S.

Holly identifies as a cisgender white woman and a midwesterner. She is partnered and cares for her two children and her parents. She grew up economically privileged and doesn’t experience economic stressors in her daily life. A former classroom teacher, she also has always been associated with Large Midwestern R1 University. She indicated that her long history at Large Midwestern R1 University serves as a role mediator as she works across institutions, with Large Midwestern R1 University serving as a privilege in some cases and as a status that placed Holly in a less-powerful position in other cases. For instance, Holly sometimes feels that she has to signal her legitimacy in some contexts due to her role as academic staff rather than faculty. She is a former classroom teacher, which gave her some degree of role power on the team as an expert and folks often deferred to her because of her lived experience/expertise in the hidden curriculum of K-12.
Overall, Holly valued the creativity, humanity, and utility of the team's work. For instance, they tried to create space to reflect critically and question entrenched power systems to improve their critical and culturally-sustaining research. On the other hand, she described how the team faced challenges balancing productivity pressures with humanity and care for each other. Communication technologies like Zoom helped their work in some ways, but also made interactions more difficult to read at times. Holly felt empowered when she was able to propose new ideas that were supported by the team leads. Conversely, Holly talked about a disempowering event when they had to make difficult decisions about partnering with a curriculum vendor that was dismissive of some team members and actively racist against another. To overcome this disempowering event, Holly described how the team discussed clear boundaries for the partnership.

**Jessica:** *I did not get to interview Jessica about her identity, so the following description is based on the description by her fellow RC team members and her own words from recorded meetings. Thus, this is an incomplete description.* Jessica is a postdoc working in an educational research center at the same large Midwestern R1 research university where she recently earned her PhD in Educational Policy Studies. She was part of the RC research team while she and Ashley were both PhD students working with Monica and Holly, but then also worked with the team in 2020 and onward as the team transitioned to being led by Ashley. According to Ashley, Jessica was the most politically radical member of the team and was a major impetus for the switch to more critical approaches to research.

Jessica is a first-generation Latine woman originally from Mexico. I use Latine here instead of Latina or Latinx or chicana since Jessica described her community in this way in one of the recorded meetings. Latine is an easier-to-pronounce in Spanish alternative to Latinx that
also refers to all genders of people. Spanish is Jessica’s first language and she still considers herself an English-language learner. In addition, Jessica is a first generation college student. These intersecting firsts were present in Jessica’s recorded meetings with Ashley as she talked about the difficulties of navigating postdoc life. In addition to post-doc work, Jessica cares for her small child and parents.

Although I did not get to speak with her, in her recorded meetings with Ashley, Jessica embodied many of the strategies and practices that helped the RC team flourish. Most notably, she centered the personal and relational in her conversations with Ashley. Although the two women spent the majority of their meetings strategizing, they also spent significant time talking about their lives and appreciation for each other. This conversation was initiated by Jessica in my observations.

**Wendy:** Wendy is a 3rd year PhD Learning Technologies graduate student at Large R1 Southern City University in the southeast. She is a more recent member of the Reimagining Citizenship (RC) research team – joining in Fall 2021 - and Ashley is her advisor and committee chair. On the team, Wendy has served in many roles and has moved from a novice to a seasoned researcher in partnership with Ashley. Wendy and Ashley have published three articles together under the RC portfolio umbrella and have presented at two conferences using the same data set. Wendy is currently in candidacy, having successfully defended her prospectus in Fall 2023. Although the RC team portfolio officially ended in November 2023, she continues to work closely with Ashley on research and publications.

Demographically, Wendy described herself this way: “So, if you get me through the door, you get a 42 year old black woman who started college right after high school but did not get her bachelor's degree until 20 years later, who's now almost done with a PhD in less than 4 years,
who has not been married or had children, but who was deeply invested in the lives of kids.” She also calls herself a “Detroit Girl”. Wendy grew up in a safe and loving household - she suspects that she was working class despite having what she needed to thrive.

In our conversations, Wendy’s most valued self-care and boundaries to avoid burnout during her PhD journey. In fact, she developed a new concept - *haggard* - during the course of our conversations to better describe the kind of burnout that PhD students and researchers experience. Overall, academia allows Wendy to bring as much of herself as she’d like to share into higher education spaces and to do work that aligns with her purpose as an intentional designer who is also intentionally designed. Wendy’s most frequent codes after analysis were compassionate mentoring (practice), mentoring (value), agency (value), and productivity (value).

*Description of Major Non Human Actors: Project Documentation/Communication*

*Technology*

In an interview, Wendy was integral in helping me understand how the RC team interacted with major technology actors:

Webex is where we figure out, and I think email is where we check in…Webex is planning, assigning, talking through, reflecting, figuring out, encouragement, a place to celebrate, um, email is more of a, hey, this is a draft for a 2nd iteration of this and also, um, hey, I have these questions kind of thing in the interim. [Google Drive/Docs] is writing notes, copies of articles…Everything ends up in Google Docs. We also use Dropbox for things that need to be more secure. And we’ve also used Box.

From Wendy’s list of technologies, I chose to focus on Webex and Google Drive since these were more frequently referenced by other interviewees. In addition, as I reviewed recorded meetings, I found that IRB was a constant consideration. I was able to observe Wendy and
Ashley working on the Reimagining Citizenship IRB together in the iRIS research portal system as they shared their Webex screens. This provided me with a unique opportunity to see how these two researchers with different positions and positionalities interacted with this important non-human actor and each other. In conjunction with this observation, Ashley gave me IRB-approved access to the completed IRB application so that I could analyze the software and document itself. I will now describe each of the three major non-human technology actors.

All three technologies broadly act in administrative capacities and have replaced some - or all - of the labor of human workers that the RC team might have included in the past. First, both Google Drive and Webex act as administrative assistants. Although Wendy and Ashley do much of the intellectual and project management labor in Google Drive, Drive automatically creates hierarchical, searchable, interoperable filing systems. Google Drive is a low-fidelity tool, or, a low barrier to entry, text-based tool that is easy to understand and use. Webex, a much higher-fidelity tool than Google Drive, acts as a much higher-fidelity assistant as it hosts, records, and transcribes meetings. In addition, Webex has replaced the work of live human transcribers and sign language interpreters with its machine generated closed captioning. iRIS, on the other hand, acts as a sort of basic research analyst and secretary that “asks” proposal writers questions that align with NIH guidelines and then serves as a communication go-between for researchers and the research office. iRIS is the oldest and most low-fidelity tool amongst the three tools, but the only required tool that the team interacted with. They simply would not be allowed to proceed with their research without engaging iRIS.
**Google Drive (Low Fidelity).** Google is, of course, one of the most powerful and wealthy companies in the world. Google is valued at 1.8 trillion. Google Drive is a proprietary, for-profit cloud-based file management service that launched in 2012. It contains several applications - Docs, Sheets, and Slides - and all of these applications can synchronize across devices that are logged into a Google Account. Importantly, all applications in Google Drive are live and are viewable, comment-able, or editable by multiple users that have access. This functionality gives users the ability to work together in real time on the same document instead of sending versions back and forth via email or another communication system. In addition to real-time editing, all Google applications have a “History” feature so that users can view or roll back to previous versions. Google Drive integrates with other products owned by Google - like Gmail, Google Calendar, and Google Photos, creating an ecosystem of applications that encourages users to remain in the Google Ecosystem.

Since modern technology companies collect user data to enrich themselves, it’s important to understand how data collection and privacy work across the tools that the RC Team used. Of the 3 technologies I chose, Google Drive is, unsurprisingly, the company collecting the most data from the RC team. According to Nathan Daniels (2023):

- Google…reads the contents stored in your Google Slides, Sheets, Docs, and other stored information to “personalize the experience”…the company explicitly states that they do not use this information for advertising…Google has an “Abuse Program” in place for some of its services. According to them, this program aims “to curb abuses that threaten our ability to provide these services.” They also state: “We may review content for violations of these policies and take action.” In other words, it seems Google can just
review your documents as they see fit, with the reasoning that this is to protect some greater good. It is unclear to us how often these reviews happen. However, we can only assume that, if Google wanted to, they can use these reviews to get tremendous amounts of data on their users.

In the case of Google, then, the RC team’s Google Drive may have been scanned and read; however, we don’t know how Google may be using this data.

Although Google Drive is not a toolset supported by the university, the RC team used Google Drive for much of their work together, including developing meeting agendas, working on articles, and creating conference presentations. I was able to observe the team using Google Drive together in several recorded meetings. Wendy and Ashley frequently talked about their reasons for using Google Drive, as well as their love of the software. According to Ashley:

It lowers the barrier for new team members to participate and a lot of the stuff we're sharing with research partners….everyone knows how to use the shared Google Drive folder and they know how to do, like, Google word processing with it…Dropbox and Box and things like that are not intuitive…sending around our documents by email - that's difficult. Google word processing…there's not a lot of barriers to using the technology that we're using. Um, it's probably not the fanciest way to do it, but it works.

Wendy concurred, “We love a Google Doc!” For this study, I considered the team’s use of Google Drive and reviewed the document “Student Voice Meeting Agendas 1-4” (SVMA). I chose this document because it contained a great deal of interaction via comments and suggestions. In addition, the document was originally created and owned by Wendy, but intended
as a dual training tool for Wendy and an instrument to collect data for the Reimagining Citizenship research project. Thus, Ashley was also heavily involved in the development and iteration of the doc. Moreover, this document was directly related to the documents that I analyzed in Cayuse iRIS and Webex. I will describe these next. Overall, the Google Drive document appeared to be a rich site to examine power, professionalization, and mentoring in an asynchronous virtual environment.

**Figure 6**

*SVMA #1-4 Example Comment and Sample Version History*
**IRIS (Low Fidelity).** IRIS is a proprietary, for-profit software that many universities use to route and communicate about research studies as they move through the IRB process. IRIS was a product of iMedRIS until 2021, when it was bought by the competitor Cayuse (Cayuse, n.d.) The history of iMedRIS and IRIS is murky - the original company webpage is now defunct - but their LinkedIn page indicates that they were founded in 2001 (Linkedin, n.d.). The description of IRIS from 2002 (Relias Media, 2002) matches many of the current functions of the version that Large R1 Southern City University uses. A copyright statement on the IRIS login page for Large R1 Southern City University indicates some basic information about the version: “Copyright © 2001-2020 iMedRIS Data Corporation, All rights reserved. Version 11.02.1 Build 251 Updated 2020/03/20 16:36”. This statement indicates that Large Southern has not updated the software in four years. A review of help documentation and how-to videos clearly indicates that the new version of the software is vastly different and simpler to use than the version that Large Southern uses (Using Cayuse, 2024). As a research tool, Cayuse iRIS is in the business of privacy and offers a robust “Trust Portal” that explains the ways that they protect
data and respond to incidents; however, many of the documents on the portal are private. Cayuse also has to adhere to federal research regulations on data privacy. At the RC team’s university, iRIS is accessed through multi-factor authentication and single sign on.

I chose to focus on this software because the RC team used IRIS several times over the course of their work together to submit for IRB. For instance, in a 12/2022 recorded meeting, I observed Wendy and Ashley using IRIS together to review the Reimagining Citizenship IRB proposal that Wendy wrote as Wendy shared her screen. The RC team - and the IRB - gave me access to this IRB submission so that I could see their interactions with the software within the software itself, as well as how the software and the IRB office constrained and opened up possibilities for the RC team.

**Figure 7**

*Reimagining Citizenship IRB Application in iRIS*
**Cisco Webex (High Fidelity).** Cisco, another publicly-traded mega-corporation, is worth $197 billion and, much like Google, has many products that it has absorbed over time. Cisco Webex is the official video conferencing platform contracted by Large R1 Southern City University. It is used for meetings, courses, and workshops across the university. It offers a variety of features, from the ability to record to chat to breakout rooms to screen sharing to polling and more. Like Google Drive and IRIS, Webex is just one part of a connected ecosystem of tools and is owned by a publicly-traded company, CISCO. Webex offers a trust portal that includes detailed information on data privacy (Webex Meetings Privacy Data Sheet, n.d.). Webex claims that it does not:

- Produce decisions that would result in legal or other significant effects impacting the rights of data subjects based solely by automated means.
- Sell your personal data.
- Serve advertisements on our platform.
- Track your usage or content for advertising purposes.
- Monitor or interfere with your meeting traffic or content.
- Monitor or track user geolocation.

Thus, unlike Google, Webex does not appear to exist to sell user data; however, like Google, Webex does track usage and it does “process” the following user-generated data to “Provide you with the Service”:

- Meeting Recordings (if enabled by Customer)
- Transcriptions of Meeting Recordings (optional, only applicable if enabled by you)
• Uploaded Files (for Webex Webinars and Training only)

• Whiteboard content (optional, only applicable if enabled by you)

Although Webex uses dual-factor authentication, it is unclear how the RC team’s meeting data has been scanned by Webex.

All recorded meetings that I observed were held inside of Ashley’s Webex room. In almost all cases, the meeting attendees used their cameras and audio for the entire meeting.

Many times, they viewed other documents in a separate application while they worked together. Occasionally, they shared their screens. A few times, the team members referenced putting information into the chat. I was unable to see this behavior since the chat is not recorded; however, using the chat is an extremely common function in virtual meetings.

Figure 8

Webex Meeting Example Provided By Webex

Instrumentation, Data Collection, & Analysis

I carried out interviews, observations, and document analyses to explore my research question. I carried out one historical interview with Monica and three rounds of interviews with Wendy, Ashley, and Holly; as previously indicated, Jessica was unable to join the interview process but she did consent for me to review recorded meetings that she appeared in as well as documents that she contributed to. In the first round, I used a semi-structured interview protocol (see Appendix C: Study Instruments and Protocols). According to Merriam (2009, p.89), this type of interview aids the researcher in developing interview questions for follow-up semi-structured interviews. Since my research area is under-theorized, this first set of interviews not only aided in creating rapport, but also aided in focusing my follow-up interviews, as well as my overall study. I tweaked my second and then third set of semi-structured interview questions using my initial analysis of the semi-structured interview transcripts, along with insights from my continuing literature review, research project document analysis, and recorded meeting observations.

All of the interviews were carried out using a constructionist interview conception. In this conception, both interviewer and interviewee co-construct data together and the interview is “but one cultural event within the life-world of the participant” (Roulston, 2010, p. 60). Furthermore, in this conception “data provides situated accountancy on research topics - that is, particular versions of affairs produced by particular interlocutors on specific occasions” (Roulston, 2010, p.61). I used my coding tree and critical discourse analysis guidelines for meeting observations.
since I was reviewing transcripts only in my analysis (See Appendix C: Study Instruments and Protocols). I used this same analysis procedure with documents.

In addition to using critical theory and critical ethnography guidelines to develop my methods, I considered postmodern theory and ANT theory specifically as I developed my instruments in order to carry out the ANT analysis. For instance, both my interviews and observations used a protocol that is informed by Venturini’s cartography of controversies (2009).

For example, when I interviewed human actors, I asked questions that aligned with constructing the teams’ actors, networks, values, disputes, and ideologies without using too much jargon or these exact terms (See Appendix C: Study Instruments and Protocols); Moreover, I was flexible with each participant as I asked these questions, used their own language from earlier in the interview, or helped clarify when needed rather than sticking to a rigid question formulation. Since the cartography of controversies process is linear and each step feeds into the next, I was able to construct actors, networks, values, disputes, and ideologies in turn as I asked these questions in order during the interview; however, the participants had inevitably already touched on each of these topics in the first portion of the interview that was aligned with my critical ethnography focus. Then, as I analyzed using ANT, I considered how to analyze and represent emergent actors versus the Actor-Network given the tensions of representation, voice, and identity in postmodern theory. I coded all data first using a thematic analysis approach, identifying actors, networks, disputes, and ideologies across my sources and then used the Cartography of Controversies framework to develop the data into a visual story. Although the end point of a Cartography of Controversies can be “common realities”, I do not claim to have arrived at this point in my study. Instead, I was able to construct common ideologies that shifted across time.
**Data Collection, Storage, and Analysis Technologies**

I performed interviews from 8/2023-12/2023. At the same time, Ashley collected a large selection of recorded Webex meetings, recorded meeting transcripts, and team project management documents, lesson plans, proposals, and manuscripts. She stored these in a secure Dropbox drive. I downloaded all of these documents using a secure, encrypted connection and then reuploaded them into my secure, encrypted institutional Dropbox account.

All data was stored in a secure, institutional version of Dropbox. This data included interview questions, recorded interviews, interview transcripts, recorded meetings, meeting observations, and relevant team documents to be analyzed. Interview data was stored in deidentified folders by participant while recorded meetings and meeting observations were stored in deidentified folders by date and by participant. All participants were given pseudonyms and the code sheet for these pseudonyms only exists in a locked desk drawer in my home office.

Participants had private, password-protected access to their individual interview Dropbox folders so that they could review interview questions ahead of time, view interview recordings or transcripts, view my initial analysis, and provide feedback as desired. Only Ashley provided feedback. Recorded meetings and transcripts were organized in folders by date and by pseudonyms of meeting participants. Documents were organized in folders by topical document name and pseudonyms of contributors.

I used a combination of Dropbox and Dedoose to perform my analysis procedures. First, after each interview, I read through my notes and transcripts in Dropbox, commented directly on the transcript, and developed custom questions for the followup interview. After completing all 10 interviews, I uploaded all interview transcripts into Dedoose for thematic coding. After thematic coding, I returned to Dropbox and developed a critical discourse analysis across all
interviews using Grbich’s method (2013) and Venturini’s method (2010) while referring to my code tree code count analysis in Dedoose.

With recorded RC team meetings, I first read through all 36 transcripts in Dropbox. I chose 9 meetings to review further. I chose these based on time and activity. First, I wanted to review the first and last appearance of each team member - Ashley, Holly, Jessica, and Wendy - so that I could observe consistencies or changes to their interactions over time. Second, I chose meetings where the team members clearly and visibly interacted with other technologies so that I could observe how the human and non-human actors related in real time. After reviewing video transcripts and choosing 9 meetings to observe, I watched the videos that accompanied the transcripts and commented directly on the transcript. I then uploaded the transcripts to Dedoose for thematic coding. After thematic coding, I returned to Dropbox and developed a critical discourse analysis across all observations using Grbich’s method (2013) and Venturini’s method (2010) while referring to my code tree code count analysis in Dedoose.

With documents/communication technologies, I placed the Google Drive files and webex recordings in Dropbox - I used iRIS itself and took screenshots inside of the tool. I read through all documents, and chose 3 related documents to analyze more closely. These documents were a Student Voice Agenda Google Doc, Reimagining Citizenship project iRIS IRB application co-creation transcript in Webex with screen sharing, and the Reimagining Citizenship project IRIS application collection of related documents. I then performed a critical discourse analysis of each document using a combination of Grbich’s method (2013) and Venturini’s method (2010) and then an overall critical discourse analysis of all documents using the same method. I present these three critical discourse analyses independently later in this paper since they each illustrate major strategies that the RC team used to better flourish together alongside technology actors.
After thematic coding and critical discourse analysis on my sources of data, I then developed a visual Cartography of Controversies across all sources of data using Venturini’s visualization method (2012). Both the thematic coding and the critical discourse analyses informed this work and helped me develop the visualizations. In this way, I did a double - and sometimes a triple - reading of the data. I developed the Cartography of Controversies analysis in visual form in Miro.

The table below indicates the sources of data that I used. A longer version of this table can be viewed in Appendix A.

**Figure 9**

*All Sources Of Data*

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<td>Interview</td>
<td>Holly - 11/10/2023</td>
<td>Holly and SH</td>
</tr>
<tr>
<td>Observation</td>
<td>8/19/2021: Project Kickoff Meeting</td>
<td>Ashley, Wendy, and Holly; Community Partner</td>
</tr>
<tr>
<td>Observation</td>
<td>9/27/2021: Strategy Meeting</td>
<td>Ashley and Wendy</td>
</tr>
<tr>
<td>Observation</td>
<td>10/25/2021: Strategy Meeting</td>
<td>Ashley and Holly</td>
</tr>
<tr>
<td>Observation</td>
<td>10/28/2021: Project Overview Meeting</td>
<td>Ashley and Wendy</td>
</tr>
<tr>
<td>Observation</td>
<td>01/11/2022: Mentoring Meeting</td>
<td>Ashley and Wendy</td>
</tr>
<tr>
<td>Observation</td>
<td>06/08/2023: Project Overview Meeting</td>
<td>Ashley and Jessica</td>
</tr>
<tr>
<td>Observation</td>
<td>6/20/2023: Project Report-Out Meeting</td>
<td>Ashley and Wendy - Jessica joins later</td>
</tr>
<tr>
<td>Observation</td>
<td>7/18/2023: Project Strategy Meeting</td>
<td>Ashley and Jessica</td>
</tr>
<tr>
<td>Observation</td>
<td>8/23/2023: Project Reflection Meeting</td>
<td>Ashley and Wendy</td>
</tr>
<tr>
<td>Document</td>
<td>Ashley’s Shared RC Team Google Drive Folder/ Student Voice Agenda Google Doc</td>
<td>Ashley and Wendy</td>
</tr>
</tbody>
</table>
Overall Analysis Procedure

I analyzed two main categories of data in this study: 1) documents created by the team within communication technologies (Google Drive and iRIS IRB application) and 2) transcripts from meeting observations and interviews I conducted. For this study, my artifact examination only consisted of recorded meetings and documents from the most current iteration of the research team (2020-2023) given that past iterations of the team did not work under the assumption that an outside researcher would examine their work. This affected what artifacts I chose to include in my study. In fact, the current PI - Ashley - has been storing the current research group artifacts specifically for the purpose of my study. Thus, I did not have access to a complete archive of all past RC team recorded meetings and team documents. This same kind of archive is most likely either 1) not reconstructable for past iterations of the team under the past PI or 2) reconstructable only with a great deal of labor for past iterations of the team.

First and Second Cycle Coding Procedures

According to Saldaña (2016), “because each qualitative study is unique, the analytical approach used will be unique…two or more [coding methods may] be needed to capture the complex phenomenon or processes in your data” (p.69). This was true for my study as well. In first cycle coding, I first used my a priori coding tree to holistically code the data as I read through interview transcripts and recorded meeting transcripts. I chose a holistic coding approach - which “grasps basic themes or issues in the data ” (Saldaña, 2016, p.166) - since my study area is under theorized and my study is exploratory. The quantitative flexibility of holistic
coding is also recommended for studies with many types of data sources (Saldaña, 2016). At the same time, a holistic approach aligned well with my aims since I started with some basic assumptions of what I would find based on my literature review and had developed a flexible a priori coding tree based on my broad literature review.

Although holistic coding can be used to code large chunks of data - such as entire transcripts, analytic memos, or documents - I chose to use Saldana’s (2016, p. 266) “middle-order approach, somewhere between [whole document] and line-by-line” (p.266). Since my interviewees were telling stories, this method worked well to chunk these stories into smaller units and code each unit (Saldaña, 2016). At the same time, in analyzing meeting transcripts, I tended to code larger chunks of data since meetings typically covered less ground than my interviews and I used these other sources as secondary sources of data. After using holistic coding on my first pass through the data, I discovered that my initial a priori coding tree was insufficient to capture all concepts relevant to my research question and methodology, so I developed a revised tree. This tree continued to evolve as I coded and recoded the data. For instance, I further refined my codes during first cycle coding by coding for values so that I could use these in my later critical discourse analysis.

In second cycle coding, I used elaborative coding or “the process of analyzing textual data in order to develop theory further” (Saldaña, 2016, p. 255). I chose this coding process since elaborative coding “is appropriate for qualitative studies that build on or corroborate previous research and investigations” (Saldaña, 2016, p.256) and one of my major goals was to build on Nocco et a.’s (2021) model of compassionate mentorship. In elaborative coding, “theoretical constructs emerge from the themes of the coded data that are then grouped together into categories” (Saldaña, 2016, p.256).
The thematic analysis of meeting and interview transcripts involved a close reading to construct codes, categories, and then themes related to local and non-local cultural power dynamics as Grbich (2007) describes above. I did this work in Dedoose using my apriori coding tree, but also added codes to the tree as I coded to use in a second pass-through of the data. Figure 10 shows an example of how I did this coding work in Dedoose.

**Figure 10**

*An Example of Coding in Dedoose*

Critical Discourse Analysis Procedures

Next, I performed two critical discourse analyses. Following Grbich (2013), I identified the frame and then interpreted the text across my sources of data. My sources of data for this portion of the analysis were the aforementioned documents, but also the thematic analysis drawn from the interviews and meeting observations. I also looked back at the interviews and meetings themselves as needed to clarify my analysis further. I then repeated this discourse analysis from
an ANT perspective, mapping “cartographies of controversies” (Venturi, 2009) from a more postmodern ethnographic perspective. Representationally, the critical intersectional feminist discourse analysis is presented as text while the ANT discourse analysis is integrated into the critical feminist discourse analysis, but also presented as a series of mapped visualizations on Miro. Following Venturini (2010), my cartography of controversies contains the following components: 1) a map of the actor-network, 2) a chronology of dispute, and 3) a table of cosmoses. Although Venturini also recommends 1) a glossary of non-controversial elements related to the phenomenon under study, 2) a collection of raw data from the study, and 3) a scientometric map of the literature, these components are already described at length in the literature review. In addition, Venturini also recommends a tree of disagreement; however, I found this component redundant and did not use it since it contained the same items as the chronology of dispute. The following examples drawn from Venturini (2010) demonstrate how a few of these visualizations can look. I used these examples to develop my own mappings, although my attempt is much simpler. Please note that these were translated from French using Google Translate:

Figure 11
In this way, I performed a “double reading” (see Lather, 2001) or an analysis of data using one theory or methodology and then a reanalysis of the data using a second theory or methodology. I did this to interrogate my own assumptions and analysis as I worked through all stages of the research process from question generation through instrument development through
analysis and reporting. This questioning not only reflects my dual, overlapping commitments to more emancipatory critical work and the more deconstructive moves of post-thought, but was also intended to produce a more robust analysis that includes thick, rich descriptions and more pragmatic opportunities for change. Moreover, using more than one methodological approach is supported in the literature as a way to create more complete qualitative descriptions (Maggs-Rapport, 2000; Hood, 2016).

Per Grbich (2008), my final paper includes actionable strategies to help reduce unhelpful power dynamics on virtual research teams. In addition, my paper is formatted to include multiple voices and the actual words of my participants instead of just my descriptions and analysis (Grbich, 2008). This polyvocality also aligns well with the way that my secondary methodology, Actor Network Theory, is typically presented (Delamont & Atkinson, 2004).

**Trustworthiness**

Unlike quantitative studies, qualitative studies do not establish their “truth” through reliability and validity measures. Instead, qualitative researchers use a variety of techniques to establish temporary, subjective, contextual truths. From a more traditional qualitative perspective, these techniques include triangulation, thick description, and member checking (Saldaña, 2016). More postmodern perspectives, on the other hand, establish temporary truths through reflexivity, decentering the objective researcher and author, recognizing the position of the reader, and recognizing the limitations of sampling within a more chaotic worldview (Saldaña, 2016). Since I sought to do a double analysis in my study, I chose to include both traditional and postmodern techniques to establish truth:

- My findings were triangulated across multiple data sources - interviews, documents, and observations.
● I use thick description throughout my analysis, including in my analysis of documents and technologies.

● I performed member checking and co-theorizing during and across interviews with my interview participants. In addition, I sent early individual analyses to each interview participant for their feedback. Unfortunately, only Ashley responded. However, the co-theorizing was rich during the interviews and helped decenter my power role as interviewer. I also include individual recognition of theorizing and research contributions by participants within this paper instead of collapsing their thinking into my own.

● Across my forms of data, I knew that I had reached data saturation when no new concepts emerged from my analysis (Sargeant, 2012).

Since I am using critical and postmodern thinking, I also must recognize that my account is never true or complete beyond my own analysis and capturing my analysis here. More pragmatically, my account is bounded by accounts from team members from a particular iteration of the team who agreed to participate. Many, many potential participants were not included in this study and their stories remain unknown. Moreover, my constructionist approach to interviewing questioned truthfulness and completeness since these interviews were “but one cultural event within the life-world of the participants - particular versions of affairs produced by particular interlocutors on specific occasions” (Roulston, 2010, p.60-61). Arriving at true and a complete account of the truth would suggest an alignment with more positivist ways of approaching this study. Instead, I must wrestle with the complex intersections of power that circulated between the participants and between the participants and me. Each participant in this study made choices in how she represented herself in interviews and in her recorded interactions with her teammates based on her shifting position as a research team member.
I think about GRA Wendy the most when considering shifting power and truth. When she originally agreed to participate in this study, she was still taking classes, teaching as a T.A., teaching English in Rwanda on a Fulbright scholarship, and actively doing research with her supervisor and advisor Ashley. By the end of this study, Wendy was in candidacy and was a much more established researcher with several publications and presentations. In other words, although she was still a GRA, Wendy was in a safer, more secure spot in her degree and in her research. But, still, she depends on Ashley and her department to help her complete the program. I wonder: How might Wendy's position as Ashley’s advisee and employee have influenced her participation? Her interactions in the recorded meetings? How might she answer interview questions differently once she defends her dissertation? After she secures a position? In addition, Wendy did not care to discuss her intersectional identities in contrast to Ashley’s so it’s difficult to postulate how their very different positions in the world influenced Wendy’s experience.

Moreover, in my study results presented later, I constructed two concepts that suggest that the women researchers actively construct intersectional truths on research teams that may have affected my ability to construct a more complete picture. First, all researchers that interviewed with me identified as Midwesterners and all researchers spoke about how “Midwest Nice” behaviors are used to diffuse conflict, even where this conflict is productive. They questioned their own behavior, hoping to arrive at true kindness rather than Midwest Nice, but actively wondered if they were unconsciously using this regionally specific set of behaviors to avoid potential confrontation on the team. Most critically, Holly and Ashley, both white researchers, wondered how Midwest Nice aligns with white supremacist behavior such as the “right [for white people] to be comfortable at all times”. I wonder: Was Midwest Nice used during my interviews? In the recorded meetings that I watched? In the documentation that I read? Second,
Wendy spoke about bringing a partial identity to her research and emphasized this as advice for other burgeoning researchers: “For people who feel like you have to hide a part of yourself or shrink to fit into the space, or in some instances, change, I would say, learn to always be 100% who you are even if the 100% you present is not all of who you are”. Wendy’s advice gets at a critical question for my research in thinking about truth and completeness: If at least one of the researchers that I interviewed is actively resisting bringing all of who she is to the team, then how are Wendy and the other members editing their interactions with each other, interviews with me, and documents that they developed together? These complications all question my account and open up fruitful pathways for future research about researchers.

**Ethical Concerns**

All research designs have ethical concerns and this study is no different. First, my research is conducted within the academy. This system of knowledge production simultaneously questions and reifies supremacist ways of knowing and doing in ways that can harm marginalized communities and research participants that come from these communities (Henderson & Esposito, 2017). In fact, most researchers are studying “sideways” or “down”, not up, so participants almost always come from a position of less power (Henderson & Esposito, 2017). These harms can and do exist even when researchers follow government-mandated no-harm guidelines; after all, the authors of these guidelines fail to include participants in their creation. Likewise, academics - even those who follow government-created harm avoidance regulations, even those working from an equity lens, even those who come from the communities that they represent, even those who do qualitative research - reap material rewards like grants, stipends, job security, promotion, and prestige while participants go uncompensated (Henderson & Esposito, 2017). In other words, although both researchers and their participants contribute
labor towards research studies, participants do not benefit from their labor; instead, researchers benefit on the backs of participants. According to Henderson & Esposito (2017), researchers have an ethical responsibility to recognize these potential harms and move towards ameliorating them even within a supremacist system.

My study was originally initiated by Ashley as a way to investigate ethical practices on the research team. Ultimately, they decided that an outside researcher was more appropriate to lead this investigation. This particular study is embedded in situated ways of knowing or the epistemo-ontological stance that truth and knowledge is contextual and mediated by differing power relations and positions. Moreover, since this is an intersectional study, I recognize that different actors in the study are differently positioned by social and political forces while still maintaining their individual autonomy. This approach to ontology and epistemology, then, makes the search for true knowledge and a perfect ethics a shaky and impossible proposition.

Instead, in this study I sought to construct a temporary map of the lifecycle of a research team over time. This map necessarily includes multiple truths and ways of knowing. In this mapping, I must, however, be constantly aware of the sticky ethical questions that innervate this work. Some ways that I tried to reduce power dynamics and protect anonymity included:

- Giving participants access to their own transcripts and related materials only
- Sharing the final paper with participants so that they may have a say in what is included
- De-identifying participants through pseudonyms and inviting participants to choose their pseudonyms (Esposito and Evans-Winters, 2022). Of the participants, Wendy took me up on this invitation while I chose the other names.
- Employing an ethic of humility, “shifting our self-concept from authority to learner…our concept of work from one of probable efficacy to one of probable error…[and
recognizing] that we probably need our subjects/participants more than they need us” (Henderson & Esposito, 2017, p. 11-12) while openly recognizing that research benefits the researcher more than participants (Henderson & Esposito, 2017).

- Asking interview participants what they hoped to get out of the research, along with areas of discussion that they’d like to avoid.

- Co-theorizing with participants during interviews and after sharing my emerging analysis. Giving individual participants credit for this co-theorizing. Recognizing individual theorizing in the structure of my manuscript. I will also invite participants to work on future studies with me as co-PIs and first authors.

- Staying grounded in Laham’s et al.’s (2011) CRRRE stance:
  - Gaining socio-cultural consciousness
  - Developing an asset-based framework by seeing all participants’ backgrounds as opportunities for research
  - Developing the commitment and skills to act as agents of change responsible for creating environments for all participants to be successfully heard
  - Creatively navigating varied participants’ communication styles and preferences in order to co-construct knowledge
  - Utilizing the individual participants’ stories to expand and build a research knowledge base and acknowledge researcher perspectives
  - Committing to seek the good through research (Ellis 2007) instead of only telling deficit narratives
  - Employing reflexivity throughout the research process (Finlay and Gough 2003; Hertz 1999)
○ Cultivating culturally responsive relationally ethical research practices

Allen (2017) echoes many of Laham et al.’s (2011) commitments and identified 5 major ethical concerns: reflection and reflexivity (or, the ability to reflect on taken for granted ways of thinking and acting), accountability, positionality (how the researcher’s intersecting identities affect the study), deconstruction, and social change. My research addressed each of these concerns in the following ways.

First, I addressed reflexivity and positionality by presenting my own positionality statement and by including myself as a participant in the analysis. My positionality statement not only reveals my own background, but also my relation to the research. I also added myself as a voice in my study during analysis without centering my voice. This helped address positionality since the research topic involved an examination of power differentials. My study necessarily examined the power relations between me and the participants along with the participants’ relationships with each other.

Second, to increase my own accountability, I provided an early working draft of my data and findings to all participants for their individual contributions so that they might check my understanding and the ways that I represented them, providing additional insight where needed. More specifically, individual participants only had access to their own thoughts. If a participant asked for a particular insight to be kept private, I planned to ask if the insight might be partially revealed or anonymized in the manuscript. If a participant disagreed with my analysis, I planned to consider this disagreement and note it in the manuscript where appropriate, but I ultimately made final decisions on interpretations of data. Only Ashley took me up on this offer. However, since I provided a copy of this manuscript to my participants, they were also able to choose to
pushback on my interpretations before the dissertation was published several months after they received it. In this way, I respect their voices as equal authorities to mine.

Third, I performed a deconstruction of my own analysis by doing two critical discourse analyses of my data. This “double reading” is similar to methods used by Patti Lather (2001). In this way, I critique my own assumptions and analysis.

Fourth, the RC team had access to my working analysis for individuals via a secure institutional Dropbox folder. This means that the team could use any findings that they found relevant in real-time and immediately apply them to their team. In this small way, I hoped to contribute to social change at the micro-level.

**Positionality Statement**

All parts of higher education are imbued with power differentials (Gibson et al., 2014). This study is no different and, thus, I must interrogate my own identities to align with the spirit of this work. I am a White, New Orleans Creole and southern, 40-something very recently upper middle-class cisgender heterosexual partnered woman from a low-SES background now working in a well-paid leadership role in higher education. This affords me with a great deal of stability, including health insurance, a pension, vacation, sick leave, and free tuition. In fact, I was able to take off significant time to do my data collection, analysis, and writing of this dissertation.

Theoretically, I come from a tradition of critical and postmodern theories. Thus, I came to this work with the assumption already that objectivity is impossible and, moreover, that any attempts to align my work to a positivist, objectivist worldview is contrary to the nature of this work. Instead, critical theories complicate the modernist, scientific tradition as a site of reality-constructing power that has different effects on differently positioned individuals. The critical tradition undoubtedly influenced my findings.
In addition to my identity, I think that it’s important to reflect on my positionality in relation to the study participants. First, the current project leader, Ashley, is my advisor and dissertation chair in my Phd program. In addition, Ashley also advises and supervises Wendy, one of the other study participants, fellow RC team researcher, GRA, and one of my Phd peers. Thus, in this instance, power necessarily circulates differently and diversely between us as we take on and shed our different and diverse roles as workers, researchers, peers, subordinates, and authorities. As I learned more about the different study participants and they learned more about me, our positionality with each other undoubtedly shifted.

For instance, I felt a few areas of identity tension and many areas of resonance (Holly’s concept!) as I talked with Holly, Ashley, and Wendy over our three interviews. I was always aware that Holly and Ashley, both white women with secure careers like me, were from much more economically secure backgrounds and that they had achieved a level of prestige in their education that I never will due to different opportunities. I have worked in higher education now amongst folks from middle and upper middle class backgrounds for many years now, though, and can easily “pass” as someone from a similar background - my whiteness has always been an asset in this passing and has undoubtedly helped me to climb the career ladder at the universities where I’ve worked. At the same time, I was surprised to find that Holly was a staff scientist instead of a faculty member. As staff in leadership positions that straddle the line between faculty and staff, we were able to bond and commiserate over the oddness of rankism and roles and the need to legitimize yourself after, gasp, someone finds out that your aren’t faculty, but that you can do - and do do! - many of the things that faculty do. In a surprising area of commonality, I discovered that Wendy, Holly, Ashley, and Monica are all midwesterners and, in my wonderings about the intersection of midwestern identity and research work, we were able to find surprising
parallels between the many midwests, the many souths, and how outsider perceptions might construct us as researchers and laborers. I felt particularly resonant with Wendy during our interviews together since we are the same age, in the same PhD program, both from working class backgrounds, and had alternate and longer pathways towards our college degrees. In Wendy’s stories, I saw many of my own even where we are differently positioned as white and black researchers and women. Moreover, Wendy’s way of expressing herself in stories that interweave theory, her own life, art and science, speculative futures, and larger cultural events reminded me of some of my favorite writers and researchers. At times, I felt like I was chatting with Donna Haraway!

**Boundaries and Limitations**

**Theory**

Theoretically, both feminist theory and actor network theory have received criticism. One major historical criticism of Critical Feminist Theory is that it essentializes the category of “woman” (Lather, 1995; Miller, 2000), thus reifying a binary system that perpetuates dominant discourses. However, more modern Critical Feminist researchers (Goodkind et al., 2021) do not maintain a woman-centric version of feminist work and instead work to abolish gender binaries altogether. As previously discussed, feminist theory in general - including critical feminist theory - has participated in racism, trans-erasure, colonialism, and other violent and exclusionary practices (Davis, 1981; Delamont and Atkison, 2004; Bolivar, 2022)

Like most postmodern and post-structural approaches, ANT is criticized as potentially not recognizing the historical power structures that differently and materially affect individuals or groups who have been coded as “other” even if identities are actually socially constructed (Whittle & Spicer, 2008). ANT is also criticized for not effectively recognizing the sustaining
role of historically marginalized identities in surviving and thriving (Whittle & Spicer, 2008).

ANT theorists respond to these criticisms by pointing to the fluidity of ANT and its hybridity. In other words, Latour and others don’t view ANT as using any one “pure” approach (Latour, 2005, p. 107).

Methods

Methodologically, the critical/intersectional/digital/ethnographic approach I have chosen has also received criticism. As with all interpretive qualitative research methods, generalizability, reliability, and validity are often cited as problems when viewed from a more positivist position (Anderson, 2010). Qualitative theorists would answer these criticisms, though, by pointing out that qualitative research does in fact ensure credibility through different means such as data triangulation. Moreover, ANT has been specifically criticized as not historically offering a clear methodology; however, methodologists like Venturini (2009) have more recently developed novel and practical frameworks for carrying out ANT analyses.

In addition, my study is exploratory. My sample was also very small, although it included all members of the RC team from 2020-2023 as well as the historical founder. A major limitation of my study is that, although Jessica agreed to participate, she had to pull out of the interview portion of the study and did not participate in member checking. Thus, I only heard Jessica's voice in her recorded meetings. This was unfortunate since Holly and Ashley talked about Jessica a great deal, citing her thinking and their relationships with her as a major turning point in the historical path of the team.

4 RESULTS

Structure Of This Chapter

In this chapter, I present the results of my thematic analysis, my critical discourse
analysis work, and my visual cartography of controversies analysis. Instead of presenting each analysis separately, I interweave these into one analysis, revealing mundane and surprising intersections. I also zoom in on the non-human actors several times and present separate analyses of Google Drive, Cisco Webex, and Cayuse iRIS within this larger analysis. Thus, this chapter is a meta-critical discourse analysis - an analysis of many analyses.

I center interviews and recorded meetings in my results, thus centering the voices of the women that participated in this study. At the same time, I add in the effects of non-human actors - including Google Drive, iRIS, and Webex - as agential actors working alongside the human actors on the team. I include individual critical discourse analyses of these technology actors and the ways that they worked with the team in Strategies 3 and 5. The Cartography of Controversies can also be viewed as a standalone, interactive series of visualizations on Miro although I refer to these findings in the written narrative below. The standalone resources not only provide some additional transparency into my results, but provide alternative pathways for readers to follow in alignment with my concurrent postmodern commitments. This alternative and optional pathway gestures towards research on hypertextuality and polyvocality in critical analyses (Thimm, Chaudhiri, and Mahler, 2017).

I organize my results around the 5 major strategies that I constructed from the data, along with practices related to these strategies. The 5 major strategies are:

1. Prioritizing Equity
2. Prioritizing Well-Being
3. Prioritizing Agency and Ownership
4. Prioritizing Personal Lives
5. Prioritizing Long Term Growth (of projects, teams, and people)
The first two of these strategies are drawn directly from Nocco et al. (2021) while the last three are original to my research.

**Pragmatic Work Aid For Research Teams**

The main goal of my research was to determine what success strategies the RC team members co-created and developed together to help each other flourish. Nocco et al.’s (2021) strategies were a major inspiration for this work and I used their work as a basis for a portion of my original code tree; however, Nocco et al.’s strategies (2021) are aimed at PI’s mentoring graduate students. My work, in contrast, considered a multi-role research team composed of faculty, graduate students, staff, and those in post-graduate positions. In addition, I was not interested in one way relationships in my work; instead, I hoped to uncover how team members, and other supportive human and non-human actors, work together to create a successful team working through an equity lens. Thus, a goal was to uncover how Nocco et al.’s strategies might apply to a team where members are co-creating partners rather than hierarchical laborers. In my work, I confirmed that many of Nocco et al.’s (2021) strategies do apply across roles and in different directions. Another goal was to develop a new version of Nocco et al.’s work aid as a pragmatic support for diverse virtual research teams working through an equity lens. In Chapter 5, you will find the original work aid for faculty mentors, along with my updated version using the information above. A description of this work aid can also be found in Chapter 5.

**Constructing Stories In A Critical Discourse Analysis**

I will now present the results of my analysis, which includes the co-theorizing of my participants. Before turning to these stories, I want to present some basic information about the interviews since I center these in my results. Grbich’s (2013) critical discourse analysis questions are a guide here and throughout the rest of Ch 4.
The interviews took place from August 2023 to November 2023. All interviews were 1.5 hours long. I interviewed Monica one time to gain historical context and Wendy, Ashley, and Holly 3 times each. As previously described, Jessica was unable to participate in the interviews. The participants all answered the same semi-structured set of questions over the course of the 3 interviews (See Appendix C), but I developed custom questions for each participant for interviews 2 and 3 based on the preceding interview. Each participant received their custom questions for interviews 2 and then 3 before the interview so that they could review these ahead of time. By creating custom questions and providing these ahead of time, I not only followed emerging findings in my qualitative analysis, but also hoped to flatten some of the power imbalance between me and the participants. In addition, these custom questions reflected an emerging finding of the study: The importance of individual personalization, agency, and ownership. Thus, my emerging interview process intersected with the study itself.

As I continued to interview the participants and the participants described the complex network of human and non-human actors who impacted the RC team, I realized that many potential authors and participants other than Jessica were absent from my interviews. These included direct, official actors like the corporate partner, the school system community partners, former members of the team from earlier iterations of the RC team, and student evaluators who had participated in a project alongside the team. However, the RC team members also discussed other unofficial but agential actors at length, such as the children in their lives, other research teams that they have been or are a member of, and special friends on these teams. Non-human actors - other than Webex! - were also absent from my interviews as well, although frequently mentioned, including technologies, processes, and policies.

During the interviews, I performed my role as interviewer by keeping track of the time,
checking in with participants 1-2 times about their level of energy and ability to continue, asking planned questions, asking follow-up questions, listening, providing non-verbal affirmation, using agreement sounds and words, clarifying, summarizing, and occasionally adding small stories of my own. The participants talked for the vast majority of the time and stayed “on topic”, although their responses were sometimes surprising and lengthy. Different participants did have differing self versus other orientations in their responses. For instance, Holly talked the least about her life outside of the RC team while Wendy talked the most about the intersections between her personal and professional lives. Time-orientations also differed, with Monica and Holly both providing long-term historical views of the team while Ashley provided a more medium term perspective and Wendy focused almost exclusively on her time with and relationship with Ashley.

**The 5 Flourishing Strategies**

Now, I turn to the strategies themselves and the intersectional stories that the RC team women told and enacted in interviews and meetings. Non-humans accompany the RC team in these tales. Although I present 5 discrete flourishing strategies, these strategies and, especially their accompanying practices, are not discrete - the RC team constructed these holistically. I use this artificial construction myself to create a pathway for readers and readers will see many overlaps between the different practices. These overlaps reflect the overlapping personal and professional relationships, theorizing, and work of the team.

**Strategy 1: Prioritizing Equity On Research Teams**

The first strategy is “Prioritizing Equity On Research Teams”. “Prioritizing Equity” is a strategy suggested by Nooco et al. (2021) and was defined by the authors in this way, “Equity does not mean treating everyone equally. It means providing resources and flexibility based on
individual needs and defining expectations based on individual goals and experience separate from PL (project leader) career goals” (p.5). I build on this definition in my own work: In this study, equity means gathering and distributing resources over time based on evolving needs and goals within a critically conscious worldview. This definition recognizes the critical commitment of the RC team within a complex system that seeks to resource many different beneficiaries, including graduate students and community partners. Nocco et al. (2021) identified the following equity practices in their work:

- Regularly talk with project teams about JEDI [Justice, Equity, Diversity, and Inclusion] as a normal part of team meetings/activities
- Authentically elevate BIPOC scientists, support speaking up every time against racism in conservation culture, listen and believe BIPOC scientists when they share their stories, and do not expect BIPOC scientists to assimilate to white spaces
- Encourage white, non-Black, and non-Indigenous team members to organize and participate in activities to work on how to be better allies/agents of change and remove the extra burden on BIPOC of having to educate white team members to be anti-racist
- Intentionally incorporate the work of BIPOC of all or no genders and white women conservation scientists into seminars, journal clubs, and citations
- Encourage team members to amplify and participate in joyful, awareness-boosting events on social media, such as #Black- BotanistsWeek, #BlackBirdersWeek, and #LatinoConservationWeek
- Discourage the culture of toxic masculinity in conservation by renaming happy hours as social hours to decentralize alcohol consumption
● Conduct risk assessments, discourage the braggadocio nature of proclaiming and rewarding physical feats of strength, and condemn physical or existential risk-taking related to field work

In my work, I confirmed that Prioritizing Equity was a major contributor to the RC team’s flourishing. The RC team incorporated several of Nocco et al.’s (2021) suggested practices into their own work, including 1) regular anti-racist work by white team members/leaders, 2) centering and giving real credit to the intellectual and experiential contributions of BIPOC women members as BIPOC women researchers, and 3) working from an equity perspective in their research and talking regularly about this perspective. The only two practices that the team didn’t incorporate - renaming happy hours and rewarding risky field work behavior - weren’t relevant to the RC team. In addition to confirming several of Nocco et al.’s (2021) suggested equity practices, I found evidence that the RC team practiced these additional equity practices:

● Developing an intentionally reflective practice that centers equity

● Intentional code switching by white women in leadership positions

● Working across roles and positionalities to uncover hidden curriculums of preparation and professionalization and sharing this intel widely

● Reflecting on cultures of origin and regimes of productivity that affect differently-positioned researchers

● Centering their experiences as women

● Sharing the burdens and joys of feminized caregiving through personal stories, emotional support, and material support
• Identifying and combating the effects of rankism on the team through cross-role partnership

Turning to the Cartography of Controversies, these practices were complicated by several open disagreements/disputes that always structured the work of the RC team:

• How can the white women on the team take on anti-racist work work while also centering the voices of minoritized women on the team?
• How can we support team members with different roles and different career pathways?
• How can we balance personal and professional flourishing?

Likewise, shared team ideology and values flowed amongst and between the members of the team, creating paths forward and moments of pause. The most relevant ideology here is: *We can create a better team, discipline, and society by using critical approaches and an equity lens.*

The following shared team values, developed through my thematic analysis of all sources of data, contributed to the construction of this ideology: Relationships and Social Good. As indicated in the full coding table in Appendix A, Relationships contain subvalues such as friendship, care, mutual support, and kindness while Social Good concerns subvalues like changing policy, creating culturally relevant and affirming experiences, equity, and resourcing people and communities.

I will now present evidence for these practices, values, and disputes using the stories of the RC team members, along with all of the other actors that helped them - and sometimes hindered them - along the way. Across all interviews and in many of the meetings that I observed, Jessica, Wendy, Ashley, Monica, and Holly discussed their own intersectional identities, how they code switch between these identities and the identities of others (or not), and how intersectional reflective practice aids in their work on the RC team. Below, I present some
of their stories about doing identity and identity work. I will replicate this model in the Strategies that follow this one, with interviews, documents, and observations interweaving into strategic narratives.

“Going From House To House”: White Women In Power Doing DEIR Work

Together And Allyship Work On Diverse Research Teams: A growing body of evidence suggests that code switching - or “[minoritized people] consciously or unconsciously modify[ing] the way [they] behave in mostly White environments to dissociate oneself from negative stereotypes” is harmful to minoritized workers and graduate students (Neikirk et al., 2023; Rolle et al., 2021; Spencer et al., 2022). In particular, Black women experience extreme stress as they code switch in professional environments (Spencer et al., 2022; Cain et al., 2023). Although minoritized professionals have developed strategies to cope with these stresses, these strategies tend to be individualistic and up to the harmed individuals to carry out. We know that wide-scale policy change at all levels and society level anti-racist work is the solution to abolishing the need for grinding code switching. But, what can research teams do today to increase the well-being of minoritized colleagues? One strategy is for white researchers to decenter themselves and to do the difficult DEIR and allyship work themselves.

Ashley and Holly - two white women in leadership positions on the most recent iteration of the RC team - talked about DEIR and enacted allyship frequently in both our interviews and in their recorded meetings together. Importantly, they did much of this work together instead of doing it with Jessica and Wendy. The extant literature overwhelmingly suggests that, like code switching, expectations for minoritized folks to take on DEIR work is harmful (McGinn & Niemczyk, 2020). Thus, this work by Ashley and Holly may have helped lessen some of the
daily work that Jessica and Wendy have always done and continue to do to survive in a racist society. I found that Ashley and Holly did DEIR work and allyship together in these ways:

- They constructed and discussed their own privilege together as white women in power from economically secure backgrounds.
- They discussed the discriminatory experiences of Jessica together and reflected on their own responsibility versus Jessica’s agency and expertise.
- They helped illuminate the hidden curriculum of academia in their many discussions with Jessica and Wendy.
- They decentered themselves and centered the contributions of Jessica and Wendy.

First, Ashley and Holly discussed their own privilege together. Holly and Ashley both indicated that white women have always held positions of power as PIs, co-PIs, or team leads on the RC team. As part of their work together, the white women on the team have wrestled with their own privileged identities together. Critically, Ashley and Holly understood whiteness as an invisible identity. According to Holly: “White people tend to not identify themselves [as having a] racial identity, because it's like the water [that they’re in]. White people are swimming in whiteness”.

I was able to observe this work in a team meeting from August 2021. In this meeting, team members Ashley, Holly, and Wendy met with representatives from their community partner school district to strategize about a pathway forward with or away from a racist online course vendor. After the meeting, Holly and Ashley stayed on the call to debrief. Their conversation focused on whiteness, white privilege, and racism. Holly and Ashley began by reflecting on how white-led organizations co-opt equity language to keep paying clients, promising change but never actually delivering, especially at times when social justice movements can quash
profitability. Ashley reflected, “We've talked about this, but like, how a for-profit vendor reacts to major political social context around racism and structural racism i.e. summer 2020 and then doesn't embed actual changes in policies and practices and structures”. They then pivot to their own team experience, reflecting again on a racist incident that they all witnessed between the online course vendor and Jessica (this incident is described in detail later in this paper) and how the community partner is now starting to have disrespectful encounters with the course vendor as well. In thinking through potential harm, Ashley and Holly reflected:

Ashley: Part of me is like, why am I part of a research project that's, like, exposing people to that?

(Talk through the options and continue to come back to Jessica as a first gen Latine women who has expressed experiencing racist interactions continuously)

Holly: I do trust Jessica’s lead on, you know, when she says, I still want to be a part of this, I defer to her on that but to your point, like, I also, you know, again, like, when do we hit our absolute, our, um, what's the term we’re using?

Ashley: Yeah, like, when is it just too much and, like, not worth it?

This work was reflected in my individual interviews with Ashley and Holly. In my interviews with her, Ashley touched on several themes related to whiteness and told several stories illustrating her position to her whiteness. Each of these stories contained practices that other researchers might take up as they explore the intersection of their own identities and their work as equity-focused researchers:

● **Story 1:** During her PhD, Ashley began to work on uncovering her own invisible white privilege in conversation with Holly, another white woman and researcher. They focused
on making whiteness overt and talking through their own positions as white women researchers in positions of power and how they might do less harm in their work.

- **Story 2:** Ashley has struggled with how to use black theorists in her work as a white woman researcher. She still considers how to position herself from a place of humbleness, never claiming full understanding and always considering that she is probably misusing these theorists.

- **Story 3:** Ashley and Holly more specifically worked through their position as white women researchers working in a black school district. For instance, they committed to making sure not to create deficit narratives in their work in order to contribute to socially good policy decisions.

- **Story 4:** As a team leader, Ashley purposefully opens up space for minoritized researchers when they are in a less powerful role or are the quantitative minority on a research team.

- **Story 5:** When Ashley is on a team with minoritized researchers, but she is not a team leader or is in the quantitative minority, Ashley steps back and stays quieter to allow for minoritized researchers to lead conversations.

Holly told similar stories in our interviews. Much like Bright and VanScoy (2021), she focused on the limits of understanding as a qualitative researcher and a white woman working with critical theory and in Black spaces, reflecting, “[as white women] how we can even understand what we're looking at and how we’re understanding what we’re asking?”. Like Ashley, Holly hopes to make her position as a white woman overt as she practices intersectional self reflection and, more publicly, in her writing. Holly described how, over time, the team began to include statements about their whiteness and their economic privilege as limitations in their published
work. Likewise, Holly described the experience of being a white woman researcher, embodying some of the thoughts and strategies expressed by Ashley:

I've grown over time in terms of understanding what that means in how I design research questions, how I come into a research site, you know, like, I've done a lot of observations of classrooms in Midwestern public schools. And many, many, many times I was the only white person in the room and I was the one with the computer in the back of the room. Right. And so I'm, you know, like the, the gaze of the white lady in the back of the classroom taking notes and even, no matter how many times you say it, like, “I’m not here to observe you, I'm here to look at the, like, these things happening in your classroom”, it’s always going to be the white lady in the back of the room.

Although Holly and Ashley did a good deal of work uncovering their white privilege and making this overt in their research designs and in their writing, Holly pointed out that class wasn’t explored as an intersecting privilege marker:

Doing data collection and analysis we’re in spaces where the young people in the buildings were not coming from economic privilege. And, to be honest, we weren't as explicitly, like, as a team we didn't address that as explicitly, like, where we were all coming from, in terms of our understanding of how...wealth, income, class plays into our own understanding. Um, we, we talked about it, but...I'll own it myself. I didn't...I don't think I thought actively about it as I have, like, my white woman status or identity.

In addition to doing whiteness and privilege study on themselves together, Holly and Ashley discussed equity and intersectionality frequently as a critical component of their RC team work. I was able to observe them doing intersectional work in the recorded meetings that I
observed. For instance, in an August 2021 meeting, Holly and Ashley talked through a curriculum evaluation from an intersectional perspective:

Holly: Where is intersectionality in any of this? Like, not only just in the concepts of diversity and pluralism and intersectionality, [but] like language and race and then ethnicity and disability, you know?

Ashley: Um, [and] what do these labels mean? And how did they come into being and why do they continue to have, like, relevance to people? And then what are the implications for, like, policy - That's the citizenship question, right? Not just that this exists, but like, what is the implication for the world you live in the critical thinking and application piece?

Holly: Totally like, why is this okay? Great: You've got a couple of slides on diversity.

Ashley: By giving a pie chart in Word, right?

Holly: Right. It's like people who say they do, uh, like critical race work, because they talk about sub-populations…like by race and ethnicity in their, you know, quantitative analysis.

Ashley and Holly also frequently discussed the experiences of less privileged team members. For instance, they frequently discussed how Jessica - a first generation college student and a first generation Latine woman - experienced frequent racism, sexism, and xenophobia during her time at Large R1 Midwestern University. They thought through how Jessica had developed strategies to survive through these experiences, but how Jessica was exhausted from this survival. Ashley and Holly not only recognized the labor of Jessica as she code switched and faced racist behavior daily, but also reflected on how they could actively work to help Jessica do less code switching. Moreover, they both talked about talking with Jessica about the hidden
curriculum of white upper middle class academia. I witnessed this work between Jessica and Ashley in a recorded meeting as they discussed the hidden assumptions of an academic journal that had rejected Jessica’s work:

Jessica: …Maybe it's like an English language learner thing. I don't know, but the call said, “Send in a chapter from your dissertation, or an article that you're working on” and I was like, oh, I'll just send him a chapter, but, they meant like, if you wrote a dissertation that had 3 articles in it, ready for publication, right? Because there's the presentations, right? Oh, well.

Ashley: That sounds confusing to me too. Okay.

Jessica: So, it's not just me. Okay. Yeah.

In addition to doing work around uncovering the hidden curriculum of professional expectations, Ashley also talked many times about how to encourage and uplift the contributions of Jessica and Wendy: “In thinking about centering voices and valuing their voices as much, if not more [than mine]...giving an extra space for people who just, like, within the power structure of a research team, might have less voice”. A major way that Ashley tries to make this space is through centering intellectual contribution during the entire lifecycle of a project:

I give them opportunities to think about the design and critique what we're thinking and give opportunities for them to be, like, drafting and thinking about, like, coding and analytic memos and having, like, the intellectual contribution. And sort of like, valuing that as much if not more when, when creating the storyline of how our research is going to be shared out.
This centering not only looked like centering intellectual contributions, but was also pragmatic. For instance, Ashley reflected on her role in helping Jessica and Wendy build their research portfolios: “[I was always] ensuring that they had the option [of], but have yet to have anyone take me up on, like, 1st authoring. No, one has been up for that yet”. Wendy recognized Ashley’s centering and support over and over again in our interviews:

It's been enjoyable. I've been able to learn a lot. And be more affirmed in the things that I do really care about that I know that I really want to speak to. Um, because I've been able to focus on those things throughout all of this. It's never been like, “You do this, you do this, you do this”. It's never been like, authoritarian in any way. [Ashley has always asked], “What are you interested in? What do you feel called to do? Do you want to learn something else? How does this benefit you?”. Every step of the way that I feel like that has been an underlying question. How does this benefit you today? And in general.

Here, Wendy actively recognizes how Ashley helped scaffold her experience through centering Wendy’s interests, values, and goals. Though Wendy recognizes her work with Ashley as centering and anti-authoritarian, she never brought up her own multiply marginalized identities in relation to Ashley in our interviews. I didn’t press Wendy to follow this line of thinking in our talks together since, as many researchers have pointed out (Guillaume & Apodaca, 2022; Han, Scull, & Harbor, 2021; McGinn & Niemczyk, 2020) this work is daily, tiring work for academics like Wendy. Here, I wondered if Wendy’s work with Ashley was a place of rest from this work? Or, perhaps the power relations circulating in my study itself - with me as the white researcher, with Ashley as our advisor, with Ashley as Wendy’s supervisor - precluded this kind of talk for materially important reasons? These are open questions and Wendy has no responsibility to answer them.
Although I found a lot of evidence suggesting that Holly and Ashley did a great deal of equity work together that benefited the team, I found it telling - and appropriate - that Holly questioned how well that they did this work:

What conditions prompt us to be purposeful? Like, what do we do as teams to make space? To be purposeful or put structures in place…Around culturally responsive practices, because at the core of culturally responsive practices is reflection and is, you know, systems like questioning and thinking about systems and equity and, so, we have to create space for them...how did we do that? How did we create purposeful space? I don’t know if we did.

“I Lose Something If I Pull Them Away”: Bringing Evolving Holistic Selves To Research. While Holly and Ashley worked to interrogate their whiteness as allies on the team, and to construct their own positions as white researchers working with minoritized researchers, Wendy and Jessica complexly wrestled with a broad range of options related to their identities on the research team and beyond. Since Wendy and Jessica are already experts in theorizing their identities - they live them daily just as Holly and Ashley do - one of their main tasks in academia is to strategize on how they might bring their identities with them or not. This wrestling reflects the work of Cain et al. (2023) who found that minoritized workers can not safely bring their whole selves to work. In fact, they found that Black workers that do are punished by a lack of opportunity and promotion.

Wendy reflected this complex theorizing about how to be and how to become on the team, at Large Southern, and in the wider world. Echoing the work of Pittman (2010), Wendy resisted - and continues to resist - a simple, demographic summation of her history and of herself as a graduate student and a person, including in our conversations during this research project.
Even when Wendy stated her intersections unprompted during one conversation, her desire to complicate assumptions about herself and her community created a rich character that I wanted to get to know more deeply:

So, if you get me through the door, you get a 42 year old black woman, who started college right after high school but did get her bachelor's degree until 20 years later. Who's now almost done with a PhD in less than 4 years from that. Who has not been married or had children, but who is deeply invested in the lives of kids.

“If you get me through the door” suggests that Wendy views this basic demographic and historical information as just that - basic. Unlike Holly and Ashley, Wendy most often chose to describe herself in holistic terms rather than by thinking through her intersecting identities.

Wendy described herself several times during our interviews in complex and evocative ways:

I am a person that believes in living an embodied life and having a fully embodied experience. I am a person that believes in intelligent design and so my embodied experiences with my particular design are purposeful and if they’re purposeful, I lose something if I pull them away”.

Here, Wendy presents a case for not always shining a light on her positionalities - if she does, she will “lose something” of her “particular design”. Conversely, Wendy also describes herself as always becoming rather than fixed in her identities: “I am forever changed by each interaction”. Instead, throughout our times together, Wendy constructed a complex history and future of herself as a student, a scientist, a researcher, a designer, a traveler, a community member, and a caretaker always enmeshed in the cultural milieu.

In addition, Wendy actively resisted simple deficit narratives about herself and her communities. For instance, she described herself several times as “a Black girl with extremely
positive public education experiences” and told me childhood stories about her many years as a science fair participant and as a member of a group of entrepreneurial children that pitched ideas to corporate sponsors. This story is especially illuminating since it epitomizes Wendy’s confidence in moving in spaces with more powerful others. As she reflected on her early success, Wendy constructed herself as an always-scientist and proposal-developer, two roles that are critical to the work of a researcher. Over and over, Wendy described how people that she encounters are surprised by these stories of flourishing.

Wendy’s slippery, changing, aesthetic, and embodied description contrasts with the more overt and discrete stating of positionalities presented by Ashley and Holly during this study. In addition, while Ashley and Holly’s self-description, self-theorizing, and storytelling was more in line with their critical theoretical commitments, Wendy’s style of communication and self-presentation is more postmodern in her muddying of binaries and her complex interweaving of personal and professional stories. It seems to me that Wendy’s desire towards wholism reflects her lived expertise in examining her intersecting identities and the ways that they construct and are constructed by her. Like this study, the RC team individuals, then, construct multiple readings of themselves and their work together as they shift between using critical and postmodern approaches to their work and themselves.

Finally, Wendy offered this practice for other researchers: “For people who feel like you have to hide a part of yourself or shrink to fit into the space, or in some instances, change, I would say, learn to always be 100% who you are even if the 100% you present is not all of who you are”. This advice reflects the research around the complexities of being an academic as a woman, as a black woman, and as a person from a working class background (Dock-Flipek & Stone, 2021; Guarino & Borden, 2017; Hanasono et al., 2019; Haney, 2015). In addition,
Wendy’s thinking here intersects with two later Strategies that I’ll present in this paper - Prioritize The Personal and Prioritize Agency and Ownership. In Wendy’s theorizing, I wonder: How might researchers think through how to be authentic while performing only as much of themselves as they choose? How does this thinking affect differently positioned researchers? How might it be protective? How might it be harmful?

“Beautiful Things Come Out Of Detroit And I Am One of Them”: Reflecting on Complicated Midwestern Identities As Black And White Researchers: An unexpected identity that emerged during the study was regional identity and, specifically, Midwesternness. Monica, Wendy, Ashley, and Holly all identify as midwestern and pondered this identity as a contributor to the ways that they worked together on the various iterations of the Reimagining Citizenship Team. In particular, they wondered how cultural expectations of behavior towards others might have influenced their work together.

Ashley, Wendy, and Holly all provided definitions of Midwestern from their own unique positions. According to Ashley, who grew up in Skokie, IL, a majority minority community of immigrants from all over the world, “Midwestern is, like, hyper friendly, but almost…passive aggressively…you can not express anything negative. And then there’s, like, the protestant work ethic and assumption of it”. Ashley went on to explain that this tension between empty niceness, actual kindness, and productivity has not only influenced her expectations of herself, but of her virtual teammates, including the graduate students that she now supervises. Ashley also described Midwestern identity as steeped in conservative Christian family values, including local community involvement and following a strict moral code. She indicated that white folks in her Midwestern community of origin seemed to struggle to connect to broader social change movements and thinking even when locally activated in helping diverse immigrant community
members thrive. She contrasted this local focus to the role of researchers in general and her team in particular, “we're certainly like, falling within a more societal level analysis and then also, like, within this, like, intellectual tradition, that aren’t necessarily things that I would associate with the Midwestern”. Thus, Ashley indicates a rejection of some midwestern thinking while still enacting midwestern behaviors - kindness and productivity - as an academic.

Holly, who grew up in Wisconsin, strongly identified as a Midwesterner, “I feel like, even if I didn't currently live in the Midwest, I would still consider myself a Midwesterner”. Like Ashley, she described midwestern identity through stereotypes, but also discussed her personal feelings of otherness in certain situations and her need to perform sophistication when outside of the Midwest or in certain work situations:

I think that part of being midwestern is that the rest of the country has an assumption. I feel like I sometimes have to signal sophistication differently because it's assumed that the midwest…doesn't have as much. I went to school in Maine with a bunch of people from the East Coast that, like, this came out real hard in college where I had to - I feel like just constantly kind of defend that I wasn't sophisticated. I think there are assumptions about, um, like ethnic identity, cultural identity, and race. White people in the Midwest assume this sometimes about themselves too, like, the Midwest is rural and not racially diverse and, like, I think there's rural Midwest and then there's like, urban, Midwest and obviously that comes out real hard in Wisconsin. Um, the rural urban kind of divide in Wisconsin is pretty stark.

Holly also commented on the invisibility of Midwestern identity in the context of the research team work multiple times, along with her current research work in Wisconsin, “You know, this is why I'm, like, kind of stuck on this question [because] I totally identify as a Midwesterner…But
I never explicitly actively thought of it as informing my norms and values. I certainly didn't think of it explicitly in terms of this research team”.

Like Ashley, Holly also talked about Midwest Nice, contrasting this with the authentic kindness that she found on the RC team: “Kindness is different than Midwest Nice. To me, and my understanding of it is, um, sometimes not authentic, it's like, lack of ability to be confrontational. Midwest Nice is usually in reference to, like, avoidance of conflict”.

Importantly, Holly reflected on the intersection of Midwest Nice and Whiteness: “One of the characteristics of white supremacy culture is that…white people have the right to be comfortable in any space that they are. And that means a maintenance of conflict avoidance and that means avoidance of like, critical self reflection”.

Wendy presented a contrasting view of the Midwest and of her Midwestern identity, centering her city of origin - Detroit - and the black communities that created, maintained, and continue to uphold the metropolis. She’s lived in the South now for 20 years and finds herself explaining her hidden identity to Southerners:

They are, like, “Oh no, I thought that you were from the south. I thought they were from somewhere else…you're so kind, you're so polite…and I said, “All of that was cultivated in Detroit”. And it is a synthesis of the city, but I think it's the same thing with media anywhere, right? And in particular the media, in spaces that deal predominantly with black people, you hear about all of the negative…but beautiful things come out of Detroit and I am one of them.

Like Holly and Ashley, Wendy referenced Midwestern productivity and thought through how her own community viewed labor:

I know what it means to work. That work ethic, when I think of it - A member of my
family has worked for all of the big 3 automakers at one time, so somebody's at GM, somebody was at Ford, somebody was at Chrysler. Um, I've seen a car made from start to finish at the Chrysler plant. These are people who work and work hard. And a lot of your life and many of the ways that it exists wouldn’t be possible, right? There's a lot of culture and a lot of beauty and a lot of excellence in Detroit, and I'm part of that story.

The tension between kindness and productivity - perhaps a product of Midwesternness, perhaps not - emerged as a theme as the co-PIs thought through their positionality on the team and their responsibility to team members with less power and with intersecting marginal identities. For instance, Ashley extended this thinking about the tension between equity, kindness, and productivity to the more junior members of the research team who happened to be women of color:

So that is something that I think is important - an equity minded team, but I don't have a solution for how to make it really effective. Maybe productivity isn't the best? Not sure...I don't know. With that I feel like a lot of things come back to that. When you're thinking about, yeah, just centering every voice and giving an extra space for people who just, like, within the power structure of a research team might have less voice.

Here, Ashley reflects one of Nocco et al.'s (2021) practices: Centering the voices of marginalized researchers.

So, how does the current literature conceptualize this complex relationship between research team work, stereotypical midwestern values, actual context-and-place dependent midwestern values, whiteness, productivity, and centering the voices of less-structurally empowered team members? It doesn’t. This work is likely a research study on its own by another researcher from the midwest; however, I include this finding here since the stories that Wendy,
Ashley, and Holly told reflect so many of the findings of this study. Most notably, productivity was a major value held by all members of the RC team.

“I Think That Women Tend To Talk Out Loud About This Stuff More”:

Comparisons Between Teams Of Women and Mixed-Gender Teams. As discussed in Chapter 2, women in academia face a unique set of structural barriers that can have limiting effects on their long term flourishing in the academy (Acker & Feuerverger, 1996; Ashencaen-Crabtree & Shiel, 2019; Bird, Litt, & Wang, 2004; Docka & Stone, 2021; El-Alayli et al., 2018; Knights & Richards, 2003; Tierney & Bensimon, 1996). Given these systemic findings, how might a research team made up of only women shut down - or, alternately, add to - the discrimination that women face in higher education?

First, in thinking through their respective histories with the team, all participants agreed that the Reimagining Citizenship team was composed of long-term core women researchers, although some men researchers did work on the team in shorter term capacities as data analysts or in other roles. This pattern began in 2006 when Monica founded the team. As explored in Chapter 2, women academics experience discrimination as they enter and move through their careers in higher education, including expectations to take on more institutional service work and lack of leadership opportunities (Guarino & Borden, 2017); these risks are compounded for women who are minoritized (Onwuegbuzie, A. J., 2021), who come from low SES backgrounds (Chiappa et al., 2019), have caregiving duties (Hanasono et al., 2019), and who have lower statuses within academia (Chiappa et al., 2019).

On the RC team, the women I interviewed spoke extremely highly of their experience on the team and the single-gender makeup of the long-term team. Although many of the decisions of the team were purposeful, I was surprised to find out that this team's makeup was a happy
coincidence. In fact, Monica revealed that she never considered that the long-term team members were always women. It took a chance encounter to begin her reflection on this fact in 2020, 14 years into her leadership of this team and as she was transitioning on to other projects:

Because we were in...different places we...had a lot of meetings virtually. I had a meeting and was working from home and my spouse happened to be there. And after I concluded the meeting, he, having overheard, said, “Well, what a difference having a team where you're all female! You were all very collaborative and supportive of each other in your communications". And he said, “When I have a meeting” - he's in the hard sciences and it’s almost all men - “it’s mostly just work in meetings”. And he said, “We have a very different way of interacting, you know, people are trying to show who's more important or whatever”. So, he reflected, and I never had thought about, in fact, until probably then, like, “Oh, yeah, we have an all female team!” and I never even thought about the nature of our collaborations. It is, I think, distinctive, just, you know, just the way we worked, right? Um, we worked like a team. We valued everyone.

As in Monica’s story, the rest of the team made sense of their experiences on the RC team as women by comparing their experience working with men. For instance, Ashley contrasted the level of personal sharing and relationship satisfaction between her time with Monica on the Reimagining Citizenship team and her more recent work with a male economics policy professor that is funding her on a multi-year grant:

We don't talk about personal things as much at all. He did not open up about ways in which the pandemic was really affecting him. He knows I have a daughter because she shows up on video calls. Um, he never seems to mind when that happens, you know, but, you know, we'll - we do exchange pleasantries. But nothing personal has come up. We are
working now on our 2nd paper together. I felt bonded to [Monica] in a way that I don't feel bonded to him.

So, although some of the ingredients of successful virtual research team work exist in this relationship - autonomy, respect, collaboration, mentoring, appropriate resourcing - Ashley preferred working with Monica because of the personal relationship they share.

At the same time that Ashley was working with the male economics professor, she was also working on the RC team and on another virtual research team with two black women researchers from another large public university in the South. In reflecting on this other team, Ashley described how the three women bonded during video conferencing meetings:

I feel really emotionally close to them…We spent the first part of our meetings, like venting and talking about parenting and working with your kids on your lap - and our kids were on our laps - and so we got to know each other's kids…Both are like pretty critical scholars…a lot of our conversations about their experiences at [their university], unfortunately, were about racial undertones.

Here, Ashley uncovers the complex nature of relationship building on all-women teams and not just with the RC team: In this short passage, she describes bonding through shared parenting talk, meeting each other’s children as they attend meetings too, and bearing witness to the discrimination that her two colleagues faced at work.

Like Ashley, Holly reflected on working on virtual teams of women more generally and the RC team more specifically. She thought through how the personal and professional are intimately connected in this work:

I will say, I think women tend to talk out loud about this stuff more. Especially in a team that, like, we hopefully created a norm where that's okay. So it provides a way to learn, I
mean, I guess to learn, and also to look at - notice when I'm not doing it or when I'm inadvertently modeling badly.

In other words, Holly posits that women tend to do more work together around the sociology of their own work together on research teams and how they might co-create a better experience for themselves and others.

In addition, Holly talked through another common experience that women researchers talk with each other about: The unequal caregiving burden at home and at work. Holly’s thinking here aligns with the emerging research on the expectations around care placed on women academics (Docka & Stone, 2021; Guarino & Borden, 2017; Hanasono et al., 2019). Although Holly identified talking about caregiving of children and actively caring for each other as a way that the RC team - and her other teams - have flourished, Holly underscored that women taking on the majority of caregiving duties at home and in the workplace is unsustainable.

Like Holly and Ashley, Wendy practiced deftly switching between personal and professional talk in her RC team meetings. For example, in one meeting from August 2023, Wendy and Ashley discuss Wendy’s prospectus:

Wendy: I could take some detailed feedback.

Ashley: Perfection. Anything else that would be helpful to discuss regarding the prospectus now?

Wendy: Just be really honest, I mean, in my mind, I’m still trying to adjust to being back in the US [from my 9-month Fulbright experience abroad in Rwanda] and having a death in the family basically as soon as I got back.
Likewise, when I interviewed Wendy, she displayed this same interweaving of the professional and the personal. When I asked her about the hidden curriculum of being an emerging researcher, she responded at length with multiple strategies and then pivoted to the personal:

You advocate for yourself…ensure that you’re being credited…make sure that you have an advocate…you care about being authentic and your functioning and all of who you are, not just who you are as a researcher. So, one of the things that I constantly talk about very openly is mental health. I want to be a model for people who also deal with these diagnoses and who think it would stop them…because it’s not like my mental health doesn’t have a significant impact on my daily functioning. It does.

Also like Holly, Wendy, and Monica, Wendy reflected on her experience working on the RC team by comparing her broader graduate experiences working with women versus men. Although the RC team is her first research experience, she contrasted her own supportive strategies as a black woman to those of a white man that she worked with on a panel for incoming graduate students:

There was another person on the panel who's kind of the opposite and that’s fine. Uh, he had a very like white male, patriarchal perspective…[He said to the attendees], “It's going to be hard, you're going to struggle and you might fail”. And I was like, “You might not fail. I've not failed at anything. So, consider if you fail, you know how to deal with it, but consider, you might not fail”.

Wendy’s method here reflects research around the importance of not creating deficit narratives (Williams et al., 2019). Whereas a white man might need to help other white men - or white people - understand that they may be shocked by struggle (possibly for the first time), Wendy delivers the opposite message from her position. Like Wendy, all of the women on the RC team
hoped to increase social good and their own flourishing and to decrease disparities, including deficit narratives.

**Exploring Professional Roles & Rankism.** The historic RC team members always served in a variety of professional capacities - as tenured faculty, as junior faculty, academic staff, as post-docs, as GRAs - often moving through different roles in their time on the team. Although all interviewees indicated that they felt respected and connected and served as co-conceptualizers and power sharers regardless of their status, the RC team is only one team in the ecosystem of the participants’ work lives. The literature indicates that both GRA researchers (Kezar et al., 2017) and junior researchers (Azevedo, 2020; Caretta et al., 2018) experience unique stressors that can lead to burnout and other ill effects. In contrast, the effects of rankism on academic staff researchers, like Holly, do not seem to be theorized at all in the current literature on research teams. Thus, it is important to uncover how status and rank plays out generally to understand how the RC team was unique in its approach to power and status. Holly’s role provides a unique position in which to examine status and rank.

First, Monica reflected on the early days of the RC team and talked through the culture of respect that she helped establish:

We were giving equal priority to different types of research and also making sure everyone - no matter what their role…felt like they had the tools - the support they needed to do it…No matter what our role is, we achieve together and appreciate each individual - what they do. And, I feel like that's just kind of, like, a core value that I brought to every role that I have had, you know, whether I'm chairing a department or leading a research team.
Monica compared these core values - appreciation, support, resourcing individuals with what they need, and a team-achievement orientation - to less positive examples:

I've seen the negatives of hierarchical approaches too and, I mean, it’s not that hierarchies are bad. We have hierarchies everywhere, but it's how you treat people within the hierarchy, depending on where they sit, that can make people feel like they're a valued part of the team and working towards something valuable.

Diving deeper, Monica reflected on her own days in graduate school and how negative examples there led to her core values:

Well, I, um, I did my graduate work at the University of Chicago and so it's a big time economics department where my primary advisor was…I'll just say that I observed a lot of things when I was a graduate student that made me think, “I don't want to do that. I want to do things differently”....You know, um, creating teams where people on the team feel like they aren't in competition with each other or that people will undermine one another. You know, or where again, that kind of approach where you make it clear that some people's roles are less valuable than others or things like that.

In thinking about different roles on the RC team, Holly, a PhD-holding staff scientist at a large Midwestern research university, indicated that she never felt othered as a staff-ranking researcher while on the team; to the contrary, she described the experience as hugely meaningful and supportive. However, in her work outside of the team, this is not always the case. Holly works in a large institute with many other staff scientists. Like faculty, Holly does research, publishes, and teaches. In addition, she serves as an advisor and mentor to GRAs and Post-Docs. In other words, Holly performs the job duties of a faculty member; however, since she doesn’t have the role of faculty member, she feels that she has to do extra labor to legitimize her role: “I
do usually feel like I have to signal my legitimacy in certain spaces. Even within [my university], even with faculty colleagues and friends who I believe have great respect for the work I do, and the scholarship…I do feel like I have to constantly signal legitimacy”. In addition, Holly described how the majority of her research work involved evaluation research and that this is considered “less than” at her institution and in the field in general. She went on to describe how this signaling is even more necessary outside of her institution as she attends conferences and other faculty-dominant spaces. One way that Holly often signals legitimacy is through her expansive publishing record, which mirrors quantity and quality of faculty expectation:

Publishing is such an important currency in academia in certain spaces. The publishing part is a proxy [of legitimacy]. It shouldn't be..[but] I have a publication record that is in some ways equal to at least junior faculty.

**Strategy 2: Promote Well-Being**

“Promote Well-Being” was a strategy suggested by Nocco et al. (2021), but the authors did not offer a definition as they did with equity. Although the authors didn’t clearly define wellbeing, they did suggest that wellbeing should be considered for both the team and for individuals: “There are many ways we can promote wellbeing on project teams, while respecting individual constraints and schedules” (Nocco et al, 2021). They also describe well being as visually represented on their model as “grounded in strong, secure roots and healthy soil” (Nocco et al, 2021). To further explore what Nocco et al. (2021) meant by well-being, it is helpful to consider the wellbeing practices that they identified:

- Set an example by making visible & vocalizing project leader work-life balance practices
- Normalize self-compassion and self-care
- Pod map to identify support systems
- Share wellness resources
- Foster team-building opportunities
- Encourage hobbies & breaks
- Relax deadlines and exercise grace

By examining these practices and the other wellbeing statements, then, it seems that by wellbeing, Nocco et al. (2021) meant setting up a holistic network of support for the team and for individuals on the team so that both individuals and the group might flourish across domains. I adopt this definition in my own work. In my work, I confirmed that Promoting Well-Being was a major contributor to the RC team’s flourishing. Like Nocco et al. (2021), the RC team 1) set an example by making visible & vocalizing work-life balance practices, 2) normalized self-compassion and self-care, 3) identified support systems, 4) fostered team-building opportunities, 5) encouraged hobbies & breaks, and 6) relaxed deadlines and exercised grace. I did not find evidence that the RC team did formal Pod Mapping or formally shared wellness resources within the team, but this may be a limitation of my data collection. I did, however, find that the team talked a great deal about finding support systems, thus the inclusion. In addition, I found evidence that the RC team practiced these well-being practices not identified by Noco et al.:

- Engaging In Significant Personal Talk, Including Around Personal Hardships
- Theorizing Flourishing and Haggardness

Importantly, in my work, I identified “Prioritizing the Personal” as a major strategy that I will discuss later in the paper. Thus, while I touch on work-life balance practices in this section, I devote much more time to this topic in Strategy 4. In addition to Nocco et al.’s advocacy for
well-being on virtual research teams, Gibson et al. (2015) cited wellbeing as a gap in the literature on virtual teams. My work partially fills that gap.

Turning to the Cartography of Controversies, well-being practices were complicated by the following open disputes:

- How can we balance personal and professional flourishing?
- How can we balance care and productivity?

Likewise, shared team ideology and values flowed amongst and between the members of the team, creating paths forward and moments of pause. The most relevant ideology here is: *We can all flourish better together across time if we put our holistic well-being first.* Rest and Relationships were the shared team values most closely associated with this ideology.

Below, I discuss two of the well-being practices shared by Nocco et al. (2021) and the RC team related to work-life balance and along with the two practices unique to the RC team. Many of the other practices identified by the authors in this strategy are quite general and will appear in other portions of this paper.

**Set an example by making visible & vocalizing work-life balance practices/Normalize self-compassion and self-care.** In Nocco et al (2021), this practice is emphasized as the responsibility of the project leader. As in the rest of this study, I hold that all team members can and did make significant flourishing contributions to the RC team. At the same time, in my findings, senior members Monica, Holly, and Ashley talked the most about this concept and talked about this concept in relation to their own reflections on mentorship, one of the most common values identified by everyone on the team. Notably, this is an area where the value of genealogy - or, the active passing down of researcher wisdom from one generation to
the next - also seems evident. For instance, Holly talked at length about her own approach to setting up work-life boundaries by reflecting on Monica’s role as her mentor:

    Monica, she mentored with this really interesting balance of caregiving, like, through work, like, care and then also caring about the human, um, which I appreciate and set a tone…She does all that and has, like, exceptionally high expectations…for the quality and the productivity of the people that she works with and the quality of the work… sometimes those things are at odds.

Holly goes on to explain that the contradiction between productivity and care can also extend to care for the self:

    I don't think [that] Monica mentored taking care of herself. I don't know when she slept. If something wasn't meeting her expectations, she would be clear about that, but then if it wasn't - if it still wasn't happening, she would just do it. I get you don't get to where she is, and who she is without, like, maintaining a bar, um, but…there are times that I, um, actively think, I don't want to be - I don't want to work the way she works.

Thus, although Holly views Monica as a caring mentor, she hopes to avoid some of the effects of toxic productivity on herself and those that she now mentors. Furthermore, she recognizes a counter-strategy to not model Monica’s practice of taking on the work of others. Conversely, Holly pointed to peer Ashley as a model of balance: “And then, I think about…how I've learned a lot from Ashley about how to actively try to do things to take care of yourself in the context of incredibly difficult balance work”. Holly’s reflection extends not only to the professional mentoring that she does, but also to her children:
[In the past] I would just work, work, work, work whenever there was an open space…which is not healthy …more recently, I have, for various reasons, just said, I, I'm not going to work at night. I just can't, like, no matter what. And a lot of that is that I don't want my kids to see me working at night. I don’t want them thinking that that’s healthy…I’m proud of myself!”

It strikes me that Holly’s children are both girls, so she is not only modeling healthy work boundaries for women on the RC team, but also for her young daughters who will be entering the workforce in the next few years.

Like Holly, Ashley actively works towards setting boundaries between work and home. She identified the following boundaries as critical to her well-being:

- Prioritizing her role as a parent over her role as a faculty member and researcher
- Not working when her child is at home
- Taking time during the workday when she works at home to take breaks and do household duties
- Dividing her workdays into administrative tasks, reflective pauses, and times of high intellectual output to increase her productivity and to free up time
- Using extra time for herself and her child instead of pursuing more research work

However, Ashley recognizes that these boundaries are sometimes necessarily crossed due to the nature of research work and in support of her teammates and students. For instance, she described how other more junior RC team members sometimes need to step away from the work and she may need to take it on:

If you're talking about, “Okay, here are the next steps” and the person just looks like they…just can't take on more work, that's a really good sign that maybe like, you need to
step back or, like, take on a little bit more [yourself] or to push a deadline…if it's two or three meetings in a row, um, I might even…take on more than I might have otherwise. Ashley’s observation is an interesting callback to Holly’s reflection on how to model boundaries within a system that demands a certain level of productivity on a deadline and to a certain level of quality.

**Personal Talk And Normalizing Hardship.** In the interviews that I hosted and meetings that I observed, personal talk - especially personal talk about family life, including hardships and well-being - were common topics of conversation and focus. Moreover, the team members emphasized many times that personal talk - including talk around hardships - created deep personal relationships that were critical to the success of the team itself. This insight aligns with emerging research that suggests that deep personal relationships, like those that exist between the RC team members, are essential for successful projects in higher education (Heard-Lauréote, K., & Buckley, 2021).

For instance, in a meeting from August 2023, Ashley and Wendy met to talk about analyzing data for a project and to discuss Wendy’s upcoming prospectus. This conversation flowed from Ashley’s offer of support related to Wendy’s prospectus. This extended excerpt shows the range of personal conversation and vulnerable sharing that can happen in one of these meetings over the span of a short period of time:

Wendy: Just to be really honest, I mean, in my mind, I’m still trying to adjust to being back in the US [from my 9-month Fulbright experience abroad in Rwanda] and having a death in the family basically as soon as I got back, like, it's just yeah. So, like since
December, it's like, boom, December, January, then this one, I'm like, okay look, can we stop that?

Ashley: They do say it happens in threes. So it should be done?

Wendy: Hopefully we are done for a time.

Ashley: Yeah, I had, like, 3 deaths back to back in my family at 1 point. So I don't know why. I don't know.

Wendy: Yeah. Like, can we be done? Can everyone else here just be here for a while?

Ashley: Absolutely.

Wendy: In particular again, with the shift, just coming back to the United States, which has been more challenging than I thought it would be.

Ashley: Oh, really?

Wendy: I mean, yeah, I guess that does, in retrospect, it makes sense. There's - even though it's like, yeah, there's a lot of stuff we normalize and it is normal for us is our normal life, but being away for 9 months, it's like, okay, this is actually not - It doesn't have to be this way. It's normalized, but it's not normal. It's like, I can't do it in reverse. I can't renormalize it.

Ashley: Interesting and fascinating.

Wendy: I'm trying to because I would like some level of normalcy, right? Just a little.

Ashley: Yeah, it can be exhausting to be thinking about every single, like, little process. There's a reason why our minds, like, eventually default to things even when it's not the
best way to default, um, just so - you need a mental break so I hope that eventually you're able to find that.

Wendy: Yeah. I’m working on it - my therapist and I are together, so we are going through it, but yeah, I didn't realize how much of a weight that would be.

Ashley: Absolutely.

Wendy: Also, not related to any of this, if you'll give me your address, I have some things for your little love.

Ashley: Oh!

Wendy: As I'm cycling through all the things I have, and like, getting things to people I want to, um, I want to get to you guys.

Ashley: I put my address in chat, um, thank you so much!

This excerpt took place over less than two minutes in the meeting I observed and demonstrates many of the relationship values shared by the RC team: candor, care, mutual support, friendship, and kindness. Importantly, these values circulate between Wendy and Ashley, not in only one direction as a sympathetic space of meaning making, reflection, and giving.

The participants also spoke about how their practice of openness and vulnerable sharing allowed for the setting of boundaries. Holly said, “From a number of different people on the team, it's okay to say out loud ‘I'm going through this right now, which is making this hard. And here's how. I just want you to know. I don't need to debrief it. I don't need you to try to fix it, but I just want you to know that this is what's going on’”. Thus, Holly demonstrates how to talk about personal struggles, indicates how these are impacting research work, and then indicates what the team members can do.
Theorizing Well-Being: Flourishing And Haggardness. In addition to describing and embodying many well-being practices, the RC team also theorized wellbeing in our interviews together. I want to recognize their theorizing contributions here not only to give them credit (see Strategy 5), but to also offer up “theorizing wellbeing” as a practical strategy that other teams can take up themselves and use to create more well teams and individuals. In addition, I want to especially highlight Wendy’s contribution of “haggardness” as a counterpoint to “flourishing”.

Monica, Holly, Ashley, and Wendy all spoke at length about how flourishing teams feel and function, with each team member describing this slightly differently. Holly described this state as “resonance” and contrasted this with “dissonance”:

When sounds are resonating, um, it's like they fit and there's like, I'm, I'm visualizing the sound waves and, and they are matching, you know, like the resonance is like they're in tune…I think that dissonance - It's like, you know, when there's things that are grating on each other…You can have resonance in the middle of conflict…[Dissonance] is like, when stuff isn’t working and it's like all this labor is like active labor to clarify expectations or clarify language or correct or recalibrate.

She went on to describe the functions of resonance and what these functions look like. These include 1) shared assumptions, generally, about the goals of the project and how the work should happen, 2) shared assumptions around social good and social justice, 3) shared assumptions around improving practice and policy, 4) a reduction in project communication/project management labor, 5) common definitions about specific project goals and aims, and 6) trust in representing the team to outsiders. Critically, Holly also described resonance as a necessary condition for meaningful qualitative analysis:
How much resonance is there between people? I mean, we are the instruments, right? Like, we're doing the observations, we're doing interviews, so, like, it is coming through us and so the lenses and the ways that we make sense of it in conversation…with somebody like Jessica and I definitely feel this way with Ashley. Making sense of the data is collective…I don't know if I could do that with somebody who I didn't have some resonance with.

In other words, Holly views resonance as a requirement to make sense of the data.

Holly identified the various grants that the team received as discursive tools to help build resonance. According to Holly, each time a new grant was awarded, there was an active recalibration period for the team to talk about and plan for how they would work together. This recalibration period often included the onboarding of new members. Thus, time on the team was a big factor in creating more resonance amongst the members. Interestingly, Holly notes attrition as a symptom of dissonance.

Unlike Holly, Ashley conceptualized wellness and unwellness in both individual and team-level terms and she applied her concepts to other researchers on the team as well as herself. In addition, while Holly used more theoretical and reality-level concepts to describe wellness and unwellness on teams, Ashley used concrete behaviors and internal states to describe this continuum. First, Ashley used the terms “refreshed and recharged” to describe a well researcher and explained that a well researcher acts calm, is unhurried, and doesn’t display signs of physical illness or lethargy. Second, she described how well teams make “space…to breathe…moments to pause so that you can consider and then re-engage with the discussion” and make space for “mental wellbeing and safety and feeling a sense of belonging”. She added that well teams are “excited to enter a meeting and [dont] feel drained afterwards...ideally, they are feeling
energized. They [have the] feeling that they can connect on a human level and that you accomplished something together”. She considered these markers of wellness specifically in her interactions with Wendy:

With Wendy, specifically, she tends to be a fast talker, but there’s like a lightness to it when she's excited about something. Or when she's feeling engaged, she'll often talk slower. [On the other hand] when there's family stuff going on or she's feeling overwhelmed she'll take more pauses…you can just tell her energy is off.

Thinking more about unwell teams and team members, Ashley thought through burnout and how that feels in relation to research work and life in general:

Burnout is a technical term, and I'm not entirely sure what it means, but, if I push too hard…getting out of bed is hard. Like, you just want to get back to bed. Um, you’re not enjoying anything. You're just like going through the motions. You're not grounded. You're not in the moment. You're not connecting. You're apathetic, you're drained. …Those are both emotional as well as physical, right? Like, yeah, you don't just need a physically well body. You need your, like, mental capacity to be engaged too, which takes a slightly higher level of wellness.

In our conversations, Ashley indicated that her home/Webex is a place where she feels refreshed and recharged while working with the RC team, while her on-campus office is often a draining space of apathy:

I do go into the office many Tuesdays and I get drained so much more quickly. [If I’m at home, I’ll take a break] and walk the dog, but my brain's still working on something sticky about the conceptual framework. And I come back and I can be fresh again and,
like, engage intellectually with this idea more and have had a little bit of space and just, like, reprocessing time…whereas if I'm in the office…I'll get tired and I'll just start doing…busy work…filling out forms…I get less done when I have to go in to work.

Secondly, I think the virtual nature [of work at home] allows me to be more efficient, more productive in the time I work. And, then, I've given that time back to myself.

Generally, Ashley expressed a great desire to control her wellness through controlling her work schedule and work space to the greatest extent possible. This control comes through virtual work, the affordances of virtual tools, and setting a daily schedule that refreshes and recharges her; however, Ashley recognizes the limitations of individual control within the structural expectations placed on faculty. For instance, in thinking about the fuzzy nature of rest for faculty, she mused:

It's weird that faculty don't get vacation because technically they're taking it when school's not in session…but the majority of the output we’re judged on is research, which for a lot of faculty they can't do a lot of, except on those breaks. Um, so that's another reason why I feel like working fewer than 8 hours a day. I'm just spreading it out so that I can maintain balance on a day to day basis. And I don't want to burn out in silence.

This quote from Ashley epitomizes many of the findings in this paper in its concomitant recognition of agency and oppression. While I offer up a construction of strategies that the RC team used to flourish, they are flourishing imperfectly and sometimes not at all within a system that encourages boundaryless work. In addition, Ashley’s feeling about working in her home versus in the office, how she structures her time, and how different laborers are variously rewarded with time away reflects much of the research on post-pandemic reorientations to labor
(Smite, 2023). Most notably, laborers across all industries now expect to have more control over the time and place of their work.

More than any other participant in this study, Wendy centered and theorized wellbeing for herself and for her fellow graduate students. Early in our first interview, she used the evocative term “haggard”: “In my conversations with people, I recognize a big issue with a lot of PhD students, in particular those with families, and those that are still working, is self care and maintaining yourself in this process. One of the things I have committed to is not being haggard …at the end of this process”. She went on to describe how she encourages her peers to guard against haggardness in the difficult work of pursuing a PhD: “This whole process does not have to be hard. You do not have to struggle through everything…why not expect that some of this might actually come easily to you because you're where you're supposed to be doing what you're supposed to do?”

At this point in my own research, I was feeling a bit haggard myself and Wendy’s thinking here helped me think more about my research question and what concept I was really trying to get at with wellbeing. In fact, during this conversation about responses to haggard, I look to the transcript and see that I began using the term flourishing as Wendy and I continued talking: “This reminds me of, like, the concept of flourishing and helping people get to a spot of flourishing and expecting flourishing”. Flourishing is a concept developed by poet, academic, and intersectional feminist Audre Lorde and it seem especially relevant to my work with the RC team:

Those of us who stand outside the circle of this society's definition of acceptable women; those of use who have been forged in the crucibles of difference - those of us who are poor, who are lesbians, who are Black, who are older - know that survival is not an
academic skill. It is learning how to stand alone, unpopular and sometimes reviled, and how to make common cause with those others identified as outside the structures in order to define and seek a world in which we can all flourish. (2007, p.117)

Wendy and I continued to talk more about haggard in all three of our interviews, as well as flourishing, and we both began using these terms automatically in our conversations as a shared space of understanding. Moreover, we began to talk through haggard as step towards burnout and then, for black women in particular, Wendy wondered how haggard might be a step towards weathering, or “the health inequalities suffered by Black Americans..a consequence of institutional racism and the cumulative impact of life in a society where they suffer social, economic, and political exclusion” (Simons et al., 2021, p. 283). Thinking back to Holly’s theorizing of wellbeing, this co-theorizing seems to be an example of resonance - Wendy and I were feeling resonant and sharing language as we thought together.

So, what is haggard and what is flourishing? According to Wendy, when a researcher is haggard:

- You’re all worn out and you look it
- You’re missing out on stuff that brings you joy
- You’re exhausted
- You’re not fully present
- You’re a shell of who you were
- You can’t stand to perform researcher-adjacent hobbies that once brought you joy, like reading
Wendy’s definition of haggard and Ashley’s burnout definition are strikingly alike. Likewise, when I asked her how she prevented herself from becoming haggard, Wendy emphasized the importance of boundaries just as Ashley and Holly had:

[Creating] strong boundaries, yeah. I always have at least one day where I just don't do anything work related or school work related, at least one, and I really try for two and it doesn't have to be the weekend, right, and talking people through that…So, Fridays and Saturdays. I would shut it down. And I would go to a museum and I would make myself do stuff so that I wouldn't fall into doing work. I would go visit people. I will go to a museum exhibit. I'm going for a walk. I am doing something else that is good for me, that's beneficial. I’m doing something that brings me some level of joy. Um, because that is my work for that day. My work for that day is to enjoy or rest…or recover..so that when I come back to my work I'm coming back with a clear mind and with a happy heart. I think people discount the need for a happy heart in this work and I think that makes a difference.

**Strategy 3: Prioritize Long Term Growth & Change**

“Prioritizing Long Term Growth & Change ” is a strategy original to my study - it was not originally recognized by Nocco et al. (2021). I define this strategy as a continual focus and strategizing on the evolving best possible futures of team members, team projects, the team itself, and the communities that they hoped to resource with their research projects. Nocco et al. (2021) do gesture towards this strategy in their article by briefly recognizing the long-term effects of poor mentorship on BIPOC mentees’ confidence and by recognizing that “using a crisis, the pandemic, [can] transform research team dynamics towards long-term equity” (p.2). However, the authors do not provide practices that consider long-term growth and change since
they were writing during the pandemic and responding directly to the acute crisis. Although Nocco et al (2021) do not focus on the long-term, Hoffman et al. (2013) theorized that a holistic, future-oriented approach is critical in examining power circulation on research teams. In addition, in their comprehensive review, Gibson et al. (2015) found a lack of research on team adaptation as a gap in the literature. My work addresses this gap, if but partially.

In my work, I confirmed that Prioritizing Long Term Growth And Change was a major contributor to the RC team’s flourishing. The RC team - who worked together before, during, and after the acute phase of the COVID pandemic - prioritized long term growth & change in almost all of their interactions and work together. I found evidence that the RC team practiced these long-term growth and change practices:

- Anticipating and embracing their own and their fellow researcher’s role evolution
- Anticipating and embracing new team members and team compositions
- Reflecting on the boundaries of the team and resisting closure
- Supporting each other through evolving lives and careers

Turning to the Cartography of Controversies, these practices were complicated by several open disagreements/disputes that always structured the work of the RC team:

- What is the team and who counts as a member?
- How can we balance personal and professional flourishing?
- How can we move forward with different levels and types of resources over time?
- How can we support team members with different roles and different career pathways?
- How do we end well and maintain our relationships?

As in Strategy 1 and 2, the team shared values and ideologies that helped construct these disputes and the team practices that helped them move forward. The most relevant ideology here
is: *We must constantly strategize and pivot to meet the demands of academic preparation and academic careers.* The following shared team values, developed through my thematic analysis of all sources of data, contributed to the construction of this ideology: Constellation Shifts & Productivity. As indicated in the full coding table, Constellation Shifts contain subvalues such as ecosystem, evolution, and genealogy while Collaboration concerns subvalues like maintaining high standards, praxis, and collective goals.

**Anticipating and embracing their own and their fellow researcher’s role evolution.**

As a reflective and future-oriented team, the RC team members very frequently discussed how their official roles and their unofficial relationships evolved over time and how they will continue to evolve. Many of these conversations revolved around mentorship and bespoke mentoring. Mentorship was one of the most frequent common values held by the RC team members while bespoke mentoring was one of the most frequent helpful strategies mentioned by the participants.

Both Ashley and Holly recognized Monica as the originator of this personalized, future-oriented mentoring style that they, in turn, have brought to their own teams. When I spoke to Monica, she describe her ethos in this way:

> You know, you want to unleash the talents of the people on your team, not control who does what, right? So, it’s a different kind of way of managing. It’s, like, looking for the opportunities, giving the team members, um, the chance and resources, they need to to take things in directions that are interesting and new, but important and tied to the project. Um, and then, you know…In Ashley’s case, right? It’s an example of how important it was to her, launching her own career in the direction she went.

Here, Monica epitomizes two other very common values held by the RC team: resourcing communities/people and evolution. She recognized that her job was not to control the direction
of Ashley, but to resource Ashley so that she could steer the direction of the team and her own career. This type of resourcing work - where a person in power gets resources and then gives them over to the less powerful to use in the way that they see fit - is recognized in critical feminist literature as a major goal of equity work (Goodkind et al., 2021). Unsurprisingly, this is the work that the RC team hoped to do as well.

In our conversations, Holly and Ashley spoke extensively about their roles over time and the shifts in how they viewed themselves, how others viewed them, and how these real increases in power empowered them to help junior team members. In addition, Holly and Ashley reflected deeply on how their experiences as junior members affected how they prepared for and enacted their roles as team leaders. For instance, in thinking about her role over time Holly said, “As [the RC team] progressed, then I did come more into, sometimes, a mentor role, which surprised me! The first time somebody asked me for a letter, I was like, ‘I'm not - I can't do that. Like, I'm not - that's not something I'm allowed to do’ and I'm like, ‘Oh, wait. Yeah, I am!’”.

Like Holly, Ashley reflected on her evolving roles over time. In addition, she described how she views her role now in preparing Wendy and other junior researchers for their future roles as more senior researchers:

Some of the strategy is… giving people who are still learning and, like, training and being mentored opportunities to step into leadership roles. And some of those are, like, small leadership roles. And some of them are, you know, just like having the opportunity for them to receive mentoring and, like, take on ownership ...this has been a big priority. That was something I benefited from and believe really strongly in.

Like other participants, Wendy looked back on her time on the team and charted her roles over the years. As a graduate student and more novice researcher, Wendy tended to identify more
granular roles associated with the parts of research that she was experiencing on the RC team and learning about in her coursework: coder, data analyst, and literature review writer. These changing roles helped Wendy gain agency as an emerging researcher and helped her feel like she was flourishing:

Um, so, being on a team where my role can be ever evolving is such a gift because I can always contribute even if I can't always contribute in the same way. And so I always feel valuable. I always feel a part. I always feel necessary in that sense, because I can always make a contribution that is needed, um, while also creating space for me as a person, not just the researcher, to be well.

In thinking about individual roles and how they help her in her longer-term goals, Wendy gave an evocative example of how it feels to be a data analyst on the RC team:

I had the chance to go to Egypt for my birthday and we visited a factory where they make those Egyptian rugs and the ways that they make them…it's like, when you're at a particular point, you might say, it just looks like nothing. It's a thread being pulled through in a particular way of a particular color at a particular area. But then eventually those threads end up as this beautiful rug or this table runner, or something your mind didn't even realize could be made because there's so many colors and there's so - there's such intricate detail and you're like, wow. You're focused on your one part then you get to kind of come back out and see the big picture and that has been really cool as a data analyzer. I go in and pull all these threads and then come back out and say “This is the big picture”.

In recorded meetings between Wendy and Ashley, I also observed Wendy performing several roles that she didn’t identify in our interviews including project manager, IRB submission writer,
and conference presentation creator. Between our interviews and my observations, then, I can see that Wendy has had the space to practice all parts of the research process over time.

In addition to thinking about her roles on the RC team and how these roles help her move forward, Wendy reflected many times on Ashley’s mentorship and how Ashley became the mentor that she is today:

I don't know if it's her being young. I don’t know if it's her being a woman. I don't know if it's a combination of both. I don't know if she had a really great advisor. Actually, I got a chance to meet her advisor when we presented [at a conference] and she was really excited to see her and typically you aren't really excited to see people you didn't think were awesome…Loved people love people.

Holly spoke at length about shifts in team composition, direction, ethos, and leadership over time more than anyone else that I interviewed. She used the compelling terms “constellation” and “constellation shifts” several times to refer to the shifting team over time in thinking through shifting roles, workload, methodology, power structures, conflict, norms, regionality, and member makeup. Thinking through “constellation shifts” was theoretically helpful in my work on this project, so I wanted to recognize Holly’s contribution here. In fact, as I organized and collapsed my codes and categories, I used constellation shifts as a major category in my Common Values theme to think through the code concepts of genealogy, change, and evolution and then in development of Strategy 3: Prioritize Long Term Growth and Change.

What Are The Boundaries Of The Team And Who Counts As A Member? Holly’s thinking about constellation changes led me to an insight about this project that is also one of the major Disputes/Disagreements represented on the Cartography of Controversies: What are the boundaries of the team and who counts as a member? Relatedly, given that the RC team
indicated that non-members, personal relationships, technologies, policies, and processes all affected their work together in meaningful ways, how might non-members “count” in unofficial ways?

First, it is helpful to identify who each participant identified as a historical member and where there might be agreements and disagreements between the participants. For instance, while Holly, a long-term team member, identified a myriad of team configurations and team members that were professionally and personally important to her in thinking about the RC team and she thought of many of these members as official members. Wendy, who joined the team in 2021, saw herself and Ashley as the only two RC team members. While Ashley recognized that she and Ashley interacted with Holly, Jessica, and the community partner school system representatives, she didn’t see any of these other actors as members of the team. Ashley, on the other hand, thought of the RC team as including these core members - Monica, Ashley, Holly, Jessica, and Wendy - but also recognized that the team had also included non-core members. Unlike the other participants, Monica focused on her time as the originator and leader of the team rather than identifying members. Since each participant thought about the team and team membership in very different ways, this is still an open controversy for the RC team. In addition, this controversy brings up several questions for research teams in general: How do research teams tell the stories of their genealogy and evolution over time? How might research teams help new members understand the history of a research team? How do new members integrate these stories into their own time on the team? To what extent does a historical understanding of a research team and its research portfolio matter to differently positioned members? Although this work opens up the boundaries of a team in ways that increase the complexity of relationships
across time, increasing and embracing complexity is a shared commitment of both critical feminist (Goodkind et al., 2021) and actor-network theories (Latour, 2005).

Second, it is critical to identify other actors: Non-members, personal relationships, technologies, policies, and processes and how they acted agentially alongside the official team members. The actor-network portion of the Cartography of Controversies maps out these actors as well. Here, it's important to note again that according to Latour (2005) all actors should be considered equally able to act in an actor-network, including non-human actors. In other words, each of these actors has the potential to act upon the emerging network in meaningful ways. The table below describes other actors identified by the RC team and some of the agential roles that they served alongside the RC team:

**Table 2**

*Non-Human Actors That Acted On The RC Team*

<table>
<thead>
<tr>
<th>Type of Actor &amp; Name</th>
<th>Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Documentation/Technology: IRIS Software</td>
<td>IRB proposal and approval; Communication with research analyst</td>
</tr>
<tr>
<td>Project Documentation/Technology: Google Drive</td>
<td>Cloud-based, real-time collaborative word processing and file organization</td>
</tr>
<tr>
<td>Project Documentation/Technology: Webex</td>
<td>Interactive video conferencing</td>
</tr>
<tr>
<td>Project Documentation/Technology: Box</td>
<td>Cloud-based, real-time collaborative word processing and file organization</td>
</tr>
<tr>
<td>Project Documentation/Technology: Dropbox</td>
<td>Cloud-based, real-time collaborative word processing and file organization</td>
</tr>
<tr>
<td>Policy: IRB Requirements</td>
<td>NIH guidelines that must be satisfied and that structure the IRB form</td>
</tr>
<tr>
<td>Policy: Grant Guidelines</td>
<td>Various grant guidelines that must be satisfied to be considered for funding</td>
</tr>
<tr>
<td>Required Process: IRB Review Process</td>
<td>Internal communication and compliance process for IRB approval</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------------------------------------------------------</td>
</tr>
<tr>
<td>Required Process: PhD Process</td>
<td>Structured timeline and requirements for attaining a terminal degree</td>
</tr>
<tr>
<td>Process: Promotion &amp; Tenure</td>
<td>Structured timeline and requirements for attaining more senior levels as a faculty member</td>
</tr>
<tr>
<td>Process: Fulbright Process</td>
<td>Process that Wendy had to work within while in Rwanda and working remotely as a GRA</td>
</tr>
</tbody>
</table>

To illustrate the fuzzy boundaries of the team, I will now present a critical discourse analysis of Cayuse iRIS, the research software that the RC team uses at Large R1 Southern City University to create their proposals and communicate with the research analyst assigned to their projects. In this analysis, I demonstrate how the software itself, the forms and communication flows that it contains, and the assigned research analyst working on the team serve as unexpected human and non-human actors that join the team in their work and serve as temporary members. I ran this analysis using Grbich’s method (2013). In this method, the researcher identifies and analyzes both the frame and the text and answers structured questions within these two areas:

**Figure 12**

*Grbich’s Critical Discourse Method*

- **The Frame**
  - Structural Elements: How is the document or conversation constructed?
  - Authors & Participants: Who is included & excluded
  - Discourses: What is included & excluded?
  - Overall Frame: What message does the overall structure convey?

- **Textual Elements**
  - Topics: What topics receive the most attention?
  - Topics: How are different topics talked about in different or similar ways?
  - Speech & Writing By Role: Who talks or writes the most? What topics do folks
with different roles focus on? How do folks indicate their respective positions of power through speech or writing?

- Tone: How does the tone shift over the course of a speech or writing event?
- Assumptions: What assumptions are taken for granted?

The Frame

The “Reimagining Citizenship Online” IRB application was co-created by Ashley and Wendy, with Wendy as the original submitter and main writing contributor. The application was created in iRIS, one of large public state university’s research management systems. The figures below shows the typical setup of iRIS when opened and then an expanded “Completed Submissions” workflow:

Figure 13

*iRIS Home Screen and Completed Submissions: Reimagining Citizenship Online*
After clicking on the “Study Dashboard” icon, users are then brought to the “My Workspaces” page where they can perform a wide variety of actions within an individual study application.

For instance, clicking “Study Application” brings up a page where the user can see different versions of the RC study. Here, the system shows that Wendy created the first version of the study while Ashley created the second.

Figure 14

My Workspaces Page and Study Application Page
On this same page, clicking “Compare Two Selected Versions” sends the user to a pop-out that can be viewed or printed. This pop-out places Wendy and Ashley’s versions side by side. In this way, the two versions can be easily compared but only differences are noted. Deletions are highlighted in pink with strikeouts and additions are highlighted in green. The user can then use the scroll bar and arrows to make their way through the differences between the two application versions.

**Figure 15**

*Comparing Wendy’s and Ashley’s Versions*

The Study Assistant also allows a researcher to view the status of their application as it moves through the system, including detailed responses. In the first image below, the system indicates that this study was approved in 32 days after undergoing 3 rounds and two responses from the research analyst. The second image shows an example of the analyst’s response to the team.

**Figure 16**

*Workflow Submission Tracking and IRB Response Form*
The iRIS application is structured by the iRIS software itself, which was developed using the required NIH guidelines. Since iRIS was built to comply with these guidelines, Wendy - and then Ashley - had very little structural freedom as they filled out the application. The iRIS application contains these sections:

**Figure 17**

**IRB Application Sections**
As indicated above, iRIS shows that Wendy authored the first version of the application and then Ashley edited her version. The first version - created on 12/03/2022 - lists Wendy as the author and the second version - created on 01/10/2023 - lists Ashley as the author. Both versions list Ashley as the primary investigator. Student participants were not included in the authorship of the application, but did receive a copy of the associated informed consent document when the study took place. In addition to the IRB authors, the presence of the research analyst is also documented on both versions of the application. Although she does not contribute to the actual composition of the application, she does play a critical role in providing feedback to the team that they incorporated into their second version. Overall, the structure of the IRB process and the IRB application specifically create a complex network of shifting power, ownership, and opportunities for agency as the RC team members and the analyst interact within the constraints of the regulatory system. Most notably:

- **Single PI**: Ashley and Wendy share responsibility for the project, but Ashley holds ultimate responsibility as the single primary investigator listed on the study application. In contrast, Wendy is listed as Research Support Staff. This iRIS documentation of responsibility is regulatory and is not necessarily indicative of intellectual contribution.
For instance, a faculty member may be listed as the PI in iRIS but a graduate student may be listed as the first author on the publication born from the proposal. NIH does allow for multiple principal investigators (USDHHS, n.d.). Although Large R1 Southern City University also allows Co-PIs and for students to be named as PIs, this application indicates a traditional approach towards responsibility by Wendy and Ashley. Thus, iRIS does open up possibilities of ownership and agency in its design.

- **Exposure and Erasure of Roles:** On the Study Assistant page, iRIS documents Wendy as the Form Author. However, as displayed in the proceeding screenshots, iRIS centers the role and name of the PI at all times (here, Ashley) at the top of the page. Other researcher roles - like Wendy’s Research Support Staff Role - are invisible unless the user opens the application itself. To view the name of the research analyst, a user must drill down into several levels of Submissions History, Workflow Submissions Tracking, or IRB responses. This structure, thus, centers the PI as the primary role. In this case, the design of iRIS creates a hierarchical power structure.

The IRB application is a space of compliance - specifically, the questions that it contains are required by law and were developed by the NIH to reduce harm. These requirements were developed by a group of medical research specialists and are not contextual or customizable; moreover, they were developed for researchers to see and respond to - research participants, who typically come from less powerful communities, were neither involved in the development of the NIH requirements nor are they typically involved in seeking IRB approval (Henderson & Esposito, 2017). Thus, the IRB application enforces a western, medical-science-based definition of harm and harm reduction. This reductionist approach to harm undoubtedly harms many participants in ways that we can not know (Henderson & Esposito, 2017). Overall, the
application is not a space for uncertainty, questions, or researcher choice, much less participant access or interaction.

Although the IRB application and the related approval process is standard and informed by defined NIH guidelines, it is nevertheless a space of uncertainty and mystery for many researchers. The process of approvals, in particular, was a topic of conversation for the RC team as they worked on this application together in a recorded meeting that I observed. Both Ashley, a seasoned researcher who has published many IRB-approved studies, and Wendy, a more novice researcher, used similar language when discussing the behind-the-scenes working of the IRB office and their hoped-for study approval:

Wendy: Are we still considered an expedited category?

Ashley: Uh, so those are always tricky and honestly, I would just submit it and see what they say.

Wendy: As you already know, I'm always like, triple guessing - that's the 2nd guessing - but triple guessing myself. So this part is affirming that kind of place where I'm, like, “Yeah, we'll see what happens”. That’s cool.

The overall structure of both the application form and the Review Response Form sends the following message: “There are many standard, detailed rules and regulations that you must meet to our satisfaction before you continue”. As mentioned previously, the IRB process is standard and geared toward protecting human bodies from measurable harm. For educational researchers working from an equity lens - like Ashley and Wendy - there is no application form or process customization to help reduce other types of harms to participants or the team itself. Moreover, this lack of customization forced Ashley and Wendy to comply with an application form and process that aren’t necessarily a good fit for their individual and shared values, theories,
methodologies, methods, or ethical perspectives.

Textual Elements

Given the regulatory nature of the IRB application, topics covered include those required by the NIH. The templated, interactive IRB Review Response Form only identifies errors in the application or areas that need more attention or development. These are called Stipulations. All Stipulations that the RC team received are accompanied with red text indicating that the “Stipulation must be addressed”. iRIS does not seem to allow the analyst to praise good work via this templated communication - this form exists only to point out problems. The RC team interacted with this form multiple times as their analyst found errors and sent stipulations.

The role of individual application authors is untracked by iRIS. In other words, if both Ashley and Wendy composed the actual words in the different submission boxes, their individual contributions are unknown. Based on the history of submission, iRIS assumes that Wendy wrote the first version of the application and Ashley wrote the second revised version based on the significant writing work of Wendy. Thus, while the positions of power are flattened, the trail of ownership is obscured.

On the IRB Review Response From, the analyst begins all conversational topics (Stipulations). The RC team responds to these. Neither the analyst nor the RC team member(s) responding to the Stipulations are identified by name. There is no mechanism for the RC team to begin topics themselves - all conversation flows from the analyst and this is an indication of her power. Following Gibson et al. (2014), the analyst more specifically wields expert power, legitimate power, and reward power. In other words, the analyst uses her knowledge of IRB compliance policies and her compliance role to distribute rewards to research teams. In this case, that reward is being allowed to start the research. In addition, the RC team does not have the
option to not comply - they can not stay silent on a particular topic or ignore the response form altogether. If they were to leave the overall form or a stipulation unaddressed, then they could not proceed with their research.

The application and the review response form are very formal in tone and remain so throughout, with the analyst using clear, direct language to indicate what action the RC team needs to undertake to satisfy a stipulation. The analyst does use “please” several times. The RC team responds in an equally formal tone.

The iRIS IRB application and process assumes experimental medical research as a way to reduce bodily harm. Other types of harms are underdressed. Discipline level differences related to research questions, worldviews, theories, methodologies, and reporting traditions are unaddressed.

The review response assumes that the stipulations written by the analyst are correct and must be satisfied. If they are not, then the RC team can not proceed with their research. In this way, the analyst contributes significantly to the reality-construction of this project and of the larger team. Not only is the analyst serving as a quality control gatekeeper, but is also actively training the RC team for future submissions. Thus, the analyst serves as an additional and ultimate leader who wields a great deal of power, but is not recognized as a team member.

“I Really Needed To Hear That Today!”: Supporting Each Other Through Evolving Lives and Careers. In addition to embracing role evolution, theorizing team changes over time, and recognizing fuzzy team boundaries over time, the RC team also focused on personal change. For example, in a meeting from July 2023, Ashley and Jessica met to discuss a project. Although a majority of this meeting was related directly to the project, the two also discussed their children before they remembered to hit record (they let me know this in the recording!) and chatted about
their emerging academic roles at the end of the meeting. Since Jessica and Ashley were both doctoral students on the RC team before moving into a postdoc and faculty position, respectively, their exchange is critical to understanding how women researchers support each other over the years as they move into different career stages. The two move through several topics related to professionalization and the hidden curriculum of the academy, supporting each other in turn as they bring up challenges and opportunities:

Jessica: [On sending in an article that was rejected] I guess I didn't understand it as a first gen, who has never sent in an article in for publishing, right? I was like, okay, I'm just going to send something in and see what happens. Right?

Ashley: I think that it’s so great that you did that and honestly rejection and even if it was a good fit for that journal, rejection is such a part of the process. Yeah. And the thing that you have something and you sent it out and now you can send it off somewhere else.

Jessica: Yeah, and the good thing is, I did get feedback on that and they said this would be good for this kind of journal article that you have. So I only sent one of my [dissertation] chapters in, which is more social sciences.

[More Talk]

Ashley: I would actually love to read your work if it would be helpful to get someone to sort of take a look at things before you send them off. Yeah, anything more, like ed space. If you have anything more ed space, I can probably be more helpful, but in general, I'd just love to read it. So, um, sometimes getting feedback is helpful. Even if they're outside of your field.

Jessica: That would actually be really helpful because I was working on an article for them already, but, um, didn't feel like it was good enough to send. So, that's why I
decided to send the chapter instead. Um. So, yeah…I haven't worked on it since because I was kind of defeated. So I was like, oh, whatever. Um, but when I have time to look at it again and feel - maybe we could swap in August.

Ashley: Send it to me, that sounds great. Okay. Wonderful. I'm excited to read it.

Jessica: All right. Wonderful. Well, how's work? How's academia? How's summer's been?

Ashley: Kind of weird. I've been getting a lot of work done, a lot of grants coming, which is really exciting but, um, it feels like the grant process gets in the way of research. So, I don't feel like I've accomplished a lot, even though I now have the money to accomplish things. So I'm both incredibly grateful and excited about the future. And also just like -

Jessica: (Ironically) Why does the grant process exist?

Ashley: Yeah, but, um. Yeah, so I'm excited to get started on those projects now that I just got an email today that the data for one of, like, the big, like, learning environment things that I'm studying, um, all the data just got clean. So I can actually start doing some, some analysis.

Jessica: I want to say that you are inspirational. Like, I know you do so much, like, yeah. So even when you - the grant process, and I also don't want to dismiss that, that is overwhelming. But, like, wow. I'm always impressed. Okay. I mean to have that in addition to the [research] work.

Ashley: I don't know why, but I really needed to hear that today!

Jessica: It makes the work like - you know, you're, you're up to date, right? Like, you're, you're on, you're on the, you're on the wave, right? Like, you know what's up, like, you - and that's what's important, especially for doing work for equity, right? It's important to know. Right, right I don't know. It makes me I - I always love to - Yeah, it's one of the
reasons I like working with you, right? Because it's - from what I see, you're always on your game, but also, I don't want to put any undue pressure on you because I-

Ashley: I'm not always on my game, but I do appreciate feeling like maybe I am - minus the wet hair!

In this extended excerpt, Jessica and Ashley demonstrate several of the most common values that I found in my analysis. First, they worked through uncovering the hidden curriculum of academia together as they discussed the sometimes mysterious standards of journals. Next, they showed each other reciprocal support: They each offered to read the other’s work outside of the work that they are doing together on the RC team. Finally, Jessica offered Ashley words of love and support - “you are inspirational…you know what’s up…I like working with you” while at the same time recognizing that the pressures of academia can be intense - “I also don't want to dismiss that that is overwhelming…I don't want to put any undue pressure on you”. This is friendship.

**Strategy 4: Prioritize The Personal**

“Prioritize The Personal' is a strategy original to this study. I define this strategy as the extent to which each team member and the team as a whole centered personal lives during their time on the team instead of prioritizing their labor on the research team above all else. Nocco et al. (2021) don’t include this as an overarching strategy, but do gesture towards it by recommending that “[project leaders] should…discuss with mentees how they can adapt and pivot mentee research goals to accommodate personal, professional, and seasonal constraints (p.4)” and that project leaders should consider flexible schedules for individuals based on caregiving responsibilities and medical needs. In addition, as discussed in Strategy 2: Promote Well-Being, Nocco et al. (2021) do strongly advocate for “set[ting] an example by making
visible & vocalizing PL work-life balance practices'" (p.7). However, these recommendations, once again, are aimed at project leaders only within the unique scope of the pandemic and in reference to lab and fieldwork within the ecological sciences. The authors do not consider how virtual research team members of all roles and levels might contribute to personalizing the experience for themselves or each other, nor do Nocco et al. (2021) call for a radical rethinking of priorities in the same way that the RC team members did. For this reason, I have constructed “Prioritize The Personal" as a major strategy. In their 2015 literature review, Gibson et al. (2015) found that virtual team work contributes to more prosocial behavior; my findings back up this finding within the sphere of the personal and personalization.

The RC team prioritized the personal in ways that materially affected their work together. In my work, I found evidence that the RC team practiced these personal prioritization practices:

- Prioritizing caretaking roles over researcher roles
- Centering close virtual relationships with team members
- Frequent, vulnerable sharing of personal stories to create bonds
- Recognizing and reflecting on the agential role of children on the work of the RC team and in their personal lives

Turning to the Cartography of Controversies, these practices were complicated by several open disagreements/disputes that always structured the work of the RC team:

- What is the team and who counts as a member?
- How can we balance personal and professional flourishing?
- How do we end well and maintain our relationships?

The most relevant ideology here is: *We can all flourish better together across time if we put our holistic well-being first.* The shared team values of Relationships, Rest, and Integration
contributed to the construction of this ideology. Here, integration refers to the ways that the personal and professional converge and diverge.

**Team Friendships and Sharing Personal Lives.** In our interviews, Ashley, Holly, and Wendy all spoke a great deal about the intersection of their professional and personal lives. One especially salient theme in our conversations was vulnerable sharing of personal lives with mentors and friends on the team. These values and behaviors were demonstrated in many of the team meetings that I observed. All study participants spoke extensively about the critical role of multi-directional personal sharing and commiseration in the development of a flourishing virtual research team. This sharing happened in several different directions: from the P.I. to the support investigators, from the support investigators to the P.I., and from support investigator to support investigator. Importantly, this sharing was not just informal - it was built into the regular processes of the team. When she was still a GRA, Ashley described how Monica started each team meeting by checking in with everyone about their well-being and personal lives and sharing her own life. This regular, multi-directional sharing over time helped Ashley open up about multiple life changes and identities:

She shared things that were a little bit more personal…but I was very nervous to tell her I was expecting. That was not really common in my program. And sharing that my husband was experiencing, like, extreme mental health challenges was also not something that, like, in a traditional professional setting I would have thought to share. And so, um, both of those things were things that I initially held back, but eventually ended up coming up sort of gradually. And then through mutual sharing and affirmation, I felt really comfortable and supported in talking about that.
Ashley commented later that she continues this practice of opening meetings with personal talk now as a faculty member and continues to find it humanizing. In addition to being humane, this sharing is undergirded by the team’s commitment to critical frameworks and building a critically conscious team culture.

Like Ashley, Holly spoke about personal sharing and vulnerability as central components to the work of the RC team. She conceptualized this work as “grace” or the practice of realizing that everyone is doing their best, just as you are: “I think this is an active process, but, like, always, assuming people are trying their best because I know that I’m trying my best…So, allowing or bringing that same understanding to, you know, what other people might need”. By trying their/my best, Holly gave an example of being overwhelmed by email, giving oneself grace around response times, and then extending this same grace to the intentions of others. Holly’s conceptualization of grace is similar to that of Nocco et al (2021) in their recommendation to “relax deadlines and exercise grace” (p. 7); however, Holly recognizes that she must give grace to herself as well (similar to Nocco et al.’s self-compassion). Holly extended this concept of grace to reflect on the complexity of working with humans on research teams and the complex lives of differently positioned folks generally:

I think I've also maybe opened up, um, my understanding of what life experiences and perspectives - Hmm - Okay, let me rephrase that…There are people on teams that have a lot of - we all have complex lives. Period. Um, I feel fortunate that this was a team that we could, like, be complex - be really complex - and, like, be open about it and “Here are things that are going on”.

Critically, Holly connected vulnerable sharing of complex lives with the research itself:
That complexity and that ability to kind of, like, be openly complex about it made the research better in and of itself, it didn’t just make the team better. Like, it was a nice place to be. And people were nice, or I should say, kind - the people were…it was a good place to work. But that actually makes the research better because, like, we are social scientists and so we are trying to systematically inquire about stuff that humans are doing and humans are complex. So, us self reflecting, and, like, having open space to be complex, probably makes our actual inquiry better.

I was able to observe several instances of the RC team members talking about their personal lives with one another in both vulnerable and more lighthearted ways. For instance, in an August 2021 meeting between Holly and Ashley, 5% of the meeting time was spent on talking through the continuing pandemic and its effects on the team members’ respective personal lives. In particular, Ashley talked through the stressors of living in a low vaccination but high-cases area, masking a young child at daycare, the lack of vaccine availability for young children, the effects of isolation from other adults, and her worries about the potential length of another lockdown. Holly listened and offered her personal support, “Anytime you need to talk about adult things or brain-full adult things too, by all means. Um, yeah, I mean, the timing I know you've got a lot… moving to a new place and then - you've got a lot of shit going on”. In closing the meeting, Ashley and Holly expressed their affection for each other and their families, sending love to each other and their families. Holly also tied her experience to larger cultural experiences:

I'm sure you read that article about…languishing…languishing is this psychological term and it was like, perfectly describing the link to this moment. Yeah and it's not like depression, but it's languishing. Yeah. And it's like this different level now of languishing
where, like, you know, knock on wood, thankfully, like, you know, the kids, and I don't
know, like, we haven't physically had to deal with it, you know, the four of us, but there's
still this, like, okay, here we go.

Like Ashley and Holly, Jessica and Ashley also discussed their personal lives during the
two recorded meetings that I observed. One on occasion, they talked about their families a good
deal at the beginning of their meeting, but forgot to record the conversation. Talking directly to
me in the recording, Jessica said, “Before this, we had a discussion about ourselves and our
family” and Ashley followed up with, “[We talked about] parenting someone that…has emotions
and needs and you love and it's tough. Um, and then, yeah, that [Jessica] just attended a really
amazing conference, um, and how that helps you reflect. So, um, I'm sure that Sarah can dig into
that in interviews and we can, we can get talking again”. On another occasion, Ashley and
Jessica began to talk about my dissertation work again at the very beginning of a recorded
meeting. Jessica listened, acknowledged Ashley’s ask, and then switched the talk to personal
talk:

Ashley: Process oriented stuff - I had a PhD student volunteer to take that on as her
dissertation. So, every time I meet with you, we're recording it and she'll get permission
from you, but she doesn't have access to any of it yet because she's still getting IRB - but
then she will send out an email and you can choose whether or not to participate - but I'm
just collecting the recordings now, so that when people sign off in the future, we have them.

Jessica: Nice, nice - Before we start recording, is your hair - did you dye it? Your hair.
Ashley: No, it’s wet - it leaves it dark. It looks purple.

Jessica: I love it. It looks, like, lavender. I was like, “Oh, that's awesome!”.
Ashley: [laughing] No. It's like, dirty blonde, like, brown. It's always been.

Jessica: Oh, okay. Well, it looks lavender!

Ashley: Maybe I should've done it!

Jessica: I know. I'm like, “Oh, I like that. It looks good”. But, anyway, so if you do want to dye your hair lavender -

Ashley: Yeah, that's good! But you - It sounds like there's been a lot going on. Um, I mean, you don't have to think about it if you don't want to, but I wanted to at least give space for it if you -

Jessica: Just a lot of traveling, uh, family stuff in Mexico and, um, we're back now, but, uh, yeah, no, it's fine. Everything's fine. It's just normal. Yeah, this stuff. Um, but yeah, yeah, it's good. It's fine. It's fine.

Ashley: Yeah, but it'll be really exciting to have you on this project.

In this exchange, Jessica and Ashley deftly interweave the personal and the professional. Here, I am especially interested in how Jessica stopped the professional talk to pivot to the personal and Ashley followed her lead. This reflects an RC team norm that Ashley talked about in our interviews - spending the first few minutes of each meeting talking about personal lives - that might not have always been present in the meetings that I observed.

Not only were these personal relationships present during the RC team’s work together, but, as discussed previously, team friendships and support continued to extend beyond the lifecycle of the RC team. For instance, in reflecting on Jessica’s exit from the team, Ashley remarked, “we continue to like text and [provide each other] emotional supports and check in on that even when it - even if the research isn't able to come through”. Likewise, Holly shared an example of a continuing friendship with a community partner that she no longer works with:
“Even after people have retired, like - I still text with one of our primary points of contact”. Both of these stories are examples of “using others in the nicest way possible” (Henderson & Esposito, 2017, p. 114). Although Henderson and Esposito (2017) developed this concept to describe more equitable relationships with research participants, I think that it applies here as well. How can research team members and other partners use each other in the nicest way possible after the research is done? Continuing relationships over time seems like one way forward. This practice of the RC team supporting one another personally - both during their work together and after this work has ended - is an encouraging counter to the individualistic, publish-or-perish climate that many researchers experience in higher education.

**Virtual Relationships:** In alignment with Gibson et al.’s (2015) finding that virtual team work is pro-social, all RC team participants that I interviewed described virtual relationships as deep and satisfying. For instance, several participants indicated that working virtually created a sense of anticipation and excitement to see one another in person. Holly shared an anecdote about seeing one of her researcher colleagues for the first time, in person, after working together for five years on the qualitative portion of the team as PhDs and mothers serving in staff research positions:

During South by Southwest, Monica pulled together [virtual team members during a summit, including] Ashley. I came. There was a researcher from Texas, and we'd worked together for, like, 5 years really closely. We really got to know each other; like, we had kids kind of the same age, you know, like that kind of thing. I'd never met her in person …and it was the strangest thing. Like, the thing was already going, like somebody was presenting and she walked in the room and, like, of course, I knew exactly who she was immediately. And, like, even though it was, like, in the middle of the presentation, we
both kind of like stood up and went to the back and just, like, have the, you know, like the
biggest hug, you know, like, wow, it was this human that, like, I really feel like I
know...And, you know, the way that the day went, we only had, like, 20 minutes to kind
of talk but it was...wonderful, you know, it's just like, wonderful that I got to actually
meet her in person and I haven't ever seen her in person since.

Ashley reflected this same sense of closeness and excitement during the same event at South By
Southwest:

When you're seeing each other in the office, you don't miss them, but there was
just excitement to connect [in the virtual environment] and maybe that led into personal
sharing…when you genuinely care about a person, but you're not connecting regularly. It
was exciting when you build a relationship with people when you GET to see them face
to face for the first time…Just because you've gotten to know them really closely.

Ashley also compared this excitement to connect virtually to more mundane face to face
meetings in her current role as a faculty member: “I don't think, like, professionally in face to
face meetings there has been excitement and connection [when compared to my experiences
virtually]”. This suggests that the connective nature of virtual research teams, in particular, open
members up to flourishing through mutually satisfying vulnerable connections.

These two stories of the face to face summit also illustrate one of Nocco et al.’s (2021)
well-being strategies: Foster team-building opportunities. Although the RC team did the vast
majority of their work online and found the virtual nature of this work necessary and welcome
(See Strategy 5), Monica set up this opportunity for them to meet and bond in the same space.
Emerging research in the wake of the COVID pandemic suggests that occasional face to face
get-togethers for celebration and socializing can complement virtual work by creating psychological safety (Feitosa & Salas, 2021).

In recorded Webex meetings, I was able to observe Ashley, Wendy, Holly, and Jessica building their relationships virtually many times in each and every meeting. These moments of connection involved a complex interplay of professional and personal sharing and the nature of the moments differed depending on the nature of the individual relationships and power differentials. For instance, in early meetings, Ashley and Wendy work to find common ground through mentorship and finding common kinship through shared behaviors. In a meeting from January 2022, I observed Ashley and Wendy talking through an upcoming AERA presentation; Wendy was planning to practice this presentation in front of her fellow students in a PhD class that Ashley teaches. Ashley asks Wendy what kind of support she might need before or during the presentation:

Wendy: I speak very rapidly because my brain moves rapidly so that'll probably be the flag I need, because it does not sound fast to me.

Ashley: Yeah, I have a similar issue.

Wendy: I just remember, even the last presentation I gave in my Qual class, I happened to look at her and she was like [looks bemused]...I had to make a very conscious effort because it did not feel fast.

Ashley: Oh, so one thing that might be helpful is, a lot of time, PowerPoint slides, you know, there's like, 3 to 4 bullets on a page, and you can sort of use that to be like, okay, I'm going to take a breath in between talking about each bullet. Okay, and then you can sort of slow the pace a little bit that way. Um, I've also found that, like, telling yourself to talk slower helps you talk more slowly. Um. It might feel slow to you, but to the
audience, you know, it doesn't register that way because they're processing the information for the first time. Um, so you can, like, overcompensate in practice and then, um, it goes a little bit smoother.

Wendy: Okay, duly noted…this has literally been coming up since 1st grade.

Ashley: I will say that I continue to talk pretty fast just in general when I teach or do presentations and haven't had any big complaints, just people mention it every once in a while. So if that's your biggest concern it's going to be okay.

Wendy: Okay!

Here, Ashley shares that she has a common behavioral pattern (talking fast), offers Wendy some pragmatic advice on how to slow down for an audience, but then importantly affirms Wendy’s - and her own - natural way of talking as acceptable in the academy. Interestingly, Ashley discussed the patterns and cadence of how she and Wendy talk with one another specifically in our interviews as an indicator of being refreshed and recharged, two components of flourishing.

So the like, physical markers of, like, a sense of calm. So probably not talking too fast unless it's because they're excited and you can tell the difference between excited versus, like, oh, my god. I just rushed in from like, another meeting or from the child crying or from, like, [a difficult personal situation]. There's like patterns of speech and like, with Wendy, specifically, she tends to be a fast talker but, um…There's like a lightness to it when she's excited about something or when she's feeling engaged she'll often talk slower…
Thus, Ashley recognizes that “fast talking” means something specific for Wendy versus other researchers that she interacts with. She could not know this without engaging deeply in virtual relationship with Wendy.

Importantly, these virtual relationships continue years after the participants began working together outside of the domain of research projects. Ashley said:

[Virtuality] definitely did not inhibit the development of really close relationships on the personal and professional level. I would say Holly and Monica and my relationships were research productive, but also, I feel very close to them and every time we're in the same city or, you know, at a conference or whatever, we're always checking in and sometimes just virtually checking in on the personal level. [With Jessica] I haven't published as much with because there's been a lot going on, but we continue to text and the emotional supports and to check in and all that even if the research isn't able to come through.

**Centering care and caregiving instead of research work.** As discussed in Ch. 2, women working in academia are still expected to take on the majority of caretaking roles at home and in the workplace (Docka-Filipek, & Stone, 2021; Guarino & Borden, 2017; Hanasono et al., 2019). At work, women are not only expected to care for students but also their colleagues (Acker & Feuerverger, 1996; Ashencaen & Shiel, 2019; Bird, Litt, & Wang, 2004; Docka-Filipek & Stone, 2021; El-Alayli et al., 2018; Knights & Richards, 2003; Tierney & Bensimon, 1996). These expectations and the work that follows can have negative effects on the long term career prospects of women in academia (Wolf-Wendel & Ward, 2006). Although the women on the RC team recognize these structural expectations and potential consequences, they constructed a much more complex picture of the pleasures and perils of caregiving than the literature suggests. In fact, centering care was a major practice that all participants discussed. I’ve already discussed
elsewhere how the team members actively cared for one another, but the role of children was of particular importance. For instance, in discussing her transition to motherhood, Ashley said, “I surprisingly loved being a Mom. Like, my identity shifted at the moment she came out. And I thought I would struggle with that and I didn't at all. I loved it”. In another interview, she indicated that this role continues to satisfy her over all others: “My primary identity, and, like, sense of purpose right now is as a parent”.

Moveover, the RC team participants suggested that those that they care for impacted the RC team in unexpected ways. All 4 participants spoke extensively about the role of children in their lives and how these children indirectly - and directly - affected the history of this successful research team. Due to this common theme, I have included children in the Actor-Network diagram as actors. RC team members talked about the agency and impact of children on the team in 3 ways: 1) as philosophical motivators and beneficiaries, 2) as subversive actors who interrupt the work of the team, and 3) as constructive actors who add to the intellectual work of the team.

First, and perhaps unsurprisingly, children served as philosophical motivators as the RC team worked together to create more culturally sustaining and affirming classroom experiences for minoritized and marginalized kids. For instance, Wendy reflected on the role that her nieces, nephews, and children of close family friends played in her decision to get a PhD and pursue research in this area, along with how they help her continue in her studies,“[My niece] is literally why I'm here, in so many ways…I think of my older niece, too, who's developing her own challenges with school right now, but we get to talk to each other about our school stuff together...we're doing it together. We're doing it at the same time”. Wendy not only discussed the children in her family as motivators and learning partners, but extended this thinking and doing to the children of her close friends:
They're also part of my well-being, I can think of some days where I was frustrated or that were hard days [doing research]. I was kind of over it. And I can call their Mom and be like, hey, can I come there? Baby snuggles? And being able to just kind of sit with them reinforces my purpose in doing all of this. Yes, this is a frustrating moment, but they are the long term goal, like, creating these spaces for them that are nurturing of their whole person, so they can have beautiful embodied experiences in their education, is a part of why I'm doing this. And again, it helps to remember that being a researcher on a research team - it’s part of my life, but it's not my whole life.

Second, participants with their own children talked about children as subversive, interrupting actors. This concern came up during our discussions of family planning during graduate school, pregnancy, early parenthood, transitions from graduate school to professional positions, while doing virtual research team work, and in mentoring others. As the participants talked through their experiences on the Reimagining Citizenship team - and other virtual research teams - they worried that their children would be seen as a negative interruption as they appeared during video conferencing meetings. In particular, the RC team members worried that their children might be seen as a sign of anti-professionalism and, since women still take on the majority of care, serve as an identity risk to the professional self. However, Ashley stressed that this identity risk wasn’t present on the RC team: “So Jessica is a parent, um, and she will have her son on calls and that's great - he's very well behaved. That's never been an issue. I mean, maybe she's, like, had to walk away for a little bit, but then you just give, you know, however much time. And that's fine”.

Finally, participants with children indicated that their children were actively affecting virtual research team work in positive ways. In fact, participants often described their children as
actively participating in team meetings. According to Ashley “when my daughter is with me [I think in a way that is] conducive to, like, deeper intellectual thought, as opposed to, like, let's get through business and end this meeting”. Likewise, Holly discussed all of the ways that her children act as agential actors in her research work, often to the point of direct participation.

First, Holly’s children have come into the field with her many times and have observed her doing data collection and even helped out:

I mean, they are at work with me a lot and yes, they have actually done data collection with me before for an evaluation project. I do a lot of work in the Midwest with youth evaluation teams and so they…When they were younger, I mean, all those youth evaluation teams were after school obviously. So there were a lot of times they had to go with me and sit in the corner. So, like, they, they know. When I say, “I was doing data collection and doing observation”, they kind of know what that means.

Second, she described how her children show direct interest in her research by initiating conversations:

My kids know that one of the things I study is online learning. So they'll come back [from school] and say, like, “Hey, I know you study online learning - we have this new thing that we're doing”. And then I'll, like, have this conversation with them…I will ask them to show me what the platforms are that they use and then I'll have these questions.

Third, Holly’s children have directly contributed to the trustworthiness of a study by acting in a training video:

One time, we were figuring out one of the data collection instruments and it must have been an observation instrument of some kind. I couldn’t find a video of a student engaging in an online learning platform that we could use for reliability training…So I,
video recorded, like, 10 minutes of my kid interacting with one of the many platforms that they use and then we used that. Since children very obviously have agency, have schedules and needs that affect research team work, and often appear as participants in meetings or actually come along in the field/help with conceptualizing or data analysis or in observing observers, children act as unofficial junior RC research team members. In these ways, kids serve as human actors, but not official team members, aiding in the work of the team both materially and philosophically.

**Strategy 5: Prioritize Agency & Ownership**

“Prioritize Agency & Ownership' is a strategy original to my study. I define this strategy as the extent to which each team member was able to intellectually and practically contribute to the study regardless of role, in the ways that they desired, and receive credit for these contributions. Although Nocco et al. (2021) gestured towards this strategy by recommending that project leaders, “ provid[e] resources and flexibility based on individual needs and defin[e] expectations based on individual goals and experience separate from PL career goals”, they did not elucidate this recommendation further. On the other hand, the RC team prioritized agency and ownership in ways that directly impacted their work. In my work, I found evidence that the RC team practiced these agency and ownership practices:

- Empowering each other to create individual pathways based on available options
- Uncovering the hidden curriculum of academia with peers and with mentees
- Using mixed fidelity digital technologies for professional preparation, cognitive mentorship, personalized mentorship, and for creating options.
- Sharing power over time and across roles, even when this is uncomfortable and creates conflict, instead of creating a hierarchical system
Empowering GRAs to shift the future of team projects and priorities
Working together to identify and strategize about disempowering incidents
Encouraging pushback

This strategy and these practices are well-supported by existing research on how graduate departments can support students in their career pathway exploration, including legitimizing multiple career paths (O’Meara et al., 2014), how individual students regain agency after disempowering events (Perez, Robbins, & Montgomery, 2020), the long-term potential of reflective mentorship on mentees and mentors (Geber & Nyanjom, 2009; Ronsten, Andersson, & Gustafsson, 2005) and how flexible power dynamics create more innovative work on research teams (Evans & Sanner, 2019; Xu, Wu, & Evans, 2022b).

Notably, this strategy was heavily supported by non-human technology actors. I will integrate the contributions of Google Docs, Webex, and iRIS in this section to describe how these actors supported the team in flourishing through ownership and agency.

Turning to the Cartography of Controversies, these practices were complicated by several open disagreements/disputes that always structured the work of the RC team:

- What is the team and who counts as a member?
- How can we work with corporate educational entities that prioritize profit over culturally affirming learning?
- How can we balance personal and professional flourishing?
- How can we move forward with different levels and types of resources over time?
- How can we support team members with different roles and different career pathways?
- How do we end well and maintain our relationships?
The most relevant ideology here is: *If we resource under-resourced people and communities, they can help produce long-term social change.* The following shared team values, developed through my thematic analysis of all sources of data, contributed to the construction of this ideology: Constellation Shifts & Agency. As indicated in the full coding table, Agency includes subvalues such as options, appreciation, and being open to conflict.

**Empowering each other to create individual pathways based on available options.**

Nocco et al (2021) urge project leaders to provide options and flexibility for more junior members, but did not recognize the agency of all team members in constructing their own pathways outside of traditional research team hierarchical power structures. Although the mentor and mentee relationship played a prominent role in the stories that the RC team told, all members recognized their own agency and how they might help each other flourish.

Most prominently, Ashley discussed becoming a mother during her graduate studies and parenting a small child on her own as she dissertated, went on the job market, and then moved across the country to begin a faculty position at Large R1 Southern City University. When Ashley became pregnant and gave birth towards the end of her PhD, she experienced a range of difficulties from the pregnancy along with the dissolution of her marriage. Although this was an extremely challenging time for Ashley, both Monica and Holly were great professional and personal advocates at all stages:

I had really bad pregnancy nausea through the first 5 months…In my program, the guys were having kids all the time. So few women in my program had been pregnant…my closest friends just, like, didn't have any understanding of what I was going through. It felt a little isolating. Um, but Monica was great. Whatever I said, whatever I wanted, she supported me.
Two prominent concerns for Ashley during her pregnancy and after were continuing to work towards her PhD and building a portfolio of publications: “It was really important to me…this is not going to affect my productivity”. Monica and Holly offered two different responses to Ashley’s plan to continue working at the same level:

When I told Holly that [I didn’t want my productivity to be affected] she's like, “It will be. And you'll be okay with it - you’ll see”. Monica was just like, “Yeah, that's great. You come back as soon as you want. I'm not taking papers away from you…those spaces are always available for you to jump back in” and ultimately both of those responses were really helpful.

Ashley contrasted these two open, supportive responses to that of a male faculty member who suggested that she step away immediately and pause work towards her dissertation. In reflecting on the male faculty’s response, Ashley said: “I also took a mental note that if…my students were to tell me they were pregnant, I was not going to suggest that…I was going to give them the full range of options and tell them to pick and that I would support any of those options”.

Like Ashley, Wendy focused on designing her own pathway through her PhD and future career. Unlike Ashley, Wendy isn’t committed to a faculty position in academia yet:

[My plans for after graduation] are firm like jello, not like brick…I believe that I want that to be in academia, but I am open to that changing…I really want to train teachers…I obviously want to work with educators. Because even people who get introduced to the concepts of culturally sustaining pedagogy very rarely get to have it scaffolded and implemented - what they've been introduced to - which decreases their likelihood of using it…I want to work with governments around the world [in implementing culturally sustaining pedagogies]. What does that look like in places that
feel more homogenous? What happens if an Israeli school has positive teaching around Palestinian culture and history? I think because of my bigger approach, I would probably be more likely to work with universities because I also don't want to be beholden to, uh, what's happening in a certain school district, right?

Wendy enacted this exploration of her options, her pathway, and her agency during her PhD in several ways. Most notably, Wendy pursued and won a Fulbright Scholarship to teach English in Rwanda while still T.A.ing classes and serving on the RC team with Ashley. This took her out of the country for 9 months and placed her in the unique position of being a remote team member and teacher in another time zone with additional responsibilities.

As Wendy designed her own pathway, she worked with Ashley as her advisor, mentor, and supervisor, to explore how she might best proceed across weeks, across semesters, during her graduate experience, and after: “[Ashley] was very open in sharing her process and what really works for her. She was [also] so open to me being really represented in mine. She's not making mini-Ashley. She is allowing Wendy to flourish”. Ashley discussed this same ethos in her interviews with me. For instance, she reflected on Wendy’s path versus her own:

And then, like, choices too, like, Wendy went and lived in Rwanda for 9 months, which is amazing and wonderful but, you know, I wouldn't have thought to travel internationally during my program, because it would have taken me away from my research. Um, so, yeah, just like different things pulling different directions. I came into my PhD program being, like, I need first authored publications so that I can get a tenure track job. And that's not necessarily everyone's goal and if you're not going into academia that first author position doesn't matter as much.
In recorded meetings, I was able to observe Ashley giving Wendy space to develop her own pathway in small and large ways. For instance, Ashley almost always started research team meetings by asking Wendy how she would like to move through the agenda: “Of all the [research] assignments you worked on, do you have a preference of what you want to talk about first?” In a meeting from January 2022, Ashley shared her personal research project tracker on screen with Wendy and talked through her thoughts on how to strategize a successful faculty career. Thus, In the partnership and mentorship between Ashley and Wendy, then, Ashley’s commitment to offering and supporting the full range of options of her mentees came to fruition.

**Working together to identify and strategize about disempowering incidents.**

Although this study focuses on the successes of the RC team, not all of their individual and collective experiences were positive or empowering. As discussed in Chapter 2, the academy harms women, including women with multiply marginalized identities, as they experience professional inequalities related to hidden professional expectations (Villanueva et al., 2018) and overtly racist, sexist, and classist promotional schemes (Haney, 2015; NCSES, 2021).

Importantly, graduate student researchers tend to respond to disempowering events in individualistic ways (Curtis-Boles, Chupina, & Okubo, 2020; Perez, Robbins, & Montgomery, 2020; Spencer et al., 2022) that can especially increase burnout for junior researchers with multiply marginalized identities (Ramos & Yi, 2020; Spencer et al., 2022). In examining disempowering incidents from the RC team, I don’t seek to share doomful deficit or disparity narratives: Instead, I hope to share how researchers can respond to these types of incidents collectively instead of, as Ashley put it, “burning out in silence”.

In describing the most disempowering moment on the team, both Ashley and Holly described the same incident. In short, during Summer 2020, the team - Ashley, Holly, and Jessica
- were in negotiations with an online course provider that had been working with a Midwestern public school system. The team had a long-standing relationship with this school system. After analyzing the company’s curricular materials, the RC team uncovered many opportunities to develop more culturally affirming content. In fact, the team had discovered many examples of racism and sexism in the widely-used, generic online citizenship lessons. According to Holly: “The particular course was really problematic. I mean..this course was flat out racist and this was [while] all of these conversations were happening in Summer of 2020…The vendor was like, “Ooh, we should probably not have super racist content”. The company accepted these initial critiques and offered to pay the research team to improve the content. Although the team turned down the offer of payment, they continued the relationship with the vendor.

In a meeting between the RC team and the company to further discuss possibilities, the discourse of the vendor devolved into a hostile screed that reflected many of the issues that the RC team found in the curriculum. First, the representative turned down all general suggestions by the team. But then, as Jessica, the curriculum expert and proposed main point of contact presented her approach to the company representative, the company representative became angry and lashed out. According to Ashley, “The woman just, like, tore [Jessica] apart and then I stepped in and…said it slightly differently, but was saying the exact same point. And it was a really upsetting situation and I was then really pissed that, um, the woman accepted when I said the exact same thing afterwards”. After this incident, the team met to discuss the future of this relationship. According to Holly, an important product of this conversation was developing structured boundaries around the relationship:

We had a very specific conversation about, like, what are our absolutes around
still partnering with them? What are the conditions under which we would continue working with them? And…what are the conditions under which we're just not? And some of it was around the research itself and some of it was just like, how are they treating us as humans?

Like Holly, Ashley told the story of the disempowering incident and its aftermath:

We had a lot of discussions when we were first deciding whether or not we were going to work with the online course vendor. We felt like that was ethically gray. And we sort of created guideposts for ourselves - lines we weren't going to cross, um, we didn't want to do anything that was slowly just going to, like, give them a profit advantage. We did not want a rubber stamp, something that was, like, low quality. So we, like, very much talked through if we felt like the benefit of having a culturally relevant course was worth engaging with them considering that there was explicitly racist and sexist content in the original one…Progress needed to be made, even if it was incremental, but we spent a lot of time talking about that and then sort of each individually deciding…thinking through what was important and then coming to it as a research team. The decision about that was initially Holly and me and then Holly, Jessica, and me in talking through all of that…we were deciding if we were gonna pull together this like a Spencer grant proposal for the experimental design. And at the time they had also offered to put us on, like, a paid review committee and we decided, like, we did not want to do that. That would fall under… enriching their bottom line and potentially, you know, create, like, ethical issues. We want to just stay firmly on the side of evaluating as an external research [team].
Notably, Ashley, Jessica, and Holly decided to proceed with the vendor relationship after the incident and after their discussions. According to Holly: “We felt like…if we're not in that space, who is going to be in that space? They're not going to invite another research group in there”. Like the RC team, the school district continued the vendor relationship as well but, according to Ashley:

In a recorded meeting a year after this incident, I observed Holly and Ashley continuing to talk through it and reflect on their strategy to move forward with boundaries. Both women continued to question their decision, think about the known and unknown harms to Jessica, and how their school district partners might also be strategizing on how to make their online courses less racist and more culturally affirming in the face of an impending contract renewal:

Holly: [The for-profit online course vendor] was really shitty.
Ashley: Yeah, soooo patronizing, and especially, you know...when [school district representative] was talking...she alluded to an awkward meeting and a response and I was like, oh, my god, I hope they're not treating her the way that they [did us]. And I was like, oh, I bet I know who that was with.

Holly: Yeah!

Ashley: Um, so, a part of me is like, why am I part of a research project that's like, exposing people to that?

Holly: You know, I think I remember Jessica saying - when we were kind of debriefing after it - she's like, “I'm in conversations [where] I get treated like that all the time”. You know, and I'm not saying that then it's okay that then we're facilitating a process where she continues to be or, like, others continue to be, but that I remember that that struck me, like, basically, that’s my, like, my white privilege, right? I'm like, I’m not [treated like that] and there's different layers of privilege, but -

Ashley: In that meeting, I said the exact same thing as her after her and it was accepted.

In this excerpt, Holly and Ashley continue to struggle over the ethics of being involved in this project as well-resourced white women with PhDs and legitimate power working alongside trusted, respected, and loved junior colleagues - Jessica and Wendy - who structurally and continually experience chronic mistrust, disrespect, and hate in the academy, even while they flourish, even when they make the decision to move forward in a deeply flawed system. This is not only a master’s house moment (Lorde, 2007) - or, attempting to survive and flourish within a structurally disenfranchising system - but in this continual conversation, the RC team also
struggle productively with all of disagreements that I include on the Cartography of Controversies:

- What is the team and who counts as a member?
- How can we balance personal and professional flourishing?
- How can we balance care and productivity?
- How can the white women on the team take on anti-racist work while also centering the voices of minoritized women on the team?
- How can we move forward with different levels and types of resources over time?
- How can we work with corporate educational entities that prioritize profit over culturally affirming learning?
- How can we support team members with different roles and different career pathways?
- How do we end well and maintain our relationships?

This disempowering incident and these disagreements also all align with the thinking of other researchers in the academy as we all work within the simultaneously systematically oppressive and potentially liberatory context. Henderson and Esposito (2017) reflected on their own participation in this system: “Whether we do our qualitative research because of our own interests, our definitions of social justice, or anything in between, our positioning in the academy also means that we are part of the institution charged with protecting and perpetuating the settler colony’s dominant narrative” (2017, p.10). In considering how to move forward, they call for researchers to rethink the individualistic, striving self: “...rethinking of self means that we first think of ourselves and others in terms of relation and relationship to the land and spaces around us, and to our families and communities, whether ancestral, assigned, or chosen” (Henderson & Esposito, 2017, p. 3). It is this relational work that the RC team strived for, imperfectly and
continuously, across their chosen community of the differently resourced researchers on the team, the school system, the students that they hoped to resource, the more equitable policies that they hoped to help come to fruition, and the discipline that they hoped to influence.

Unlike Holly and Ashley, Wendy was not present for the 2020 incident with the for-profit online course vendor nor did I observe Wendy and Ashley discussing this particular incident in their recorded meetings from late 2021 and on. Although they did discuss moving on from the vendor and they did eventually break with the vendor, these meetings were concerned with strategy and reframing the research in light of changing resources. At the same time, Wendy did share several stories about disempowerment and moving forward. None of these stories were about the RC team since, as Wendy reported:

To be quite honest, I don't think I've ever felt disempowered. I felt empowered throughout the entire process very much so and well-supported. I very much was able to have the type of experience I wanted to have and do the things that mattered for me from the very, very beginning.

Instead, in thinking about disempowerment, she talked about folks that she was in relationship with from other universities. Like Holly and Ashley, Wendy’s stories considered how we move together through individualistic, imperfect, and structurally disempowering systems in relationship, not alone. She highlighted three narratives, two about other graduate students and one about herself. First, she shared a story about how advisors can undermine their advisees:

There was a young lady who I was in relationship with based on some other experiences and she talked very openly about ways her advisor was trying to sabotage her, because…she did not want to go into academia. Her advisor kept trying to push her to academia and she's like, that's not what I want to do. She has a very clear understanding
of where she wants to go and how she wants to contribute from a global perspective and academia isn’t it. [Her advisor kept] just giving her a more challenging, more difficult time..making her, like, rewrite stuff…just making these small, almost inconsequential changes to stuff, but it created busy work for her. And the last thing a person needs at this point in their journey is busy work: There's enough real work taking place.

Wendy went on to describe how she shared her own experience with the other graduate student:

“I remember every time she would talk about her advisor, it would just break my heart. I'm like, that is just not my experience and she would say, ‘You know, I'm actually really glad to hear other people's experience and that they're positive because I would hate to think everybody's going through stuff like this’”.

Second, Wendy told a story about how advisors can abuse the labor of support researchers instead of working on mutually beneficial research goals:

So, [with another student] the advisor didn't sabotage them, but…a lot of their meetings, and their interactions were about their research that they were doing that supported the advisor…but not actually [the students’ research interest or goals]. They felt really alone in their personal process. And I have never felt that.

Although Wendy felt supported on the RC team with Ashley, she told a third story from her first semester of PhD courses and identified an incident in a research methodologies course as her most disempowering moment. Wendy needed help - and suspected that others needed help - related to an assignment, so she asked the professor for assistance during a break:

I said “Excuse me, are you going to take some time to go over how to write a [research] statement and how to write qualitative research questions?” And her initial response was,
“It's evident that you haven't done the reading”...She's like, really frustrated...and I was taken aback, I've never been accused of just not doing my work. And I was so offended...Like, why would that be the place you came from?...I was deeply offended. Like, how dare you? You don't know enough about me to make that kind of assumption. And I took a deep breath, and my response was, “What is evident is that I am new. What is evident is that this is unfamiliar. What is evident is that I need some help and I am doing what I'm supposed to do, which I asked for. And what also appears to be evident at this moment is that you are not going to give me the help that I need. That's what's evident”. And she paused. She changed the first 30 minutes of [the next class to address my request].

In thinking about taking this risk, Wendy reflected:

I know in particular in my presentation as a human - as a black woman, this larger frame woman, you know, like I said, I'm 6'1' - so, even when we're having that conversation, and I'm standing up next to her, that if I got upset, she could flip. She could flip that really quickly, like, she could have been, like, “You're being aggressive”. Like, you're going to do all those things, which have happened to me [before]?...I want to show up in the world. It's a real risk um, but by the end of the semester...she was like, “I just love you. I hope you know that. I hope you know that you're now one of my favorites. I love you”. And I was like, “Are you sure”?

This is an example of the discrimination and stereotype threat that Wendy faces even in research learning spaces. As already discussed, discrimination and strategies like code switching that minoritized folks use to combat discrimination are persistent and harmful (Neikirk et al., 2023; Rolle et al., 2021; Spencer et al., 2022). I wonder, more specifically, how this incident affected
Wendy’s growth as a researcher? How does it still affect her? What else is happening to Wendy that creates potential haggardness as she tries to exist and grow as a researcher? How can the RC team and Wendy’s future research teams work together to address discrimination in research spaces? How might early research and professionalization experiences in graduate school help or hinder the future flourishing of junior researchers as they move through the academy and gain power? How might teams more generally work towards policy change together so that individual people and individual teams don’t have to deal with incidents that harm their members?

“I Didn’t Get Smashed Down”: Productively Pursuing Moments Of Agency As Junior Researchers And Reflecting On These As Mentors

In the previous section, I discussed the ways that the RC team members move through disempowering moments together - and sometimes on their own - through their different positionalities. Although the literature suggests that junior researchers, like graduate students, experience a range of harmful effects from the entrenched structural systems of academia (Neikirk et al., 2023; Rolle et al., 2021; Spencer et al., 2022), the RC team shared many more empowerment stories than they did disempowerment stories. Notably, Wendy, Ashley, and Holly all shared empowerment stories from their time as PhD students as they navigated the hidden curriculum of academia and sought agency and community. These stories suggest that virtual research teams that prioritize the strategies and practices outlined in this study may have a salubrious effect to counteract some of the structural harms of the academy. Moreover, these stories demonstrate how the RC team researchers planned their own future mentorship of graduate students as graduate students, thus demonstrating the future-oriented, community-focused, change-embracing nature of this team. Ashley and Holly discussed this work as reflective mentorship. Many studies support the transformative potential of reflective
mentorship practice on both the mentee (Long, 2018; Ronsten, Andersson, & Gustafsson, 2005) and the mentor (Gerer & Nyanjom, 2009; Ronsten, Andersson, & Gustafsson, 2005).

Both Ashley and Holly shared graduate school empowerment stories related to Monica, their project leader and advisor. For instance, Ashley shared a story about changing the direction of their research methodology as an early PhD student:

Monica and I were talking about ideas for the big - what ended up being our paper. And I just I sort of, like, found a method that neither of us had ever used before…She just let me…figure out how to do the method, implement it, and write that entire piece…I was a 2nd year student and this ended up being a Palmer award winning article…I just sort of put it out there and she was like, “Yeah, run with it”. And then, sort of similarly, around the same time, I sketched out…a framework for help seeking and brought it to Monica. I was like, “This is kind of interesting. Like, I wonder if we could actually use this?” She said, “Yeah, run with it - Like, that seems like something Holly would be interested in too”. Holly was like, “Yeah, let's do this!” and I got to, as a 2nd year PhD student, lead a team of, like, my senior researchers on doing this exploration. And that was amazing.

Like Ashley, Holly shared a very similar empowerment story about her time as a GRA working with Monica:

I had this idea that we should write a policy brief. We should do something that's for an audience that isn't academic necessarily and I brought the idea to the next meeting. And it was kind of the first time where I think, um, I felt like I was off script a little bit like, um, well, this wasn't in what we said we were going to do, um, but I was like, putting myself out there to be, like, I think we should do this. I think this could be really interesting and
Monica and [another senior researcher] were both like, “Yeah, this is awesome! Yes, go do it. Go do it, like, come back and then we'll work on it together” and I remember Monica actually saying, “I'm so glad to work with people who take the initiative around something new that we haven't done before”. So that was empowering…I didn't get smashed down…They didn't say, like, stay in your lane or…they didn't see it as a threat.

Reflecting on her changing role towards and relationship with Monica over time, Holly also shared a second story with a similar theme; however, this story occurred after she had graduated, attained her current position, and Ashley had joined the team as a GRA:

Ashley and I started thinking about wanting to do more of the analysis of the actual curriculum of the actual online program that we were in classrooms watching…It wasn't, like, necessarily part of the original set of research questions, but it was totally related. And Monica was, like, “That's awesome. Yep, go for it” and not that she would even really, at that point, like…it was Monica and I mean…she was still a PI, but I was also. But just that, like, freedom to kind of be creative and curious.

Like Holly and Ashley, Wendy found a great deal of agency and empowerment in her time on the RC team and in her PhD in general. In fact, Wendy spoke about empowerment almost continuously during her interviews. As indicated in her participant bio, when I coded Wendy’s interviews her most frequent value codes were agency and mentorship. Since this was a major overarching theme for Wendy, I’ll share several examples of the stories that she shared with me that reflect how Wendy is already doing the peer-mentorship work of helping more junior PhD students find agency. First, Wendy frequently reaches out to and talks to first year students in her program and in the larger college of education to share her experiences and to offer support: “It's been really great in talking to people at the very early stages of their, um, PhD
journey…They can look for things, they can ask…They can advocate for themselves based on my positive experience”. Second, based on these conversations in her department and college, Wendy has also offered support to all graduate students at Large R1 Southern City University by organizing a wellness panel for other PhD students:

I actually sat on the panel for incoming PhD students for the graduate school. In my conversations with people, I recognized a big issue with a lot of PhD students - in particular those with families and those that are still working - is, like, self care. [So] I emailed the dean of the graduate school…and made the suggestion. [After the panel, a new graduate student who attended] told me that it felt like a warm hug…that really made me feel good.

Third, as already discussed in the previous section, Wendy supported graduate students outside of her university by listening to their (often harrowing) stories and sharing her own:

And talking with other master's and PhD students at conferences, and just in different interactions, a lot of times I have been quiet, kind of on the front end, as they commiserate about the things that they were experiencing …some of the harshness. But then I've also been able to offer hope, like, okay, it doesn't have to be that way.

Across all of these stories, Ashley, Holly, and Wendy tell stories about empowerment and, in this case, empowerment is a flattening or subverting of traditional research team power differentials and roles, including more junior researchers deciding the future direction of the team and creating shared realities together. Not only did the participants tell stories about empowerment, but they enacted it as well. In their first recorded meeting together from October 2021, I observed Ashley and Wendy flattening power, co-planning, and creating reality together. Importantly, this meeting includes a discussion of Wendy’s position. Ashley offered:
I thought it would be helpful if you would be willing to write a job description. Um, and this gives you a lot of flexibility…So, what do you see yourself wanting to focus on for this semester?…Once you have a sense of what you want responsibilities to look like, um, what sort of time commitment are you willing to invest?…I also want to know what you need from me. Also: What funding do you think is fair based upon the amount of time that you're going to invest and are there alternative forms of compensation that we just want to get out in the open things like authorship…data for future papers…people that you want to make sure that you're making connections with…you know, other ways of sort of like developing beyond just the money. And then if there are resources or support, you need to succeed….So, I can make sure that I'm fully supporting you. And then, lastly, this is mostly for you….how is this going to fit in with your larger research trajectory? Um, that's something that's always good for you to think through as you're becoming more independent with your own research…Okay, what else can I do once I've invested this time? So, I shared a lot of information with you, and, like I said, it's also in the running notes…Um, I have sort of like, prompts for you to consider, uh, responding to in the running notes….So I just shared a bunch of things for you to think about. Are there any questions you have for me?

In this same meeting, Ashley also asks Wendy to take control over her own time and alludes to supporting her with learning to project manage:

It's up to you when you get it to me. I'm happy to, you know, sort of give feedback and we can iterate and just make sure that we have clear expectations. And then also, I want to be supporting you in developing how to take on more of the project management and
be a little bit more of an independent researcher. So hopefully, this process will help you sort of get a chance to do that on a small scale.

Outside of my observations, Wendy talked glowingly about this type of scaffolding and how it helped her to find agency and ownership:

This whole experience was scaffolded for me, which means I never got hit over the head with anything. I got to see all of it coming. And to be prepared for it, as it came. So, while I fully recognize that there was a hidden curriculum [of professionalization, of being a researcher, and of graduate school], I also recognize that I was given it in advance.

In a meeting from 12/2022, I observed how Ashley continued to check-in with Wendy, scaffold the experience, and continued using a metacognitive approach to her role as PI and advisor. Although Wendy was by that time a much more independent researcher - she had been on the project for more than a year at this point - Ashley paused at the end of the meeting to ask how a particular new role felt to Wendy. This was Wendy’s first time filling out an IRB application on her own:

Ashley: So far, everything you've shown looks really good: Your thought process is logical and aligning with everything. So that's great. How has filling it out been for you? Does it feel pretty good? Is it, like, validating how much you know about research design? Um, anything that you realize you just haven't thought through before?

Wendy: There were quite a few things I had not necessarily thought through before, but this conversation is helpful. As you already know, I'm always like, triple guessing - that's the 2nd guessing - but triple guessing myself. So this part is affirming that kind of place where I'm like, “Yeah, we'll see what happens”. That's kind of cool.
Ashley: Honestly, I think that that's a good approach with IRB in general. Like I said, I will often be like, “I think this is a good response”, but it takes awhile to hear back from them and then you get a reviewer, and they might say something slightly different or, you know, interpret differently. Sometimes I just submit and then have them tell me what to do. I don't know anyone who's ever submitted an application and had it accepted, like, immediately - there's always something.

Wendy: That does feel a little bit better.

This exchange demonstrates Ashley’s continued support and professional preparation of Wendy, including preparation for rejection and feedback - and modeling hardiness and adaptation.

In another meeting from 08/2023 - now two years into the most recent iteration of the research project - Ashley once again demonstrated scaffolding and support to Wendy, a now much more seasoned researcher. In this excerpt, Ashley and Wendy discuss Wendy’s recent work as a data analyst:

Ashley: Do you want to get started talking about the student voice project or about your perspective? Um.

Wendy: Student Voice project is good.

Ashley: Thank you for sending over your comments…any thoughts, anything that you thought worked? Well, anything you're going to be tweaking next time? Any questions about things that didn't seem to go as textbooks told you they were going to?

Wendy: I felt like the textbooks weren’t clear on it in any way to be quite honest. So…um, so the open coding is a bit overwhelming for me.

Ashley: Yes.
Wendy: And I'm sure it's not just me, but I know, like, open coding is a lot because there are so many things that pop up and I need focus, so I want to try the a priori coding and, like, go in and looking for specific things, um, but my concern with that is that I try to force something to fit…

Ashley: So those are definitely 2 really valid strategies. I actually think that there's a 3rd sort of combination…*[describes a hybrid approach to coding]*. And so, um, yeah, I think the hybrid approach is a nice compromise. Yeah.

Wendy: And so I do know that, because I, in general, my mind wanders and, like, questions, pop up, um, yeah, I need focus somehow, otherwise I keep wandering -

Ashley: It's not just you, there's like an unlimited number of things you can find interesting in an interview. So, um, I've definitely been there. Yeah.

Finally, Ashley, Holly, and Wendy all described the experience of sharing power with their respective project leads and the empowerment that came with that less-hierarchical approach to team structure. All three, likewise, discuss a feeling of having more leadership opportunities than other graduate students because of the more-flattened approach to power. For instance, Holly shared:

I grew into more and more of a leadership role also informally and that probably pre-dated my formal leadership roles. So, there were other, for example, grad students who, by the time, like - I was further along, I had more experience [with leadership on research teams].

In all of these stories and in these observations, the RC team members collectively created a space where members of all levels and roles are welcome to - and able to - find agency
and ownership over their own work, shift the shared reality of the team in productive ways, and support their peers and future mentees in scaffolded, caring ways.

**Using Mixed Fidelity Technologies To Make Critical Decisions.** As the RC team members worked together, they encountered pivotal decision making points that were critical to their relationships, their individual flourishing, and the future of the team. As a virtual research team, these decisions were supported by different communication technologies. Following up on Gibson et al. ’s review (2015), I found that the RC team did not rely on either high or low fidelity technologies to do this work - instead, different fidelities were used in different contexts. For instance, thinking again about the disempowering incident in Summer 2020, Holly discussed how technology mediated the conversation that she, Ashley, and Jessica had to determine the future of their work with the vendor:

All of the conversations were on Zoom with the vendor and with the district and with us and then the follow up kind of debriefing [after the particular disempowering incident with the vendor] was actually, I remember we, it was actually on the phone because we were texting. And then I, I had come in a little bit late to the meeting and so I didn't catch all of the dynamic. So, then, we were texting afterwards and I was like, “How did that go? How does that feel?” and they both were like, “Not good. Like, that was not good”. So then we had a phone call to talk through that.

Here, Holly describes how video conferencing was used for formal meetings, texting was used for informal check-ins after a particular meeting, and then a group phone call was used to discuss a way forward. Reflecting on this series of technological choices, she said:
I tend…to default to Zoom for nuanced conversations because of being able to potentially see facial expressions…I wonder if I had realized, really, how, like, problematic the conversation had been at the time - If I would have, like, said, “Hey, let's grab another Zoom so that we can talk through this”. I'm actually glad it was on the phone because I think it was emotional. You know, like it was emotional and then sometimes, like, Zoom is not great for that because people, you know, that's a more vulnerable feeling.

Likewise, Holly felt that video conferencing can be difficult with corporate folks:

Um, so, whether technology was a facilitator or not, I think, you know, always with Zoom, it's hard to read people's intentions and dynamic and, like, well, why did they say it that way? And did they intend it that way? Regardless it wasn't okay, you know, how that dynamic was, but, um, I think it gets in the way of, like, reading into stuff, um, or interactions, and then relational stuff.

Like Holly, Ashley reflected on the disempowering experience again as she thought through technology actors and decision making on the team:

I vaguely remember that I was having Internet issues. It was, like, during 2020 when everyone was having internet issues. And that I, like, had the conversation - the first conversation - with Holly on the phone in my parent’s dining room…so potentially that's a barrier to communication. I wasn't able to see her face, but…when I think about it, it was, like, the conversation and not how it was happening. I remember feeling very connected to Holly and, like, we were being really open, and this was, like, an important discussion and that either of us could say anything, pro or con, and we were going to, like, systematically evaluate the best course of action together. And I remember feeling
reassured that I didn't have to do that and chart that on my own, like, really appreciating her input and thoughts and - We were going to, like, find what we needed to do.

“For a team that studies virtual learning, we're pretty low tech”: Using Mixed Fidelity Technologies To Make Research Possible: Across all of our interviews, the RC team stressed that mixed fidelity technologies make their work possible. Since membership has shifted over time and members have shifted over time in their location, their roles, and their personal responsibilities, the virtuality of the team - and related technology actors like Google Drive and Webex - made the team possible. It simply could not have existed in a non-virtual space. Recognizing the often invisible - but critical - role of technology actors, Ashley reflected on the team’s choice of technologies:

I think it's worth noting that for a team that studies virtual learning, we're pretty low tech. And I actually really like that - it lowers the barrier for new team members to participate and a lot of the stuff we're sharing with research, you know, partners and different things like that. Um, you know, everyone knows how to use the shared, like, Google Drive folder and they know how to do, like, Google word processing…there's not a lot of barriers to using the technology that we're using. Um, it's probably not the fanciest way to do it, but it works…I worked for a research firm before this, and there was a lot of project management software. Like half the people didn't understand how it worked and so they didn't use it. Um, and it wasn't actually more efficient. It might look prettier, but that was about it.

This finding - that the RC team prefers lower tech for their research work together as an equity choice - complicates Gibson et al.’s (2015) gap related to missing research on high fidelity technologies and virtual teams: Perhaps there is less research on high-fidelity technologies
because these technologies are exclusionary and not just because they’re newer? For teams like the RC team that hope to include researchers and community members that are differently resourced, high-fidelity technologies may serve as a barrier to working together well. In addition, this points to a larger commitment of the team - lowering barriers to participation overall.

More fundamentally, the participants suggested that virtual work makes research a possibility for certain researchers who may be constrained by other commitments. For example, in thinking about parenting a young child, Ashley said, “I do think that, like, the virtual format can be helpful. Certainly asynchronous research work is really helpful, because you can work around the child's schedule, which, like, day to day, is insane.”

In 2020, all researchers with competing commitments felt extreme role strain as they went online and tried to juggle family life and their own wellness. Since the team had been virtual/hybrid for years, the researchers on Reimagining Citizenship did not experience some of the same pressures that other research teams did. For instance, the team had already developed and iterated on their synchronous and asynchronous communication and project management strategies for years at that point. However, like most researchers with children, team members experienced the stresses of parenting different ages of children who were not always able to attend school or go to daycare. Ashley in particular experienced acute stress during this time as she became a parent, then a single parent, and then moved across the country with her baby. Uniquely, the RC team, that was already researching online learning, felt pressure to take press requests and take up new research partnerships as the rest of the world became interested in their area of expertise. According to Holly:
We had to ramp, we had like, this very quick ramp up of, like - Okay, we have something to say, everybody, like, we've been looking at this for a long time. So, there was an interesting, like, we were just kind of chugging along and then the pandemic came to a head and we were like, whoa, okay. What are we going to write? What are we going to work on? And then, like, we had a bunch of, you know, some media requests just asking, like, can you comment on this.

This pressure reflects the team’s commitment to social good, even in the face of the pandemic and their own personal pressures as they worked and lived through extremely difficult circumstances.

In addition to being necessary, virtual work can make research and relationships on teams more satisfying. In reflecting on her work with a concurrent research team, Ashley said:

[As we met on Webex] we were getting to know each other's kids and we just - we felt like it wasn't just a work relationship. We were in each other's houses…talking with, and getting to know each other's family, and it just felt more cohesive than if you were sort of in a board meeting type room and just working through your agenda.

Thus, virtual work can allow researchers to have more intimate relationships as they “visit” each other in their own spaces and meet the personal people that are important in their lives. This visiting is also a type of hierarchy flattening: No one researcher’s space is the central meeting space that is prioritized over others. For teams that include senior researchers and junior researchers, like the RC team, then, each researcher can choose her preferred space and share it (or not) as an equal place of power, safety, identity, and creativity. I discuss this concept more in
the critical discourse analysis of Webex, but this equality of space aligns well with both critical and postmodern approaches to power and the self.

Not only can virtual work be satisfying and more egalitarian, but the unique situating of virtual meetings in people’s private homes opens up space for unofficial members and actors - like partners, friends, delivery people, background decor, washing machines, WiFi routers, and barking dogs - to interrupt, add to, and change the work of virtual research teams in small and large ways. Most notably, Ashley, Wendy, and Holly all posited that children can benefit virtual research teams during meetings. According to Ashley:

The obvious thing that people think of is that they can be distractions. Um, but I think that some of those distractions are productive…So I actually think that those are really wonderful, humanizing things. I'm, like, relaxed and smiling in a different way when my daughter is with me in a way that is maybe more conducive to, like, deeper intellectual thought, as opposed to, like, let's get through business and end this meeting. You know, you're, you're sort of chatting, you're talking about personal experiences and when you start talking about, like, interview data, you can connect more with, like, the human aspect. Yeah, when you see, like, a little tiny baby on the other screen, you're just - you act a little differently.

Here, not only does Ashley counter prevailing thoughts about children as “distractions” from work, but also posits those distractions as opening up a different kind of creative production. Ashley describes how her daughter attends virtual meetings with her and acts as a sort of accidental partner in data analysis - Ashley’s work is more “humane” and “deeper” when her daughter comes to a data analysis meeting. This small human, an actor with agency and
intention, seems to connect the personal and work portions of Ashley's life in ways that help her flourish as a researcher in this virtual space. Once more, this deep, satisfying work would not be possible without the team being virtual and without the often invisible work of virtual technology actors.

In a followup conversation, Ashley contrasted the feelings of humanity and completeness that she felt on the child-inclusive team to a speculative virtual team where children are not overtly welcome: “Yeah, but if it was like, a new team, and it was male dominated and or like older, and or, you know, no one seems to have children or talk about them. I think that I would have, like, a sense that I needed to prove myself first”. Likewise, Holly mused on how late-stage capitalism affects the interplay of creativity and productivity on virtual research teams: “Capital structures default us into a non-caring, not humane response when we are under stress to produce”. Ashley’s and Holly’s speculation further suggests that virtual research teams have the potential to further entrench sometimes toxic cycles of productivity and prestige on one hand if they are “strictly business” versus more caring, creative production when the personal is centered. I wonder: How might the inclusion of “interrupting actors” - like children - serve as a provocative antidote to the binary of caring versus productivity that innervates the work of justice-oriented virtual research teams?

Sticking with the theme of caring, creative productivity, Ashley described how working virtually helps her do more and better work across multiple, geographically diverse virtual research teams: “In my case, I find it easier to be fresh for multiple meetings…I just plan myself buffer time and I'll walk the dog or do the dishes or take a mental break. I couldn't recharge in the same way if I was in the office. That way, I can be fresh to work on multiple projects…that might be on the same day.” Although Ashley uses virtual work to create a better work-life mix
for herself, the equation does not go both ways. While Ashley does work from her home and welcomes work in her home, she wants to protect her home life from her work. She does this with technology by using a personal Google Calendar for both home and work, but does not connect her official work Outlook calendar to her personal Google Calendar since she “doesn't really want my work to know what's going on in my life”. At the same time, Ashley recognizes that while she hopes to protect her privacy from Large R1 Southern City University and Microsoft, she is ostensibly giving up privacy to a non-GSU supported mega-corporation: “I have everything synced in Google. I decided that if there was going to be like, one big corporation that had all had my data, I was just going to make it one that I chose. So, it's Google.”

Shifting to the technology actors themselves, how do the technologies that the RC team used make research possible for virtual teams with competing professional and personal commitments? How do they reduce work? Who are these technology actors, what do they do, and what do they want? How might they open up space for women researchers to perform personal caretaking work? Over the past couple of years, the RC team has used three main technologies to do their work - Webex, Google Drive, and iRIS. Both Webex and Google Drive serve as virtual administrative assistants or enable the RC team to share the role of administrative assistants. For instance, Webex schedules and “hosts” meetings, and then records, transcribes, and shares meeting information automatically. Likewise, Google Drive develops shared organizational folders and documents - with varying levels of access - so that users can communicate with one another and develop documents together. It strikes me that both of these technologies are replacing a historically feminized job role and job functions. For teams that prioritize the personal and find meaning in their personal caretaking roles, then, digital
communication technologies work as feminized actors, silently organizing and recording the intellectual work of the researchers. At the same time, these feminized technology actors are not virtual, ever-toiling electronic laborers seeking no compensation - instead Cisco Webex and Google Drive, both hugely profitable international companies, exist to mine users’ data so that they may then use this data to create new or improved products and increase stakeholder profits. Unlike Webex and Drive, iRIS is a privately-held company and it purports to exist to help researchers comply with NIH human safety requirements; however, it is still a profit-driven company and iRIS does collect user data to improve - and sell - its products. Once more, iRIS replaces the labor of humans. On the RC team, I observed Wendy and Ashley using it to fill in a text-based form with questions drawn from the NIH guidelines. Once they turned in this form, they communicated via text within iRIS using another form. iRIS definitely simplified this process for the RC team and undoubtedly organized and simplified the work of the analyst assigned to the project; however, I wonder what human labor was replaced by asynchronous iRIS? In the past, would a more junior analyst have worked directly with the team on the form? Perhaps this analyst would have met with the team, helped clarify the always-confusing NIH requirements, and maybe even helped the team think through their research design? Could this analyst have been a member of the team? Could this analyst have been a woman? In my wonderings and in these very real ways, I propose that virtual technology actors simultaneously open up professional and personal options for researchers and reduce labor while also removing jobs and job categories from the labor market.

**Mixed Fidelity Digital Technologies: Empowerment Through Professional Preparation, Cognitive Apprenticeship, Personalized Mentorship, and Options.** As noted, the RC team used a variety of both high fidelity and lower fidelity technologies to work together:
They simply could not do their work without these technologies. However, the nature of the official power structures affected how these technologies were used during recorded meetings. For instance, in a meeting from January 2022 between Ashley and Wendy, Ashley is the owner of the meeting room - this is her space - and she initiates topic changes and shifts between topics. Importantly, in this meeting Ashley shared her screen in Webex to show Wendy her Research Project Tracker in Google Sheets. This activity - sharing screens or looking at shared documents on one’s own machine or both - is a common shared activity across the meetings that I reviewed. This is an activity that flattens power since everyone is equally resourced. Ashley had also given Wendy access to this tracker so that she could make a copy and use it as scaffolding for her own work.

**Figure 18**

*Ashley shows Wendy her research tracker and talks through it*
Ashley described her tracker to Wendy during the meeting:

I just have it in Google sheets and I have every single project listed here. But I was starting to feel really overwhelmed because, um, as you see, there's 16 projects going on. So I started doing this thing where I like grayed out things or purple out things that I'm not focusing on right now. So that I'm only working on, like, 3 or 4 projects at a time. And so I have this, like, color key over here and, like I said, like this sort of organizational stuff. It makes me feel calmer, I know. For other people, it makes them feel anxious. So, find what works for you…And I try to have a couple of papers in each stage, you'll see. So, I have a planning stage, a data collection and analysis, or a data collection phase and analysis phase um, and a writing phase. And so I try to have one for me now, since I'm like, in a faculty position, I'm trying to have at least 2 or 3 papers at
each step. But for you, maybe aiming for something in planning, something in analysis, and something in writing, you know, 3 papers, but sort of spread out. And that way you start to build up what it'll eventually be your publishing sort of trajectory.

In this description of her tracker, Ashley epitomizes several major strategies that made the RC team successful. First, she gifts Wendy with access to the tracker itself, resourcing Wendy with a tool to help her organize her own contributions long-term. Second, Ashley talks through why she designed the tracker in the way that she did, how she uses the tracker, and how her use of the tracker has evolved over time. This is an example of pragmatic cognitive apprenticeship as Ashley uncovers the hidden curriculum of how a more senior academic does this invisible administrative work. Moreover, as Ashley describes her use of the tracker, she discusses how the tracker affected her emotional wellness (“overwhelmed”) and how she changed it to help her flourish (“calm”). In thinking about the tracker itself, built with Google Sheets, we can also consider the agency of the tracker itself as an actor. How might the affordances and limitations of Google Sheets have contributed to Ashley’s - and Wendy's - flourishing or haggardness as they interacted with it?

Likewise, Wendy talked about how she and Ashley used shared documents and Webex to work together, opening up space for her to be in a different space and time zone, literally:

Wendy: We love a Google Doc and video chatting. I mean, honestly the fact that I was able to do so much while being gone by being literally thousands of miles away and 5 to 6 times zones ahead - including being a T.A. for her class - is remarkable. Fifteen years ago the ease with which we were able to do that would be impossible. I can count on my hand the number of times I've seen Ashley in person over the course of our 3 year relationship and we have been able to do so much together.
In another meeting from December 2022, Wendy and Ashley meet in Ashley’s Webex room. Unlike past meetings I examined between Wendy and Ashley, Wendy talks for the vast majority of the time and shares her screen.

**Figure 19**

*Wendy shows Ashley the iRIS IRB application and talks through it*

Thus, Wendy, Ashley, iRIS, Webex, and Google Docs work together to open up spaces for ownership and agency across roles. Although Cisco Webex and Google Docs are far from munificent or benign actors - they are, after all, gathering data from the RC team to improve their products and enrich their shareholders - these for-profit tools do provide easy-to-use spaces that encourage flattened power structures, multi-directional conversation, consensus-building, and relationship building.

I will now perform a critical discourse analysis on a Google Drive document that Wendy
and Ashley worked on together over time to illustrate how mixed fidelity digital technologies support human RC team members to open up space for cognitive apprenticeship, agency, and ownership. I will first present a detailed description of the Student Voice Meeting Agendas 1-4 (SVMA) document. Once more, this description is based on Grbich’s Frame and Text model.

The Frame

The “Student Voice Meeting Agendas 1-4” document was co-created by Ashley and Wendy as a highly structured set of lesson plans and as a data collection instrument for their larger Reimagining Citizenship project. It contains templated lesson plans and follow up work for 4 focus groups. Wendy used these agendas to facilitate student focus groups in the class that she was T.A.ing with Ashley. Thus, Wendy is the intended audience for this document. Students - the eventual audience for the 4 focus groups - did not participate in the creation of the agendas nor did they see any version of this agenda during the focus groups. Notably, Wendy was in Rwanda and Ashley was in the Southern U.S. during the construction of and implementation of this document.

The “Agendas” document is housed in Ashley’s Reimagining Citizenship Google Drive Folder inside of a folder called “Meeting 1”. This folder was created by Wendy, which means that Wendy has full editing abilities inside of Ashleys RC folder. This folder contains 5 documents in total, all created and owned by Wendy, and one folder created by Ashley that includes an item that was not used.

Figure 20
To uncover more about the history of this document, I entered the Agendas document and visited the History. There, I found that the document was not native to Drive; instead, the version history indicated that Wendy imported the document on 1/17/2022 from Word. I note this detail
for several reasons. First, although Google Docs and Microsoft Word are analogous, they are not perfectly compatible with each other. This imperfect compatibility can create changes during importing that alter a document and its metadata. One way that this imperfect compatibility shows up is in users’ ability to see a complete history of document creation and revisions. This broken historical record affected my ability to understand who originally created the Word version of this document and how Wendy and Ashley worked together before importing the document into Google Drive. Second, I am interested in ownership of documents since ownership has emerged as a major theme in this study. Understanding who originally created and owned the Word document opens up analytical possibilities regarding ownership, both official and unofficial. To better understand the history of the document before Wendy imported it, I emailed Ashley:

I believe I provided [Wendy] sample focus group protocols but that she developed the original outline of the meeting. Ultimately, I think I contributed more content to the agenda but the goal was to walk Wendy through the logic of developing and implementing the student sessions (which we conceptualized as being working meeting/focus groups as far as data collection went for our research study), so in the future she could walk through the process independently.

In other words, the Word and Google Docs version of this document were created by Wendy, but Ashley provided scaffolding via examples as a form of professionalization and as a way to gather data for their Reimagining Citizenship study.
Ashley and Wendy are the only authors of and participants on the document as evidenced by the document History and the Comments features. Students, who participated with the document in 4 focus group meetings, were not included in the development of the document.

The document itself is highly organized, programmed out for time and activity, and contains a template that bookends all 4 meetings (Welcome, Next Steps, Post Meeting Followup). The document contains both private guidance for Wendy and information/questions that she will use to interact with students. Within each meeting, the middle portions of the meetings vary and do not follow a templated scheme. Over time, the 4 meetings do decrease in their level of structure, with Meeting 1 containing the most specific guidance and Meeting 4 containing less.

Each of the first three meetings is focused on a specific action, from the meeting titles (Learn, Plan, Do) to the instructions for Wendy (“Share information about how/when students can expect to receive compensation”); however, the guidance for students is more reflective (“What do they think of the vignette? What resonated, stood out, was surprising?”). Since the document is action oriented without pronouns and with very direct language (“Share the narrative vignette”), it appears to be written to Wendy even though Wendy developed the initial framework and Ashley and Wendy collaborated on the creation. Overall, this structure suggests a highly controlled and intentional design aligned towards a highly specific set of goals and ways of operating. This message of structural control aligns with the goal of the larger Reimagining Citizenship project: Novices - in this case, students - are being trained to evaluate lessons. At the
same time, another novice - Wendy - is co-training herself, along with Ashley, to run the focus group by developing this document. The training of both the students and Wendy are critical to the success of the Reimagining Citizenship research project.

The Text

Looking again at the document itself, all sections of the agenda are highly detailed and programmed out, including amount of time. The majority of the topics are guidance for Wendy, not instructions to the students. Language and tone is used similarly for instructions to both Wendy and the students; importantly, sentences and sections written by Wendy or Ashley, respectively, are of a very similar style and tone: direct, easy to understand, and aligned to purpose. The overall assumptions of the document itself are that 1) a highly-programmed set of agendas will produce a well-prepared GRA - Wendy - who will run a highly-structured set of focus groups and that 2) these focus groups will serve as fertile spaces for students to get training and then report out on their evaluation activities.

Turning away from the document itself and towards the marginalia: The overall assumptions in the comment area are that 1) Wendy will interact with Ashley’s suggestions and comments, accepting changes where appropriate and pushing back where not appropriate and that 2) Wendy viewing and interacting with Ashleys suggestions on the document will serve as a space for cognitive apprenticeship. There is also an assumption from Ashley that she can use the assignment functionality in Google Docs to create a to-do list for Wendy.

In total, the comment area contains over 100 comments. These comments are a mix of
suggestions - deletions, additions, formatting changes - and conversations. Almost all comments are now resolved. Almost all comments were authored by Ashley and resolved by Wendy. In several cases, Ashley used the “Assign” feature in Docs comments to assign Wendy to a task. This feature adds the task to a checklist and alerts the assignee via email that they have been assigned a task. Wendy does not appear to assign Ashley to any tasks. In addition to assigning Wendy tasks, Ashley also asks Wendy a variety of open questions via comments to help guide Wendy’s work. For instance, in response to a planned evaluation conversation activity, Ashley comments:

Let's discuss this next time we meet. Is this aligned with best practices? Are there any ways we can make it more interactive and better fit reflexivity? Maybe we should ask students to do some pre-work, or give them time during the session to do small group work first?

Although Ashley and Wendy collaborated on the document, with Wendy leading up conceptualization, Ashley is the main actor that drives action behind the scenes.

Ashley's comments and suggestions are a mix of corrections and thoughts related to already-discussed changes to the meetings, formatting, more precise use of language, and conceptual changes, and requests for Wendy to deliver work on a particular timeline using particular resources. Wendy only appears to make one substantive comment herself where she asks for feedback, revealing some difficulty with conceptualizing the second student meeting. Ashley replies to her, @-ing her so that she receives an alert, offers a suggestion, and then
Ashley resolves the comment that same day.

**Figure 21**

*Wendy Asks For Conceptual Help In A Comment; Ashley Responds*

![Comment interaction in Google Docs](image)

Notably, Google Docs does not check in with Comment creators before comments are resolved.

After this action, the comment disappeared from the margins but is still accessible from the Comments history.

Although the language use and tone of the document itself is consistent, the language use and tone of the comments varies a great deal. Much of the time, Wendy accepts change suggestions from Ashley without any additional commentary using the built-in resolution functionality - these acceptances are part of the flow of comment resolution. These silent acceptances are the verbal equivalent of a “Got it - done”.

**Figure 22**

*Wendy Resolves A Suggestion From Ashley Without Additional Commentary*
For comments from Ashley that include formal assignment using the commenting assignment functionality, Wendy does not respond in comments nor does she use the built-in functionality to mark the assignments as done.

In her writing, Ashley’s assignments and open questions to Wendy are unemotional, practical, and focused on giving Wendy conceptual guidance or helping Wendy complete a particular task. On the other hand, the one time that Wendy wrote a more expansive comment, she used more emotional and complex language: “I struggled with this meeting and could definitely use some additional feedback to ensure that it is the most worthwhile experience for the students, but to also make sure that we are getting the data that we need”. This comment from Wendy is conceptual, high-level, and focuses on several interrelated goals including overcoming a difficulty, seeking feedback, creating a valuable experience for students, and aligning the meeting session to the Reimagining Citizenship research project.

In both the main document and in the marginalia, the SVMA is written as a highly-structured set of communications with intersecting practical goals. The first goal is to
create a best-practices aligned set of agendas that will also align with research project needs. The second goal is to ensure that Wendy feels prepared to facilitate the focus group and can take on more ownership over research components in the future.

Ownership and agency is a major theme of this dissertation and the SVMA is an analytically rich site to explore ownership. First, Ashley gave Wendy full editing rights to her RC folder. Wendy acted on this invitation and created her own folder and set of documents in this space. This set of actions by Wendy indicates a level of comfort with co-ownership when working with senior researchers.

This document does not serve as a site of in-depth interaction, reflection, or conversation; instead, it serves as a set of overlapping checklists and as a means to an end. Notably, this document can not be considered on its own but instead must be considered with meetings, interviews, and other documents. This points to the poverty of analyzing a single document in isolation.

“I Felt More Comfortable Pushing Back”: Differently Positioned Researchers

Pushing Back, Pushing Forward, Flattening Hierarchies, and Creating Realities Together

In Subversive Virtual Spaces: As noted in the previous section, the RC team researchers were able to find spaces of empowerment over time as their roles changed; however, this work was not always without conflict. In thinking about conflict, Holly said:

The power shifted over time and that part of my perception on openness to conflict and openness to being critical early on when I came on as a grad student, or even a post doc -
I wasn't in a position to necessarily have those kinds of conversations that edge into, like, you know, [being] colleagues, with Monica. Then by, you know, kind of like the latter part of it we definitely did and and, you know, I felt more comfortable pushing back or pressing, or like, maybe being in those spaces where I could disagree. Not that I couldn't disagree earlier. It's just, you know, it's just different.

This anecdote illustrates the legitimate power of more senior research team members to disagree with one another. Holly also traced the value of openness to conflict to the teams’ commitment to critical frameworks:

Those norms around being open to conflict and then also being, like - I think that’s part of criticality - you know, using critical frameworks, using progressive frameworks, like, core to that is your own ability to self reflect critically on your own role, your own lives. And this might be in opposition to [Midwestern Nice].

Holly complicated her own reading of criticality, again, in thinking about the very white progressive liberal city that she works in:

It's a very liberal, politically liberal city with a bunch of well intentioned white people who are super racist about stuff and don't recognize it. [For instance we have] literally, documented, the worst disparities around education and the justice system between white and black young people and adults in the country. Um, so how does that…how is that?

Holly not only reflected on her own thoughts on this dichotomy, but talked through her experiences talking with minoritized researchers from different parts of the country when they come to live in her city:
Um, so these are things I, like, intellectually knew but what's interesting is hearing, you know, being in conversations with Jessica, and then others, and in particular people of color saying, like, “There's a kind of whiteness in [small Midwestern city] that I've never experienced anywhere else”. And I think it's wrapped up in the like, the white, moderate, liberal part of things.

So, how did pushback actually look and function on the RC team between differently positioned researchers? In a Webex meeting from December 2022, I was able to observe Wendy pushing back against Ashley, her advisor, supervisor, and the project PI. I now present a brief critical discourse analysis of this meeting to elaborate.

During this meeting, Wendy and Ashley worked together in Ashley’s Webex room on an IRB application in iRIS as Wendy shared the application on her screen. Although the vast majority of the meeting concerns the IRB, the last few minutes were devoted to Wendy’s progress in her PhD. Due to the limitations of how Webex recorded this meeting, I was not able to observe if and how Wendy and Ashley used other functions of Webex outside of what was recorded. As previously discussed, Webex has many functions - like chat, polling, and file sharing - that meeting participants might use. In the recording, I could determine that the two used the recording, video, audio, and screen sharing functionalities of the video conferencing tool. The recording presents Wendy and Ashley as two equal participants visually, with both of their video feeds taking up the same amount of room. Both appear to be at their homes. In this way, both Ashley and Wendy take up equal visual space in the Webex room despite their different team roles, different levels of legitimate power, and given Wendy’s leading up of the meeting this time. Thus, even though this is Ashley’s room, both researchers are given the same amount of room and the same tools to work with. In other words, Webex is equally resourcing
Wendy and Ashley to work on this application. This is important since resourcing people and communities was a major value of the RC team. In addition, this equal resourcing is a critical component in opening up agency and ownership for Wendy.

Unlike previous meetings that I observed, Wendy led the meeting, talked for the majority of time, and they screenshare the IRB together while Wendy talks through it. As in the Google Drive and iRIS analysis that I performed earlier, the only participants are Wendy and Ashley - no other RC team members nor the undergraduate students that will be affected by the IRB application are included in this meeting.

In addition to leading the meeting and controlling the flow of topics, Wendy now uses less polite talk and more familiar talk with Ashley, including some exasperation over technology - Ashley matches this tone. They both use much more casual language throughout the meeting. This demonstrates that they know each other now and that Wendy is less concerned about propriety or being judged. During the meeting, Ashley and Wendy solve tech problems together in IRIS. Ashley asks open conceptual and practical questions about Wendy’s work, along with making suggestions and giving more direct feedback on needed changes, demonstrating metacognitive apprenticeship techniques. Wendy pushes back and thinks out loud about Ashley’s reflecting and strategizing now as well, which demonstrates that she is now both comfortable in being in disagreement with Ashley, her supervisor, advisor, and project leader, and is now publicly embodying the reflective practice prized by the RC team. Likewise, both Ashley and Wendy show relationship growth and familiarity as they interrupt and talk over each other.

Overall, the meeting demonstrates how Wendy is taking care of the project management, feeling more confident in her intellectual contributions, and how Wendy is doing more of the work of a researcher while still getting scaffolded and appropriate support from Ashley.
At one point, Wendy and Ashley discuss the direction of the study given the evolution away from working with the school district and the corporate vendor. Part of this reconsideration involves reflecting on the initial research questions:

Wendy: Do we have updated research questions?

Ashley: Not necessarily, but why don't we take a look [at the questions we wrote originally].

Wendy: So, I did leave some out because they just didn't seem to apply the same way. Um, so I did a little revision of the language, as my mom would say and then, instead of the 5 research questions, I think I ended up with just 2 that seemed to apply, which is still the first, uh, the first: “To what extent and under what conditions were anti-racist CSP-based instructional strategies facilitated in an online environment”, because that's still what we're looking at. And then, um, what are the key - hmmm?

Ashley: [Interrupts] If we're having all the students submit protocol responses.

Wendy: Right.

Ashley: Right. That's how we evaluate that. Yeah. Go, go back up because originally we were going to examine this with quantitative data so, let me - do you mind going back up?

Wendy: [Interrupts] I took that out. I took that out. Okay, I want to say I took that out. Yes, because all of the quantitative data were the school records provided by [the school district].

Ashley: Yeah, yeah, sorry, do you mind scrolling [Wendy talks over Ashley, but imperceptible] down to that first research question? [Wendy scrolls]. We can still say that
this is the protocol. Perfect. Um, I don't think that the second part of the second question is as relevant. What do you think?

Wendy: Well, I thought if we're still using the student research teams this one actually might be-

Ashley [Interrupts] Oh, like in those teams? Oh, interesting. Um, I don't think as currently outlined, we're collecting their peer group [imperceptible]. Do you have a sense of, like, do you have a - What data would you use to answer the 2nd part of that question? Do you have an idea?

Wendy: Um, I was thinking of using their survey data, like, from their experiences and participating and taking, um, like, because the, the question is supposed to be around their experience within the redesign process itself and their experience of doing it within the group and then working with me in the last session. So that is the data that I thought would apply to that?

Ashley: That's definitely team dynamics and that's an interesting question about power dynamics and incentives - [this] was originally around, like, the power of various researchers and school district administrators and vendors. So it was, like, navigating all of these, like, complex systems. Um, if we were to do something with students, it would be more about like, you know, teams, team partnership and that seems a little - I think that would fall under, like, key challenges, opportunities, structures. So, I think for now, I’d delete the 2nd part, but I think that's something we can keep an eye on and it might emerge. [Wendy deletes the 2nd part].

In this extended excerpt, Wendy and Ashley experience some minor conflict over the future direction of the study as they strategize and renegotiate their shared reality. As they talk - and
talk over each other - the now two-person team demonstrates several strategies that have been critical to the success of the team. First, Wendy, who is leading the meeting, gently pushes back on Ashley’s idea to delete a research question about power. Although they ultimately do delete this question on Ashley’s ultimate direction, Wendy justifies her position several times. Both researchers - with different levels of power - interrupt each other with new information and thoughts. Ultimately, Ashley asks Wendy to delete the question, but doesn’t delete the possibility of including a study of power from the future of the study (“that’s something that we can keep an eye on and it might emerge”). As the project PI, Ashley holds legitimate and final decision making power in this situation and uses it; however, she reframes her decision as a research choice that might be explored later instead of shutting down Wendy’s idea. Although Wendy never verbally agrees, she does delete the question. In this way, Wendy and Ashley indicate their “respective positions of power” (Grbich, 2013) on the team while still gesturing towards a flattening of roles. Second, this small conflict demonstrates compassionate, bespoke mentorship. Finally, this minor disagreement was born from a major controversy that the team has worked through over the years: How does a research team move forward with different types and levels of resources over time?

As discussed in the critical discourse analysis of iRIS, Wendy and Ashley come into this meeting with the assumptions that 1) IRB approval is required and must be completed in a very particular way before they can move on but that 2) IRB approval is a somewhat mysterious process that they do not have control over. In addition, as presented above, the team members assume that while Wendy is leading the meeting and wrote the application, Ashley, as the PI, will have the final decision on the application components. As also discussed in the critical discourse analysis of iRIS, although Wendy submitted the application under review in this meeting, Ashley
did take on the responsibility for submitting the revised version of the application after the team received feedback from the research analyst.

**Summary of Findings: Actors & Discourses**

Now that I have presented the stories, strategies, and practices of the RC team actors, I will briefly summarize my findings across all sources of data. This summary is drawn from interviews, documents, and recorded observations. First, The *Cartography of Controversies* visual map includes a mapping of the human and non-human actors that were involved in the RC team meetings and in creation of the documents that I analyzed. As the researcher and author of this study, I was also enmeshed in the actor-network of the RC team.

Second the *Cartography of Controversies* includes common discourses, including values, disputes, and ideologies. According to Grbich (2013), discourses are “the ways of thinking, speaking, and writing about particular topics in order to discover the rules, assumptions, ways of seeing, hidden motivations, conditions for development and change, and how or why these changes occurred or were resisted” (p.246). She encourages researchers to uncover “What is included and excluded?” Likewise, Venturini’s (2009) method calls for researchers to “identify individual conflicting ontological or epistemological statements” (p. 266), “combine these into larger competing narratives” (p. 266), and then, in conjunction with identifying the actor-network and its changes over time, to construct Cosmoses (Ideologies) and Cosmopolitics (Common Realities). Although Venturini offers a systems-level approach to this work, Grbich and Venturini’s approach to uncovering discourses seems commiserate with one another.
Across interviews, document analysis, and recorded meeting observations, I constructed discourses that included common values, open disagreements and disputes, and common ideologies. These included:

*Common Values*

- Agency (Appreciation; Open To Conflict)
- Constellation Shifts (Ecosystem; Evolution; Genealogy)
- Rest
- Integration
- Productivity (Collaboration; Collective Goals; Creativity; Curiosity; Maintaining High Standards; Methodological Diversity; Praxis; Theoretical Homogeneity; Pragmatism; Quality)
- Relationships (Candor; Care; Ego Death; Friendship; Humbleness; Kindness; Mentorship; People-First; Mutual Support)
- Social Good (Changing Policy; Cultural Relevance/Affirming; Equity; Leftist Political Commitments; Reciprocal Partnerships; Resourcing People and Communities

*Open Disagreements & Disputes*

- What is the team and who counts as a member?
- How can we balance personal and professional flourishing?
- How can we balance care and productivity?
- How can the white women on the team take on anti-racist work work while also centering the voices of minoritized women on the team?
- How can we move forward with different levels and types of resources over time?
• How can we work with corporate educational entities that prioritize profit over culturally affirming learning?
• How can we support team members with different roles and different career pathways?
• How do we end well and maintain our relationships?

Common Ideologies
• We can create a better team, discipline, and society by using critical approaches and an equity lens.
• If we resource under-resourced people and communities, they can help produce long-term social change.
• Culturally affirming pedagogies are critical to the success for minoritized and marginalized students.
• We must constantly strategize and pivot to meet the demands of academic preparation and academic careers.

5 DISCUSSION

Conclusion

Very little research examines the intersection of virtual research team labor, the experiences of women and diverse people working on virtual research teams, and the role that power dynamics play in constraining and opening up possibilities for resilience and agency on virtual research teams between members of all roles, including the non-human actors and digital technologies that support human researchers. The general body of research that does exist focuses on corporate virtual teams (Gilson et al., 2015; Scott & Wildman, 2015) that seek to reduce conflict between members in order to increase profit margins (Brown et al., 2004; Paul et
al., 2004; Bhusari et al., 2007; Wakefield et al., 2008). Likewise, research settings (businesses and universities), theory (positivism), and methodology (experimental) is homogenous in the literature and tends to align with the profit goals of large corporations (Gassmann & von Zedtwitz, 2003; Kratzer, Leenders, & van Engelen, 2006; Hanebuth, 2015). A few studies do conceptualize and study power dynamics on virtual research teams (Griffeth et al., 2000; Gruenfeld & Tiedens, 2010; Xu et al., 2022a; Xu et al., 2022b) and these all suggest that a flattened hierarchy increases creative adaptation, satisfaction amongst researchers, and research output (Xu et al., 2022b). Still, these studies don’t consider all-women virtual research teams in their exploration of power nor do they specifically work through a critical lens. The handful of studies that do explore the experiences of diverse women or consider diverse women researchers were produced during the initial COVID pandemic (Brown et al., 2022; Nocco et al., 2021; Thaba-Nkadimene et al., 2021) and are either short autoethnographies (Brown et al., 2022; Thaba-Nkadimene et al., 2021) or literature reviews (Nocco et al., 2021). Notably, all of these studies examine a snapshot in time rather than a more expansive approach across time and projects; this is a major gap in the literature (Hoffman et al., 2014). Finally, although Nocco et al. (2021) offer an incredibly helpful and practical framework for increasing equity on virtual research teams, this framework was developed with the assumption that team mentors are solely responsible for this work. In other words, Nocco et al. (2021) did not consider how virtual research team members of all roles might contribute to individual and team flourishing.

In my work, I sought to fill these gaps by doing interpretive, empirical research on diverse academic women researchers, and the non-human actors that supported them, working on a single-gender virtual research team over several years before, during, and after the onset of the COVID pandemic. Theoretically, my work was situated in both the critical feminist and actor
network theory postmodern worldviews. Using these worldviews, I conducted 10 interviews and gathered recorded meetings and related documents. I then performed a thematic analysis of the 10 interviews and 9 selected meetings. Next, I completed two rounds of critical discourse analysis. First, within a larger critical ethnographic lens, I analyzed interviews, documents, and recorded meetings using Grbich’s frames of analysis (2013) technique. Then, I ran a second discourse analysis using Venturini’s (2009) cartography of controversies approach. I presented these as a consolidated set of analyses within analyses in this manuscript. In this way, I hoped to contribute to the literature and to the praxis of VRTs composed of diverse woman-identifying researchers, supported by other human and non-human actors, co-creating more resilient systems together.

**Research Question & Purposes**

My research question was: How do diverse, women-identifying researchers, supported by human and non-human actors, co-create strategies that center equity and support well-being on a virtual research team? In exploring this research question, my purposes were as follows:

- To map the human and non-human actors that contributed to the work of the RC team
- To contribute to the scant literature on academic research teams in general and academic virtual research teams more specifically, including research about single-gender teams
- To contribute to the scant learning technologies literature that uses critical and postmodern worldviews
- To give back to the RC team through reflective practice, shared theorizing, and sharing of results.
- To explore how Nocco et al.’s (2021) model might apply to the RC team, outside of the confines of the early pandemic, and outside of environmental sciences contexts
To create a pragmatic work aid for practitioners

Major Findings

The RC team was composed of and supported by many human and non-human actors - both officially recognized and not - that directly affected the work of the team and came to the work with their own competing and complementary ideologies.

These actors included official team members; other people that contributed to opening up and constraining the work of the team, including a midwestern public school district, a corporate eLearning vendor, children and research analysts; communication technologies such as Cisco Webex, Google Drive, and Cayuse iRIS; and policies and procedures both granular and more expansive, like NIH IRB policies protecting human subjects, the PhD process for GRAs, the tenure and review process for faculty, and the grant seeking, application, and funding process. All of these actors came to this work with their own sometimes competing and sometimes complementary values, goals, and ideologies. While the RC team members sought to create a more humane, more culturally affirming research team that could, in turn, contribute to the social good through policy change and resourcing communities, other actors, such as the corporate vendor, sought to increase their profits at the expense of marginalized and minoritized children. Moreover, larger historical structuring systems related to research resourcing were at odds with the goals of the RC. Most notably, this included the underfunding of junior faculty-led projects, which led to the dissolution of the RC team under Ashley.

Although the RC team recognized many human actors, policies, and procedures as contributors to the work of the RC team, the digital technology actors that worked alongside them almost constantly were invisible as agential actors in our conversations. In other words,
while the team recognized that they used Google Drive, Webex, and Cayuse iRIS in their work frequently, they did not recognize these technologies as actors themselves - they were simply tools to use. This is unsurprising since “even when manifestly materialised, in educational literature the agency of technologies – the capacity to perform an action – escapes from observation (Pischetola, de Miranda, & Albuquerque, 2021). Moreover, the team did not consider how these digital technologies take up and replace the historically feminized work of administrative assistants, secretaries, and other workers that have always made intellectual labor possible for researchers. Below, I include some images from the Cartography of Controversies, including the actor network; however, this mapping is much easier to view within the tool itself.

**Figure 23**

Cartography of Controversies
The RC team human participants held common values and ideologies that were critical to their work in creating a flourishing team, but these often conflicted with the ideologies of other ideologies outside of the team.

The RC team held common values that were critical to their work together. The major categories of values that I constructed included agency, constellation shifts, rest, integration, productivity, relationships, and social good. The most frequently coded values category was social good, while the most frequent values code was resourcing people and communities within the social good category and across all values categories. This finding aligns with critical feminist scholarship that suggests that the goal of feminist research is resourcing people and communities (Goodkind et al., 2021). Other very frequently applied codes included, in descending order, support, mentorship, genealogy, relationships, and cultural relevance/affirming. These values are all common in critical feminist approaches (Goodkind et al., 2021). The full list of common values included:

- Agency (Appreciation; Open To Conflict)
• Constellation Shifts (Ecosystem; Evolution; Genealogy)
• Rest
• Integration
• Productivity (Collaboration; Collective Goals; Creativity; Curiosity; Maintaining High Standards; Methodological Diversity; Praxis; Theoretical Homogeneity; Pragmatism; Quality)
• Relationships (Candor; Care; Ego Death; Friendship; Humbleness; Kindness; Mentorship; People-First; Mutual Support)
• Social Good (Changing Policy; Cultural Relevance/Affirming; Equity; Leftist Political Commitments; Reciprocal Partnerships; Resourcing People and Communities

These common values undergirded 8 open disputes that the team wrestled with across the lifespan of the team, but especially during the 2020-2023 version of the team:

• What is the team and who counts as a member?
• How can we balance personal and professional flourishing?
• How can we balance care and productivity?
• How can the white women on the team take on anti-racist work while also centering the voices of minoritized women on the team?
• How can we move forward with different levels and types of resources over time?
• How can we work with corporate educational entities that prioritize profit over culturally affirming learning?
• How can we support team members with different roles and different career pathways?
• How do we end well and maintain our relationships?
In addition, these values and disputes informed common ideologies, or world views, of the human members of the team. These ideologies included:

- We can all flourish better together across time if we put our holistic well-being first instead of the demands of the academy.
- We can create a better team, discipline, and society by using critical approaches and an equity lens.
- If we resource under-resourced people and communities, they can help produce long-term social change.
- Culturally affirming pedagogies are critical to the success of minoritized and marginalized students.
- We must constantly strategize and pivot to meet the demands of academic preparation and academic careers.

Even though the RC team researchers held a remarkable number of values, disputes, and ideologies in common, these often contrasted with other actors. For instance, the corporate vendor that they partnered with includes a set of “Diversity and Access” curriculum development principles (Imagine Learning, 2024) that seem to align with the RC team; however, the vendor neither enacted these principles in their course designs nor in their work with the RC team. In fact, they did just the opposite as evidenced by the research of the RC team itself and across multiple disempowering and racist interactions between the team and the vendor. This contrast in principles and behavior is undoubtedly driven by another ideology: *We are a privately held company and we exist to create ever-increasing profit margins while keeping costs low.* This ideology is, of course, also held by the technologies that worked alongside the RC team members
even while these technologies pragmatically helped the RC team do their work, do it well, and do it more equitably.

**RC team participants and actors co-created flourishing strategies and practices that helped them succeed despite structural and practical discrimination and constraints.**

As already discussed at length, the team constructed major strategies and practices to flourish in their work together in spite of structural constraints. These flourishing strategies and practices were supported by common values, disputes, and ideologies and persist even in the face of the dissolution of the team. Although several of these strategies and practices confirmed Nocco et al.’s (2021) model in a new context, the RC team co-constructed additional flourishing strategies and practices across time and space as indicated by an asterisk *. All of these strategies and practices apply to everyone on the team, unless otherwise noted, since I assume that all of the team members have agency and can act on this agency. At the same time, I recognize that differently positioned researchers are differently resourced and flourishing may be easier for some researchers:

- **Prioritizing Equity**
  - Engaging in DEIR work and allyship work together (as white women in leadership roles)
  - Bringing evolving holistic selves to research*
  - Reflecting on how different regional and cultural identities contribute to expectations around productivity vs care*
  - Reflecting on experiences working on single gender and mixed gender teams*
  - Exploring the impact of professional roles and rankism*
● Prioritizing Well-Being
  ○ Setting an example by making visible & vocalizing work-life balance practices
  ○ Normalizing self-compassion and self-care
  ○ Normalizing hardship through personal talk
  ○ Theorizing well-being*

● Prioritizing The Personal
  ○ Creating team friendships through shared personal lives, including across roles*
  ○ Centering close virtual relationships with team members
  ○ Centering care and caregiving instead of research work*

● Prioritizing Long Term Growth & Change (of projects, teams, and people)*
  ○ Anticipating and embracing their own and their fellow researchers’ role evolution*
  ○ Expanding the boundaries of the team and team membership across space and time*
  ○ Supporting each other through evolving lives and careers*

● Prioritizing Agency and Ownership*
  ○ Empowering each other to create individual pathways based on available options*
  ○ Working together to identify and strategize about disempowering incidents*
  ○ Productively pursuing moments of agency as junior researchers and reflecting on these as mentors*
  ○ Using mixed fidelity technologies to make critical decisions*
  ○ Using mixed fidelity technologies to make research possible*
○ Using mixed fidelity digital technologies for empowerment through professional preparation, cognitive apprenticeship, personalized mentorship, and developing options

○ Productively embracing conflict across positionalities and across time in subversive virtual spaces*

*Despite its success in co-creating flourishing strategies and practices across time, projects, and even other teams, the RC team nevertheless dissolved because of a lack of funding.*

As already discussed, the RC team dissolved in November 2023 in spite of their good work together and their hope to continue working together on the RC project. This dissolution was due to a lack of funding which was, in turn, due to entrenched systematic processes, procedures, and traditions related to promotion and tenure, the grant seeking and funding process, and perceptions of prestige and associated rewards. In plain terms, even though the team did all that it could to continue working together to do research in order to create more culturally affirming online experiences for marginalized students through policy change and course redevelopment, the team dissolved because they could not secure enough funding to pay all members. Although this funding was significant before 2020, team originator and P.I. Monica, a full professor with a high impact score in her field, moved away from the project at that time and the previous funding moved away with her. Ashley tirelessly sought funding after that time, but was unsuccessful in securing enough grants to keep Holly and Jessica on the team. She distributed the funding that she did secure to Wendy, her GRA, and the team member with the greatest financial need as a full-time student. This funding allowed the team to persist for several more years as Ashley and Wendy.
The death of this team may seem like a blow to the “success” of this more than decade old team. However, the humans and technologies that made up this team persist in supporting each other in the short term and long term through social support, mentoring, and friendship. The RC team members still work together in some cases on different projects (Ashley and Wendy; Ashley and Monica) and Ashley, Holly, Monica, and Jessica still stay in touch with each other as friends. Thus, they continue to use some of the flourishing strategies and practices that they constructed together outside of the confines of the team. This, in fact, epitomizes one of the strategies that the team constructed: Prioritizing long term growth and change.

Resources For Practitioners

As discussed above, a major goal of this paper was to extend Nocco et al.’s (2021) equity-based compassionate mentorship model 1) outside of the ecological sciences fieldwork and lab context and 2) outside of early pandemic response. In addition, I wanted to explore how teams that hope to flatten hierarchies might expand on or complicate this model outside of an assumed mentor-mentee structural relationship where more senior members construct the reality that more junior members work within. Finally, Nocco et al.’s (2021) model is based on their own experience as project leaders and primary investigators, along with a robust review of the literature. In my own work, I used an empirical qualitative analysis.

In my construction of the data, I found robust evidence supporting two of Nocco et al.’s (2021) strategies - Prioritize Equity and Prioritize Wellness - along with many of their practices; however, during my analysis I also found evidence for three additional strategies practiced by the RC team: Prioritize The Personal, Prioritize Agency and Ownership, and Prioritize Long Term Growth and Change. As part of my commitment to less hierarchical approaches to research, I provide a resource for virtual research teams below: A reimagining of Nocco et al.’s (2021)
original visual model. This resource is available publicly on a Google Doc, is downloadable, and is editable. Research teams that use this resource should customize it to meet their own needs.

**Figure 24**

*A Comparison of Nocco et al.’s (2021) Mentoring With Compassion model and my Flourishing On A Virtual Research Team model*

Major changes and additions include:
• **Audience/Direction Of Flourishing:** Unlike Nocco’s workaid, my work aid is aimed at all research team members - not at mentors only - and recognizes the mutually supportive role that all team members play in helping each other flourish. Thus, I included same sized visual representations of team members on my work aid and do not recognize their roles.

• **Synchrony:** My work aid is not only applicable to single projects and project teams, but to research portfolios and to the long-term careers of team members. In addition, my work aid recognizes that past, present, and future interweave in flourishing. As in the original workaid, the flower represents the team under consideration - here, the RC team. The trees represent other research teams and other projects, as recommended by Hoffman (2015). Separately, each tree can be viewed as a single project or team, but together they represent the *forest* or many research teams and projects over time (Hanebuth, 215). The size of the trees represents the maturity of the research team or project.

• **Team Members & Other Actors:** My work aid includes members and other technology actors to remind readers that human and non-human actors contribute to - and sometimes detract from! - the strategies that help virtual research teams flourish. In this way, I recognize that the strategies are not ideal concepts but are tools being used by people, technologies, processes, and policies.

• **Common Values. Team Controversies, & Ideologies:** My work aid includes common values and team controversies since these structure and shape the work of virtual research teams over time.
Suggestions For Future Research: Dismantling The Master’s (Research) House And Rebuilding With Robots

In this section, I will briefly present a few suggestions for further research. I will first present some basic recommendations that center around the exploratory nature of my project; however, I am more interested in the more liberatory and post-human potential of this type of research. As such, I include specific recommendations related to potential revolutionary change in how research is done in the academy, along with how we might reconceptualize our work with non-humans in this revolution.

Basic Recommendations Based On Limitations: Topic, Theory, Methodology

As an exploratory study in an understudied area, my research opens the door for many further avenues. First, as indicated previously, more research needs to be done to explore the experiences of academics as laborers working on virtual research teams, including those laborers that have marginalized or multiply marginalized identities. I hold that this specific research should be done first to benefit and resource researchers at the margins. In addition, we know that design from the margins (Rigot, 2022) benefits everyone. However, in my research, I constructed several sub-topics in this area that might be helpful to future researchers, but that were only briefly touched on in my study.

- Comparing Gendered Virtual Team Makeups, Including At Scale: This study did not include the experiences of men or people that fall outside of the gender binary. In addition, my study only included one small research team. How might nonbinary folks experience virtual research teamwork? How do mixed gender or all male virtual research
teams function? How might this be examined at scale? How might the strategies and practices that the RC team constructed together apply to differently-gendered teams - or not?

- **Performing More Empirical Interpretivist Research:** As discussed previously, most research that has been done on virtual teams is performed from a positivist perspective and this is a major gap in the literature. Although I worked in the interpretivist space in my research, this is but one instantiation of interpretivism. How might future researchers explore other interpretivist pathways?

- **Minortized and Marginalized Researchers Taking Up This Work:** In my study, I am sure that my identity as a straight white woman constrained my findings and understanding, just as Bright and VanScoy (2021) discuss in their research. How might minoritized and marginalized researchers take up this work? How might this taking up provide a more rich and perhaps more comfortable experience for future participants and a more rich analysis of the data?

*Dismantling The Master’s House*

Women of today are still being called upon to stretch across the gap of male ignorance and to educate men as to our existence and our needs. This is an old and primary tool of all oppressors to keep the oppressed occupied with the master's concerns. Now we hear that it is the task of women of Color to educate white women -- in the face of tremendous resistance -- as to our existence, our differences, our relative roles in our joint survival. This is a diversion of energies and a tragic repetition of racist patriarchal thought.

- Audre Lourde, *Sister Outsider*
In this study, women working together virtually - and with tools, policies, and processes that they did not always create or enjoy using or want to use - courageously developed strategies and practices through an equity lens to meet and subvert the demands of an entrenched system of academic preparation and production. Although the system itself was sometimes questioned - especially as the researchers reflected on their time as PhD students - and digital tools did open up spaces for subverting time and space to center the personal and the individual, much of the RC teams' time was spent strategizing *around* systematic and systemic barriers rather than actively dismantling the system of research production itself. Yet, the researchers offered a way forward in their ecological and genealogical approach to their labor. This is difficult work and it can not be completed by a single virtual research team. Instead, the traditional system of higher education research must change. This is emancipatory long term work, but doesn’t necessarily offer hope or a pragmatic pathway for people working in the academy *now*. So, what might this revolutionary work look like in the short term? Some questions to consider:

- **PhD Programs**: How can PhD academic programs pragmatically prepare students for the reality of laboring as virtual researchers while opening up space for students to push back on taken-for-granted systems now and in the future?

- **Individual Teams**: How can research teams create transparent, affirming structures, policies, and processes to help all researchers flourish? How might those researchers that are most likely to be harmed by traditional approaches to research be centered in this work? How might researchers on these teams across roles and with different positionalities contribute to this work instead of leaving it to the team leader?

- **Across Teams**: How can research teams - including virtual research teams - begin to talk to one another about their labor conditions and join together to demand change?
- **Departments, Colleges, and Universities**: How might organizations at different levels develop cross-role policies with researchers at the preparation and professional levels that protect and enrich the lives of academic researchers?

- **Cultural Level**: How might researchers work together across intersections of power and tradition to dismantle a system that makes many of us haggard and unable to contribute our flourishing selves to creating a better working environment for each other and more social good?

**Rebuilding With Robots**

Although those of us working in education all experienced the critical role of digital technologies during the early pandemic, these technologies continue to be viewed as neutral tools without agency. For instance, so many of us continue to use Google Drive and related Google technologies to do our daily work without considering the complex set of abilities, goals, and discourses that the technology - and the mega-corporation behind the technology - brings as it labors alongside us, collects our data, increases profits for Google, and makes virtual work possible. Pischetola, de Miranda, & Albuquerque (2021) recognize this gap and call for a socio-material analysis of the technologies that work with us:

In order to discuss the ongoing process of digitisation of education, there is a need to go beyond the predominance of a humanist point of view, and to enter the realm of a post-humanist perspective. This means analysing the materiality of apparently neutral tools such as digital technologies in education and the way they are accountable for bringing about some material and spatial configurations rather than others. (p.397)

In their own research within digital classrooms during the early pandemic, the authors (2021) found that “human and non-human actors are collectively responsible for whether or not a
decision, an action, a path, a prevention or an exclusion is performed” (p.400). Although this research was performed in classrooms and not with virtual research teams, this socio-material approach seems like a fruitful pathway for future researchers that hope to explore the interactions of human and non-human actors on virtual research teams.
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Appendix A: Additional Data

Table 1: Original Coding Tree

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<th>Possible Themes</th>
<th>Possible Categories</th>
<th>Possible Codes</th>
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<tr>
<td>How do diverse, women-identifying researchers, supported by human and non-human actors, co-create strategies that center equity and support well-being on a virtual research team?</td>
<td>Contexts</td>
<td>Work Life</td>
<td>Virtual, IRL</td>
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<td>Personal Life</td>
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<td>Organizational Culture</td>
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<td>Strategies</td>
<td>Prioritizing Equity</td>
<td>Centring DEI in team meetings</td>
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<td>Elevating minoritized researchers</td>
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<td></td>
<td>Prioritizing Well-Being</td>
<td>Encouraging DEI work for non-minoritized researchers</td>
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<td>Conducting Risk Assessments</td>
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<td>Work-Life Advocate</td>
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<td>Identities</td>
<td>Gender</td>
<td>Normalizing Hardship</td>
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<td>Race</td>
<td>Strengthening Social Support</td>
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<td>SEI</td>
<td>Connecting to mental health resources</td>
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<td>Professional Status</td>
<td>Relaxing deadlines</td>
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<th>Power Dynamics &amp; Incentives</th>
<th>Levels</th>
<th>Macro, Meso, Micro</th>
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<td>Project Roles</td>
<td>PI, Support I</td>
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<td></td>
<td>Senior Academics: Power</td>
<td>expert power, legitimate power, reward power, and referent power</td>
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<td>Leadership Style</td>
<td>Compassionate Mentorship</td>
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<td>Hidden Curriculum of Faculty Life</td>
<td>Unspoken Rules</td>
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<td>Technologies</td>
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<td>Hidden Expectations</td>
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<td>Artifact, Knowledge, System</td>
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<td>Mobile/Fixed</td>
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<td>Resilience</td>
<td>Stability: Individual stable trajectory of healthy functioning across time</td>
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<td></td>
<td>Insight: Individual movement forwards with insight after an adverse incident</td>
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<td></td>
<td>Adaptation: Capacity of a dynamic system to adapt successfully</td>
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<td>Resources: Process of harnessing resources to sustain well-being</td>
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<td>Agency</td>
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<tr>
<td></td>
<td>Effects</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Controversies</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2: Final Coding Tree - Themes and Categories

<table>
<thead>
<tr>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place</td>
</tr>
<tr>
<td>Common Realities</td>
</tr>
<tr>
<td>Consequences Of Poor Strategies</td>
</tr>
<tr>
<td>Contexts</td>
</tr>
<tr>
<td>Controversies</td>
</tr>
<tr>
<td>Disempowerment</td>
</tr>
<tr>
<td>Identities</td>
</tr>
<tr>
<td>Actors &amp; Networks</td>
</tr>
<tr>
<td>Power Dynamics</td>
</tr>
<tr>
<td>Projects</td>
</tr>
<tr>
<td>Research Ethics</td>
</tr>
<tr>
<td>Resilience</td>
</tr>
<tr>
<td>Strategies</td>
</tr>
<tr>
<td>Technologies</td>
</tr>
<tr>
<td>Values</td>
</tr>
</tbody>
</table>
Codes

- Disempowerment
- Identities
- Place
- Power Dynamics
- Projects
- Research Ethics
- Resilience
- Strategies
  - Neurtral or Negative Strategies
  - Prioritizing Agency and Ownership
  - Prioritizing Equity
  - Prioritizing Personal
  - Prioritizing The Long Term Growth
  - Prioritizing Well-Being
- Technologies
  - Fidelity
  - Modality
  - Synchrony
  - Type
### Table 3: Common Values

<table>
<thead>
<tr>
<th>Theme</th>
<th>Categories &amp; Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Values</td>
<td>Agency</td>
</tr>
<tr>
<td></td>
<td>Appreciation</td>
</tr>
<tr>
<td></td>
<td>Open To Conflict</td>
</tr>
<tr>
<td>Constellation Shifts</td>
<td>Ecosystem</td>
</tr>
<tr>
<td></td>
<td>Evolution</td>
</tr>
<tr>
<td></td>
<td>Genealogy</td>
</tr>
<tr>
<td>Rest</td>
<td>Integration</td>
</tr>
<tr>
<td>Integration</td>
<td>Productivity</td>
</tr>
<tr>
<td></td>
<td>Collaboration</td>
</tr>
<tr>
<td></td>
<td>Collective Goals</td>
</tr>
<tr>
<td></td>
<td>Creativity</td>
</tr>
<tr>
<td></td>
<td>Curiosity</td>
</tr>
<tr>
<td></td>
<td>Maintaining High Standards</td>
</tr>
<tr>
<td></td>
<td>Methodological Diversity</td>
</tr>
<tr>
<td></td>
<td>Praxis</td>
</tr>
<tr>
<td></td>
<td>Theoretical Homogeneity</td>
</tr>
<tr>
<td></td>
<td>Pragmatism</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
</tr>
<tr>
<td>Relationships</td>
<td>Relationships</td>
</tr>
<tr>
<td></td>
<td>Candor</td>
</tr>
<tr>
<td></td>
<td>Care</td>
</tr>
<tr>
<td></td>
<td>Ego Death</td>
</tr>
<tr>
<td></td>
<td>Friendship</td>
</tr>
<tr>
<td></td>
<td>Humbleness</td>
</tr>
<tr>
<td></td>
<td>Kindness</td>
</tr>
<tr>
<td></td>
<td>Mentorship</td>
</tr>
<tr>
<td></td>
<td>People-First</td>
</tr>
<tr>
<td></td>
<td>Mutual Support</td>
</tr>
<tr>
<td>Social Good</td>
<td>Social Good</td>
</tr>
<tr>
<td></td>
<td>Changing Policy</td>
</tr>
<tr>
<td></td>
<td>Cultural Relevance/Affirming</td>
</tr>
<tr>
<td></td>
<td>Equity</td>
</tr>
<tr>
<td></td>
<td>Leftist Political Commitments</td>
</tr>
<tr>
<td></td>
<td>Reciprocal Partnerships</td>
</tr>
<tr>
<td></td>
<td>Resourcing People and Communities</td>
</tr>
</tbody>
</table>

**Figure 1: Nocco’s Model**
Figure 2: My Model
Figure 5: Screenshots of Cartography of Controversies
Actor Network

All actors are represented equally here in the network, regardless of their consciousness. They are still able to act even if they don’t know that they are acting.
Table 3: Sources of Data With Descriptions

<table>
<thead>
<tr>
<th>Type of Data</th>
<th>Name</th>
<th>Members</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview</td>
<td>Monica</td>
<td>Monica and SH</td>
<td>This is the one interview that Monica could commit to and she received a shorter set of questions ahead of time than the other participants due to this constraint.</td>
</tr>
<tr>
<td>Interview</td>
<td>Ashley</td>
<td>Ashley and SH</td>
<td>This is the first interview with Ashley using the standard semi-structured interview protocol.</td>
</tr>
<tr>
<td>Interview</td>
<td>Wendy</td>
<td>Ashley and SH</td>
<td>This is the first interview with Wendy using the standard semi-structured interview protocol.</td>
</tr>
<tr>
<td>Interview</td>
<td>Holly</td>
<td>Holly and SH</td>
<td>This is the first interview with Holly using the standard semi-structured interview protocol.</td>
</tr>
<tr>
<td>Interview</td>
<td>Ashley</td>
<td>Ashley and SH</td>
<td>This is the second interview with Ashley finishing up the standard semi-structured interview protocol. In addition, I provided Ashley with custom questions based on her first set of responses ahead of time along with insights from the other participants.</td>
</tr>
<tr>
<td>Interview</td>
<td>Wendy</td>
<td>Wendy and SH</td>
<td>This is the second interview with Wendy finishing up the standard semi-structured interview protocol. In addition, I provided</td>
</tr>
<tr>
<td>Date</td>
<td>Event Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8/19/2021:</td>
<td>Project Kickoff Meeting: The RC team and school district meet to talk about how to</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>make the citizenship curriculum developed by Edgenuity more culturally affirming</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>and less racist. Although the team has provided feedback to Edgenuity on how to</td>
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<tr>
<td></td>
<td>improve the curriculum, they have not responded. In addition, the school district</td>
<td></td>
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<tr>
<td></td>
<td>has reservations about moving forward in any new direction since they are in</td>
<td></td>
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<tr>
<td></td>
<td>contract with Edgenuity, who not only provide courses but also credit recovery</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>mechanisms that allow students to advance in their education. Ashley and Holly meet</td>
<td></td>
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<tr>
<td></td>
<td>after to reflect and strategize on a way forward. Major work topics include</td>
<td></td>
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<tr>
<td></td>
<td>corporate entities co-opting equity language without follow through and thinking</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>through potential models for student-led civics evaluations, redesigns, and</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>teaching. 5% time spent on personal talk about the pandemic and parenting at the</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>end of the meeting.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9/27/2021:</td>
<td>Ashley and Holly meet to strategize on how to go forward with the RC project. 5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation</td>
<td>10/25/2021: Strategy Meeting</td>
<td>Ashley and Holly</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
</tbody>
</table>
| | | | time spent on personal talk about parenting at the end of the meeting.  

<table>
<thead>
<tr>
<th>Observation</th>
<th>10/25/2021: Strategy Meeting</th>
<th>Ashley and Holly</th>
</tr>
</thead>
</table>
| | | | Ashley and Holly meet to strategize on how to go forward with the RC project, including thinking through a reciprocally beneficial communication strategy. The school district did not respond to their former email that proposed a research project that included student designers; instead, Ashley and Holly will propose that students evaluate courses as well to add to the existing data set of the school district eval and RC eval. The hope is to inform the district about the problems with the course from a holistic perspective and to encourage Edgenuity to redevelop their course indirectly. They will go forward with the school district, not Edgenuity. During the meeting, Ashley and Holly write emails together - talking out loud to describe their writing and writing goals rather than showing their work, look at an article together. No recorded personal talk today.  

<table>
<thead>
<tr>
<th>Observation</th>
<th>10/28/2021: Project Overview Meeting</th>
<th>Ashley and Wendy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observation</td>
<td>Date/Meeting</td>
<td>Participants</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>01/11/2022: Mentoring Meeting</td>
<td>Ashley and Wendy</td>
<td>School talk, project tracker show, how to create publishable papers and project portfolio themes across courses, talking about upcoming AERA presentation (Wendy will get to show this in class - peer mentor). Ashley talks through communication strategy for academic presentations. Ashley talks for vast majority of time - Wendy asks some clarifying questions and some specific asks for help - stating needs clearly with trusted mentor. Student Voice RC project is only small percentage of time. Majority is planning for presentation. Tech looked at off screen - PPT with comments from Ashley. Tech referenced for future - email feedback and PPT samples with visualization examples. Tech looked at off screen - Running notes - Ashley is filling it in and Wendy is watching.</td>
</tr>
<tr>
<td>12/06/2022</td>
<td>Wendy and Ashley</td>
<td>Wendy and Ashley meet to finish an IRB application. Wendy leads this meeting and talks for the majority of time. They screenshare the IRB iRIS application together while Wendy talks through it and Ashley asks open conceptual and practical questions. Wendy pushes back and thinks out loud, reflecting and strategizing now as well. Last couple of minutes is school talk.</td>
</tr>
<tr>
<td>06/08/2023: Project Overview Meeting</td>
<td>Ashley and Jessica</td>
<td>Ashley talks almost the whole time - this is a project overview meeting. Some personal talk at beginning. Jessica seems to want to chat a bit more, but Ashley wants to get down to business. Topics include overview of study, clarifying authorship order, discussing Jessica’s role versus Wendy’s, technology choices, and communication strategy on the team.</td>
</tr>
<tr>
<td>6/20</td>
<td>Ashley and Wendy - Jessica joins later</td>
<td>Talk through how to choose journals and Wendy’s thoughts on the list that Ashley gathered - come to consensus on where to publish first. Do some reading and responding on own screens. Cognitive</td>
</tr>
<tr>
<td>Observation</td>
<td>7/18</td>
<td>Ashley and Jessica</td>
</tr>
<tr>
<td>--------------</td>
<td>------</td>
<td>------------------</td>
</tr>
<tr>
<td>Observation</td>
<td>8/23</td>
<td>Ashley and Wendy</td>
</tr>
<tr>
<td>Document</td>
<td>Ashley’s Shared RC Team Google Drive Folder/Student Voice Agenda Google Doc</td>
<td>Ashley and Wendy</td>
</tr>
<tr>
<td>Document</td>
<td>Student Voice project iRIS IRB Application co-creation in Webex with screen sharing</td>
<td>Ashley and Wendy</td>
</tr>
<tr>
<td>Document</td>
<td>Student Voice project IRIS application collection of related documents</td>
<td>Ashley and Wendy</td>
</tr>
</tbody>
</table>

**Appendix B: Meta-Theory Comparisons**

**Table 1: Comparison of Positivism, Postpositivism, Critical Theory, and Constructivism**
<table>
<thead>
<tr>
<th>Item</th>
<th>Positivism</th>
<th>Postpositivism</th>
<th>Critical Theory and related positions</th>
<th>Constructivism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontology</td>
<td>Out there, apprehensible reality</td>
<td>Out there but only probabilistically apprehensible reality</td>
<td>Virtual reality shaped by power</td>
<td>Local and specific constructed realities</td>
</tr>
<tr>
<td>Epistemology</td>
<td>Objectivist findings are true</td>
<td>Objectivist findings probably true</td>
<td>Subjectivist value-mediated findings</td>
<td>Subjectivist created findings</td>
</tr>
<tr>
<td>Methodology</td>
<td>Verification of hypotheses, numbers support the truth</td>
<td>Falsification of hypotheses</td>
<td>Dialogue emancipatory</td>
<td>Hermeneutics dialogue</td>
</tr>
</tbody>
</table>


**Table 2: Martin Irvine’s Tendencies of Modernism and Postmodernism**

<table>
<thead>
<tr>
<th>Modernism/Modernity</th>
<th>Postmodern/Postmodernity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Narratives and metanarratives of history, culture and national identity as accepted before WWII (American-European myths of progress). Myths of cultural and ethnic origin accepted as received. Progress accepted as driving force behind history.</td>
<td>Suspicion and rejection of Master Narratives for history and culture; local narratives, ironic deconstruction of master narratives: counter-myths of origin. &quot;Progress&quot; seen as a failed Master Narrative.</td>
</tr>
<tr>
<td>Faith in &quot;Grand Theory&quot; (totalizing explanations in history, science and culture) to</td>
<td>Rejection of totalizing theories; pursuit of localizing and contingent theories.</td>
</tr>
<tr>
<td>Represent all knowledge and explain everything.</td>
<td>Faith in, and myths of, social and cultural unity, hierarchies of social-class and ethnic/national values, seemingly clear bases for unity.</td>
</tr>
<tr>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Idea of &quot;the family&quot; as central unit of social order: model of the middle-class, nuclear family. Heterosexual norms.</td>
<td>Alternative family units, alternatives to middle-class marriage model, multiple identities for couplings and childraising. Polyssexualty, exposure of repressed homosexual and homosocial realities in cultures.</td>
</tr>
<tr>
<td>Hierarchy, order, centralized control.</td>
<td>Subverted order, loss of centralized control, fragmentation.</td>
</tr>
<tr>
<td>Faith and personal investment in big politics (Nation-State, party).</td>
<td>Trust and investment in micropolitics, identity politics, local politics, institutional power struggles.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Root/Depth tropes. Faith in &quot;Depth&quot; (meaning, value, content, the signified) over &quot;Surface&quot; (appearances, the superficial, the signifier).</td>
<td>Rhizome/surface tropes. Attention to play of surfaces, images, signifiers without concern for &quot;Depth&quot;. Relational and horizontal differences, differentiations.</td>
</tr>
<tr>
<td>Crisis in representation and status of the image after photography and mass media.</td>
<td>Culture adapting to simulation, visual media becoming undifferentiated equivalent forms, simulation and real-time media substituting for the real.</td>
</tr>
<tr>
<td>Faith in the &quot;real&quot; beyond media, language, symbols, and representations; authenticity of &quot;originals.&quot;</td>
<td>Hyper-reality, image saturation, simulacra seem more powerful than the &quot;real&quot;; images and texts with no prior &quot;original&quot;. &quot;As seen on TV&quot; and &quot;as seen on MTV&quot; are more powerful than unmediated experience.</td>
</tr>
<tr>
<td>Dichotomy of high and low culture (official vs. popular culture).</td>
<td>Disruption of the dominance of high culture by popular culture.</td>
</tr>
<tr>
<td>Imposed consensus that high or official culture is normative and authoritative, the ground of value and discrimination.</td>
<td>Mixing of popular and high cultures, new valuation of pop culture, hybrid cultural forms cancel &quot;high&quot;/&quot;low&quot; categories.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Mass culture, mass consumption, mass marketing.</td>
<td>Demassified culture; niche products and marketing, smaller group identities.</td>
</tr>
<tr>
<td>Art as unique object and finished work authenticated by artist and validated by agreed upon standards.</td>
<td>Art as process, performance, production, intertextuality. Art as recycling of culture authenticated by audience and validated in subcultures sharing identity with the artist.</td>
</tr>
<tr>
<td>Broadcast media, centralized one-to-many communications. Paradigms: broadcast networks and TV.</td>
<td>Digital, interactive, client-server, distributed, user-motivated, individualized, many-to-many media. Paradigms: Internet file sharing, the Web and Web 2.0.</td>
</tr>
<tr>
<td>Centering/centeredness, centralized knowledge and authority.</td>
<td>Dispersal, dissemination, networked, distributed knowledge.</td>
</tr>
<tr>
<td>Determinacy, dependence, hierarchy.</td>
<td>Indeterminacy, contingency, polycentric power sources.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Seriousness of intention and purpose, middle-class earnestness.</td>
<td>Play, irony, challenge to official seriousness, subversion of earnestness.</td>
</tr>
<tr>
<td>Sense of clear generic boundaries and wholeness (art, music, and literature).</td>
<td>Hybridity, promiscuous genres, recombinant culture, intertextuality, pastiche.</td>
</tr>
<tr>
<td>Design and architecture of New York and Berlin.</td>
<td>Design and architecture of LA and Las Vegas</td>
</tr>
<tr>
<td>Phallic ordering of sexual difference, unified sexualities, exclusion/bracketing of pornography.</td>
<td>Androgyny, queer sexual identities, polymorphous sexuality, mass marketing of pornography, porn style mixing with mainstream images.</td>
</tr>
<tr>
<td>The book as sufficient bearer of the word. The library as complete and total system for printed knowledge.</td>
<td>Hypermedia as transcendence of the physical limits of print media. The Web as infinitely expandable, centerless, inter-connected information system.</td>
</tr>
</tbody>
</table>
Table 4: Structuralism vs Poststructuralism

<table>
<thead>
<tr>
<th>Structuralism</th>
<th>Poststructuralism</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://example.com/structuralism.png" alt="Image" /></td>
<td><img src="https://example.com/poststructuralism.png" alt="Image" /></td>
</tr>
<tr>
<td>Signifiers and Signified</td>
<td>Signifiers and Signifiers and Signifiers and Signifiers...</td>
</tr>
<tr>
<td>Binary opposites construct meaning and reality</td>
<td>Binary opposites contain traces of each other and therefore can not construct meaning or reality</td>
</tr>
<tr>
<td>Passive subjects are mainly constructed via capitalist structures</td>
<td>Active subjects constantly shift and change their identities via embodiment and resistance</td>
</tr>
</tbody>
</table>
Stable and closed language system | Language systems exist and are our main mode of meaning-making. These can be exposed, however, and resisted.

Absolute universal truths exist and semiotic analyses help us uncover them | If there is no truth outside of the text then the concept of absolute universal truths is false.

Figure 1: Doug Belshaw’s Venn Diagram of Critical Theory, Post-Structuralism, and Pragmatism

Figure 2: Intersection of Critical Theory, Social Liberalism, Postmodernism, and Social Constructionism

Note. From Open Thinkering, by D. Belshaw. (http://dougbelshaw.com/blog/venn_diagram/). Copyright 2010 Doug Belshaw.
Appendix C: Study Instruments and Protocols

Research Summary (Lay Summary)

About Me

Hello! I’m Sarah Hepler, a PhD student in the Learning Technologies PhD program at Georgia State University. I’m currently working on my dissertation. Thank you for taking the time to read this summary today and for considering joining this study.

What’s The Purpose Of This Document?

I created this document to briefly summarize my research so that you can be better informed about my work and make an informed decision about whether to participate. A more formal informed consent document will follow if you do decide to participate.

Goals & Basic Research Plan

The goal of this study is to understand well-being strategies that diverse women researchers use while working on virtual research teams. Currently, diverse women researchers in higher education experience systematic and unequal working conditions that can negatively affect their professional and personal well-being. Yet, these same women develop strategies to help improve their own conditions and those of their researchers even in the face of difficult circumstances.

As a woman working in higher education in an instructional design staff leadership role, I’m personally invested in the well-being of the women faculty that I work closely with. My hopes for this study are to 1) provide the current virtual research team with a set of recommendations that they can immediately act on to create a more caring, supportive working environment and to 2) extend these recommendations out to the larger population of women
working on virtual research teams. In this way, I hope to help women researchers affect local and more systematic changes to improve their careers.

My basic plan is to carry out interviews with current and historic members of your virtual research team. In addition, I will carry out observations of recorded meetings and shared team documents provided by current members.

Distribution

During the study, you will have access to your personal interview transcripts and analysis of these transcripts via Google Docs. If you are part of the current research team, you will also have access to a shared analysis of meeting observations and team documents via Google Docs. These Google Docs will allow you to comment on in-process analyses. I welcome your comments as co-creators of knowledge and will take them under consideration in my own work. The study will ultimately be published as a dissertation. The dissertation will be accessible using the GSU Library dissertation database.

Participant Selection/Field Access

I learned about you and the other participants from my PhD advisor Dr. Jennifer Darling-Aduana. As we began working together, she recommended the current study as a good fit for my research interests and as beneficial to your justice-oriented research team. As past and current colleagues, she recommended you as important informants and beneficiaries of the current research.

Benefits and Risks

If you choose to participate, I hope that this experience and the ensuing write-up help you reflect on and take action in ways that are beneficial to your personal well-being as a woman working in the academy. Several risks exist with any research study that involves interviewing
and observation. These include distress, misrepresentation, exploitation, and potentially being identified. To help prevent these risks, I will 1) check in with you regularly to ensure that you still wish to continue participating in the research, 2) give you access to in-process analysis documents, and 3) maintain confidentiality of your identity and your data by giving you a pseudonym. You are welcome to choose one yourself. In addition, I will use a non-identifying description for your institution.

**Interviews**

This study will involve two interviews. The first interview will take place on Cisco Webex and will last for 30 minutes. The second interview will take place on Cisco Webex and will last for 1 hour. For both interviews, I will send you the questions ahead of time so that you can review them if you wish. Both interviews will be recorded and automatically transcribed.

**Observations**

If you are part of the current research team, I will also be watching and analyzing your team meeting recordings. You do not need to actively participate in the observing process in any way.

**Data and Recordings**

All data will be stored in Google Drive. Each participant will have their own folder with documents and links to raw and analyzed data. I will record interviews using Cisco's Webex video conferencing software. After interviews are complete, I will place a link to the video recording in your folder along with the automatically generated interview transcript and an emerging analysis document. If you are part of the current research team, you will also have access to meeting recordings, team documents, and emerging analysis of both.

*Your Thoughts*
If you have any questions or concerns, please feel free to reach out to me at shepler2@gsu.edu. In addition, you are welcome to read this three page research proposal if you like for a fuller view of the study.

**First Semi-Structured Interview: Individual**

In the first interview, I will meet briefly with individual researchers so that we may 1) get to know one another, 2) establish rapport, and 3) chat about their hopes for the nested research projects (mine and theirs).

*Although the interviewee and I will be in dialogue, I predict that the main portion of this interview will be getting to know one another. If not, we will move to the second part.*

- It’s so great to meet you! I’d love to chat more with you before we move on to talking briefly about the study if that sounds ok.
- We continue to live through some pretty weird times. How are you doing?

*Here I do a very brief description of the study - the interviewee has also already received the 2-page research proposal. Then, we’ll talk about the study.*

- Can I answer any questions or respond to any thoughts that you might have about my research?
- One focus of my research is the well-being of women on virtual research teams. How can I make sure that you feel cared for while I’m conducting this research?
- Is there anything that you would find particularly valuable in this experience?
- Is there anything that you might feel particularly concerned about?

**Second Semi-Structured Interview: Individual**

**Critical Ethnography Questions**

**Team and Individual Identity**
○ In general, how would you describe the research team that you’re a part of?
○ How would you describe your role on this team?
○ How do you bring your own intersecting identities with you to this team? How do you exclude parts of your identity?

Virtual Team Work/IRL
○ Tell me more about your experience working on this project as a virtual team member in particular.
○ In what way do you find your work on this virtual research team overlapping with your personal life?

Power
○ Can you tell me a story about a time when you felt particularly empowered during your work with the research team?
    ■ Followup: Can you describe what led to this empowering situation?
○ Do you have any examples of times when you felt less-than-empowered during your work with the research team?
    ■ Followup: How did you move through this time/these times?

ANT Questions

Identifying Actors
○ Other than the people that you’re working with directly on this project, what other people, processes, documents, or technologies might you include as affecting this project?

Digital Technology Actors
Thinking now specifically about digital technologies, can you tell me more about how your research team uses these?

Thinking again about the digital technologies that you just described, can you tell me more about how these technologies specifically affect your work together?

Networks & Controversies

In thinking about your work with this team over time, how has the nature of your work together changed and shifted over time?

Can you describe any specific times when your team had to come to consensus on a difficult and complex decision?

In thinking about digital communication technologies again, how might these have helped you come to consensus? Conversely, how might these have impeded your consensus-building work?

Cosmoses (Values) & Cosmopolitics (Common Realities)

In thinking about all of the different actors involved in this project - people, processes, documents, and technologies - how might you describe the values brought to the project?

In thinking about these values, how do you think that they might shape the work that other virtual research teams are engaged in?

Critical Discourse Analyses

This draft analysis tool uses Grbich’s (2013) suggestions:

Frame

Structural Elements (How is the document or conversation constructed?):

Authors & Participants (Who is included & excluded?):
Discourses (What is included & excluded?):

Overall Frame (What message does the overall structure convey?):

**Textual Elements**

Topics (What topics receive the most attention? How are different topics talked about in different or similar ways?):

Speech & Writing By Role (Who talks or writes the most? What topics do folks with different roles focus on? How do folks indicate their respective positions of power through speech or writing?):

Tone (How does the tone shift over the course of a speech or writing event?)

Assumptions (What assumptions are taken for granted?):

This draft analysis tool uses Venturini’s approach (2010):

- Identify Local Controversial Statements And Literatures
  - Identify individual conflicting ontological or epistemological statements.
  - Combine these into larger competing narratives.

- Identifying Local Actors
  - Describe people, processes, policies or technologies that act upon each other in the phenomenon under study, viewing all actors as equally possible of action even if each actor is not equally positioned with resources.

- Describe Local Network Flow
  - Describe how the nature of relationships between actors has changed and shifted over time.

- Uncover Cosmooses (Ideologies) & Cosmopolitics (Common Reality)
○ Identify the values and meanings that people, processes, documents, and technologies demonstrate.

○ Identify how the values that people, processes, documents, and technologies might create a common reality.