



**RESISTE Scholars: Empowering Future Hispanic-Serving  
Institution Researchers through  
Collaborative Fementorship**

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**ABSTRACT**

*Undergraduate research and mentorship experiences are high-impact practices that foster positive outcomes among Latine and other minoritized students at Hispanic-Serving Institutions (HSIs). This study examined the development and implementation of RESISTE Scholars, a collaborative HSI-STEM education research training and mentorship program. Our work is grounded in 1) notions of servingness aimed at creating a humanizing and liberatory experience in HSI research (Garcia, 2023), 2) intersectionality (Crenshaw, 1989), and 3) critical feminist and liberatory epistemologies centering equity, interdependence, valuing lived experiences, and an ethic of care (Benishek et al., 2004; Malone & Harper, 2022). Leading National Science Foundation-funded projects, RESISTE Scholars engaged in myriad collaborative research projects with faculty, postdoctoral, graduate, and*

*undergraduate researchers. Most identified as Latine and/or WOC, and first-generation college students. Weekly team meetings were coupled with sessions intentionally tailored to build upon undergraduates' strengths while meeting project goals and exploring graduate school and career aspirations. A combination of several qualitative methods, including collaborative autoethnography (Reyes et al., 2021), platicas (Delgado Bernal et al., 2023), and reflexive thematic analysis (Braun & Clarke, 2019) of documents and students' written reflections illuminate their program experiences. Results suggest that multi-layered femtorship within undergraduate research rooted in servingness and critical feminism may be key in empowering the next generation of scholars committed to equity and justice in HSI/STEM education. Integrating critical reflexivity and student input throughout the program, RESISTE Scholars emphasized the power of collaborative, student-centered activities and holistic support. Recommendations for research, policy, and practice on undergraduate research and mentorship at HSIs are discussed.*

**Keywords:** Hispanic-Serving Institutions, Servingness, Mentorship, Femtorship, Undergraduate Research

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## INTRODUCTION

In higher education, women of color (WOC) face significant racial and gender disparities while engaging in high-impact practices such as research (Burwell & Huyser, 2021; Herrera et al., 2022; Roberts et al., 2018). With limited federal guidance for Hispanic-Serving Institutions (HSIs) enrolling significant numbers of minoritized students, including WOC, HSI scholars and practitioners are increasingly adopting culturally relevant mentoring approaches to enhance student support (Garcia et al., 2019; Covarrubias et al., 2023; Garcia, 2019). Traditional models of mentorship often emphasize hierarchical relationships where the mentor holds greater power and authority over the mentee (Johnson, 2002; Malone & Harper, 2022). These Eurocentric models often perpetuate imbalances of power and lack cultural sensitivity, dismissing minoritized students' assets and lived experiences (Hinsdale, 2016; Malone & Harper, 2022). With traditional mentoring often failing to meet the unique needs of WOC, this necessitates a shift towards liberatory and decolonial mentorship models that significantly benefit WOC (Browdy et al., 2021; Castro Samayoa, 2018; Gonzalez et al., 2015; López et al., 2020; Malone & Harper, 2022; Villaseñor et al., 2013).

Femtorship, a feminist mentoring approach, complements

servings by emphasizing empowerment and inclusivity, catering specifically to women's needs and experiences (Benishek et al., 2004; Gonzalez et al., 2015; Ramirez & Puente, 2021). This approach fosters holistic mentorship, crucial for intersectional and inclusive research experiences. However, the integration of femtorship within HSI servings and its impact on WOC remains an area to be further explored (Garcia & Cuellar, 2023; Haeger & Fresquez, 2016; Herrera et al., 2022). Broadly, servings is a multidimensional conceptual framework that discerns how HSIs go beyond enrolling Latine students to intentionally supporting them through institutional and external structures, experiences, and outcomes (Garcia et al., 2019). Acknowledging disparities in research experiences among WOC, this study underscores the importance of femtorship in HSI research training programs. It focuses on the role of femtorship in advancing the academic and personal trajectories of WOC, highlighting the RESISTE Scholars program as an example. This femtor-led initiative contributes to HSI-STEM education scholarship by demonstrating how the integration of feminist mentorship principles within HSIs can cultivate a supportive environment that aligns with servings goals while empowering new generations of HSI scholars.

## **Theoretical Framework**

Contemporary discourse on mentorship within diverse student populations demands that educators reimagine traditional mentor-mentee dynamics. Drawing on Latine epistemologies and methodologies, we advocate moving from conventional *mentorship* to *femtorship* grounding the intersectional, relational, and embodied knowledge production intrinsic to feminist paradigms (Benishek et al., 2004; Acevedo-Gil & Madrigal-Garcia, 2018; Ribero & Arellano, 2022). Three foundational concepts embody RESISTE femtorship: the notion of servings (Garcia et al., 2019), intersectionality (Crenshaw, 1989; 1991), and *platicas* as a critical Chicana/Latina feminist relational methodology (Delgado Bernal et al. 2023). Together, they forge a framework of RESISTE femtorship and liberatory practices aiming to uplift and validate the experiences and aspirations of minoritized students.

Situated within a public HSI, RESISTE's femtorship model centers servings (Garcia et al., 2023), the multidimensional ways institutions intentionally support Latine and other minoritized students, encompassing individual experiences, organizational structures, and broader external influences (Garcia et al., 2019). The very essence of femtorship for WOC at HSIs is underpinned by intersectionality as they navigate multi-layered

systems of oppression, with their racial, gender, and class identities interwoven in complex ways (Crenshaw 1991; Garcia et al., 2019). Employing an intersectional lens, RESISTE femtorship ensures that the unique challenges and strengths inherent to intersecting identities are acknowledged and leveraged, encapsulating the collective ethos of many communities of color which emphasize interdependence, solidarity, and community success over individual achievement (Delgado Bernal, 1998; Delgado et al., 2023; Fierros & Delgado Bernal, 2016).

Closely aligned with notions of servingness and intersectionality, *platicas* are dialogical practices that challenge hierarchical and Eurocentric epistemologies, instead focusing on shared narratives and embodied knowledge (Delgado Bernal, 1998; Delgado Bernal et al., 2023; Fierros & Delgado Bernal, 2016). Unlike traditional mentorship which often perpetuates power differentials, *platicas* within the context of intersectional femtorship and servingness cultivate spaces of mutual respect, co-learning and empowerment among femtors and femtees (Benishek et al., 2004; Delgado Bernal, 2023; Fierros & Delgado Bernal, 2016). Such femtorship approaches can be viewed as an act of servingness, reflecting a commitment to uplift and co-navigate the unique challenges faced by WOC. This ensures the femtor-femtee relationship is not a mere transaction but a transformative journey for both.

### **Collaborative Femtorship and Research**

Embracing collective femtorship frameworks committed to elevating mentee contributions, this type of femtorship fosters trust, communication, and a spirit of reciprocity, with mentors serving not only as advisors but also as collaborators in shared educational endeavors (Benishek et al., 2004). These reciprocal relationships benefit mentees, by providing hands-on experience and validating their identities, as well as mentors, by enhancing research quality and productivity. The mutual advantages underscore the importance of re-envisioning mentorship as a collaborative undertaking rather than a one-sided transmission of knowledge (Acevedo-Gil & Madrigal-Garcia, 2018).

Neglecting collaborative practices and student contributions can be detrimental to the research skills development of underrepresented students in STEM (Dinh & Zhang, 2020). When students perceive a lack of culturally relevant mentorship, their engagement and research development may diminish (Haeger & Fresquez, 2016). Conversely, collaborative mentorship nurtures students' professional identities, positioning them for independent research pursuits, and solidifying their scientific identity (Atkins et al., 2020).

This environment recognizes the mutual benefits of faculty-student interactions, including increased scholarly productivity and innovation (Morales et al., 2017), while also embracing culturally responsive approaches like *comadrisimo* and *familismo* (Ribero & Arellano., 2022; Azpeitia & Bacio, 2022).

### **Student-Centered Approaches and Holistic Support**

Recent scholarship has increasingly focused on student-centered and holistic mentorship that embraces students' unique strengths, individual needs, and well-being (Luedke et al., 2019; Suárez & Beatty, 2022). Approaches such as *mujerista* mentoring, spiritual activism, *comadrisimo*, and culturally relevant mentoring, provide nurturing environments that foster community and ethic of care (Acevedo-Gil & Madrigal-Garcia, 2018; Puente & Zaragoza, 2022; Ribero & Arellano, 2022; Villaseñor et al., 2013). These models are vital in supporting WOC by celebrating intersectional identities, diverse ways of knowing, and fostering reciprocity and solidarity among scholars (Acevedo-Gil & Madrigal-Garcia, 2018; Villaseñor et al., 2013; Wilkins-Yel et al., 2023).

### ***Community Building and An Ethic of Care***

Community building is central to these mentoring relationships. This sense of community is often fostered through storytelling, *platicas*, *testimonio*, and attentive listening that validate students' intersectional identities and nurture notions of reciprocity and solidarity (Espino et al., 2010; Espino, 2021; Gonzalez et al., 2015). An ethic of care within these relationships is pivotal, given the disproportionate challenges WOC face in academic spaces. This ethic involves nurturing intellectual and personal development with empathy, love, and compassion, crucial for the well-being of WOC scholars (Cutri et al., 1998; Taylor, 2019; Ruttenberg-Rozen et al., 2021).

### ***Creating Supportive, Transformative Environments***

The curation of supportive physical environments is essential for the success of WOC in academia. Dedicated spaces for WOC in academic settings facilitate supportive communities and counteract marginalization (Browdy et al., 2021; Herrera et al., 2022; Puente & Zaragoza, 2022). These counterspaces offer more than just physical settings for collaborative learning; they enable WOC to forge empowering relationships that propel personal and academic success. Such spaces challenge Eurocentric expectations of scholars and allow collective occupation of these

environments as an act of resistance (Gee et al., 2022; Morales et al., 2023; Ruttenberg-Rozen et al., 2021).

These spaces facilitate theorization through pláticas and shared experiences, enabling WOC to transform academia (Browdy et al., 2021; Delgado-Guerrero & Gloria, 2013; Fierros & Delgado Bernal, 2016). They preserve generational wisdom and validate the academic, emotional, and spiritual well-being of WOC (Puente & Zaragoza, 2022). These judgment-free zones also nurture familial networks, trust and reciprocal mentorship, allowing WOC to embrace their whole selves while redefining their roles in academia. Given the importance of creating spaces that support the academic and personal growth of WOC at HSIs, prioritizing community building efforts, an ethic of care, and supportive physical spaces that cater to the unique needs of WOC is vital.

### **Institutionalized Support for Undergraduate Research and Femtorship at HSIs**

As undergraduate research and femtorship represent an essential vehicle for fostering humanizing and liberatory experiences among Latine and other minoritized students at HSIs (Garcia et al., 2019), the success of such initiatives hinges on robust institutionalized funding, which encompasses both students and the intricate web of mentors (Schwartz, 2012) and femtors. A significant portion of students identify the need for sufficient income as a primary obstacle to their research participation (Mahatmya et al., 2017). Additionally, the faculty femtors/mentors who guide research experiences also face financial challenges, such as the absence of stipends and inadequate funding, that often deter their involvement in mentoring roles (Brew & Mantai, 2017; Jones & Davis, 2014; Rabinowitz & Valian, 2022). Based on insights gleaned from research on minority stress (Frost & Meyer, 2023; Meyer, 2014), it is vital to acknowledge the institutional commitment and resources needed to adequately serve minoritized students. Without institutionalized support in the form of stipends, rewards, or workload adjustments, the potential of faculty to meaningfully engage and support students remains significantly underutilized (Castro Samaya, 2018; Brew & Mantai, 2017; Jones & Davis, 2014; Peterson et al., 2021; Pierszalowski et al., 2021).

### **Outcomes of Engaging in Collaborative Research and Femtorship**

The empowerment of Latine and other minoritized students in STEM fields within HSIs significantly hinges on the implementation of high-impact practices such as undergraduate research and mentorship. These practices,

rooted in servingness (Garcia, 2019) and critical feminist epistemologies (Delgado Bernal, 1998; Delgado Bernal et al., 2023; Fierros & Delgado Bernal, 2016), profoundly influence students' academic trajectories by enhancing research skills and fostering knowledge construction. Central to this approach is holistic mentoring, which addresses the diverse needs of students, encompassing racial, ethnic, cultural, socioemotional, and academic aspects. This form of mentoring is key to the success and retention of students in STEM, enhancing their self-efficacy, academic goals, and professional identities (Luedke et al., 2019; Morales et al., 2017)

In the context of HSIs, the intersection of servingness with femtor/mentorship creates an environment conducive to both academic achievement and a sense of belonging. Faculty and postdoctoral mentors, who embrace the principles of servingness through culturally relevant practices and engagement, significantly contribute to students' research productivity, which manifests in publication opportunities and higher GPAs (Haegar & Fresquez, 2016; Morales et al., 2017). This mentorship goes beyond conventional academic boundaries, embedding STEM-specific knowledge within students' cultural backgrounds and lived experiences, thus nurturing their professional identities (Herrera & Kovats Sánchez, 2022; Ropers-Huilman & Winters, 2011).

The role of intrinsic cultural motivations like *ganas* is pivotal in motivating Latine students (Azpeitia & Bacio, 2022; Easley et al., 2012). Rooted in ancestral struggles and community upliftment, *ganas* fosters scholarly identity and research self-efficacy. Furthermore, studies continue to underscore the importance of nurturing such intrinsic motivation, especially in contrast to traditional Western concepts like grit (Azpeitia & Bacio, 2022; Aguirre & Romero, 2023). Culturally responsive femtorship in HSIs, by incorporating values such as familismo, is key to enhance students' academic engagement and sense of community (Azpeitia & Bacio, 2022; Benishek et al., 2004). Additionally, critical consciousness development is a vital outcome of such mentorship. Rooted in Chicana feminist theory, critical consciousness enables students to confront systemic marginalization and discrimination, empowering them as scholars and transforming their marginality into narratives of resistance and strength (Watts et al., 2011).

Integrating culturally responsive mentorship in undergraduate research at HSIs offers a model for cultivating future scholars committed to equity and justice in STEM education. This holistic approach, centered on collaborative and student-centered activities, plays a crucial role in enhancing the educational experiences of Latine and other minoritized students. These practices not only advance their academic progress but also foster a culture of

servingness, inclusivity, and empowerment within HSIs, setting a standard for future educational initiatives (Azpeita & Bacio, 2022; Aguirre & Romero, 2023; Herrera & Kovats Sánchez, 2022).

### **Current Study**

This study aims to examine the model of femtorship employed within the Research & Equity Scholarship Institute on Student Trajectories in Education, acknowledging previous research that underscores the complexities involved femtor/mentoring relationships (Crisp et al., 2017), and informed by multiple theoretical frameworks centering servingness (Garcia et al., 2019; Garcia, 2023), critical feminist (Benishek et al., 2004; Malone & Harper, 2022) and Chicana/Latina feminist epistemological orientations (Delgado Bernal, 1998; Delgado Bernal et al., 2023; Fierro & Delgado Bernal, 2016). We were guided by two overarching research questions: (1) How do undergraduate, graduate and postdoctoral researchers engaged in collaborative research at an HSI describe RESISTE femtorship? (2) How does engaging in femtorship at MP, rooted in servingness and critical feminist and Chicana/Latina feminist epistemologies, influence the outcomes of WOC?

## **METHODS**

### **Research & Equity Scholarship Institute**

The femtorship experience occurs within the Research & Equity Scholarship Institute on Students Trajectories in Education (RESISTE), situated within a four-year HSI in the U.S./Mexico border region, which has several public and private two- and four-year HSIs and emerging HSIs (e-HSIs). RESISTE leads National Science Foundation (NSF) funded projects examining STEM pathways and experiences of Latine and other minoritized students navigating community colleges and HSIs, as well as STEM servingness and institutional structures of support. With goals of advancing educational equity, the research collaborative unites faculty, postdoctoral, graduate, and undergraduate student researchers to inform education policy and practice.

### **Participants**

Given our position as insider researchers (Braun & Clarke, 2023; Kim, 2012; Merton, 1972), serving as researchers and participants, disclosing our positionalities is crucial. Most authors are Latine and/or WOC. We are all first-generation college students/graduates, with many beginning in community college. We also share the experience of navigating HSIs as students and professionals, including HSIs in the borderlands. Raised in a



range of rural, suburban and urban areas on the west coast and southwest U.S., several RESISTE members are from low-income and immigrant families. Collectively, our identities and experiences shaped our perceptions and interpretations of the data, with particular attention to how the HSI research femtorship environment supported minoritized students and specifically WOC. Understanding the important role of intentional support within Hispanic-serving spaces heightened our awareness of the structures and practices that uplift the unique strengths of WOC, while acknowledging the institutional investments necessary to enhance servingness.

**Author 1**, lead postdoctoral researcher at RESISTE and e-HSI lecturer, is a Filipina-CHamoru from a working class family. She grew up near the U.S.-Mexico border and attended K-12 Hispanic-serving schools prior to completing courses at a two-year HSI. Engaging in research with WOC peers and key femtors/mentors was pivotal in shaping her academic and career path navigating large universities, particularly as a scholar committed to advancing equity and justice in education.

**Author 2** is a Latina full professor at a four-year HSI who attributes her success to her WOC femtors who supported her journey as a low-income, first-generation college student. She established RESISTE in 2016 as a collective space to engage in externally funded collaborative research and has provided research opportunities for scholars of color, including six postdoctoral research fellows, 25 graduate students and 10 undergraduates.

**Author 3** is a first-generation Ph.D. student in education. She was raised in an agricultural town in Northern California as the daughter of Mexican immigrants. Her contributions are rooted in an ethic of care, critical feminist frameworks, and anti-deficit approaches that uplift the impact of HSI student leaders. Her liberatory, asset-based lens prioritizes students' consciousness of power they possess, divesting from conventional empowerment approaches.

**Author 4**, born to Colombian and Mexican immigrants and raised in East Los Angeles' barrios, overcame housing and food insecurities, and exposure to substance misuse. Now a postdoctoral fellow at RESISTE and university lecturer, he deeply understands the impacts of patriarchal and racist practices in educational spaces, informed by his personal journey through systemic challenges and his commitment to addressing these issues.

**Author 5** is a RESISTE research analyst and political science master's student. Her upbringing in Germany within a low-income Iraqi immigrant family ingrained in her a profound appreciation for education as a pivotal tool for enhancing social mobility. As a first-generation student and WOC, she is passionate about improving higher education policies to make

education more equitable for minoritized students.

**Author 6** is a first-generation transfer student and undergraduate researcher. From a low-income bordertown, she was raised by extended family members due to her mother's struggle with addiction. This motivated her to draw on her identities as a Mexican American woman, first-generation, and low-income student to uplift the needs of students that share similar identities and lived experiences.

**Author 7** is a first-generation, transfer public health student and undergraduate researcher. As a Latina daughter of undocumented immigrant parents, she advocates for minoritized populations through her role in HSI research and as trustee of the campus HSI Student Advisory Board, where she amplifies the voices of Latine students to positively impact the community.

**Author 8**, a Latina and former graduate researcher, currently serves as research and involvement coordinator, connecting transfer students to experiential learning opportunities. As a community college transfer, she values the importance of resources and mentorship in contributing to transfer student success. Previously, she was a graduate assistant for [campus program] providing support for students from a local Hispanic-Serving School District.

### **Sources of Data**

To highlight our experiences engaged in RESISTE Scholars, we utilized collaborative autoethnography (Reyes et al., 2021) in combination with other qualitative methods, such as platicas and document analysis. This collaborative approach (Reyes et al., 2021) prompted collective reflection, co-construction of knowledge and meaning making. Platicas (Delgado Bernal et al., 2023; Fierros & Delgado Bernal, 2016; Morales et al., 2023) regarding RESISTE femtorship experiences, occurred during several weekly collaborative meetings and yielded rich narrative data. We also linked these discussions to our collective reading of the femtor/mentorship literature. Documents were co-created for the dual purpose of facilitating platicas and for thematic analysis. Contributions to these documents allowed for self-reflection and prepared us for meaningful group conversations. While postdoctoral and faculty scholars participated in platicas, we intentionally prioritized student perspectives. To further amplify student voices, data also include students' written reflections. Integrating multiple qualitative approaches offered a nuanced, deeper examination of our RESISTE femtorship experiences.

## **Data Analysis**

Utilizing reflexive thematic analysis (Braun & Clarke, 2019, 2022) we identified themes within documents co-created during platicas (9) and students' written reflections (5) through an iterative, inductive and deductive coding process. We primarily relied on data-driven, experiential reflexive thematic analysis (Braun & Clarke, 2022) in order to center the powerful narratives of RESISTE Scholars. Documents were reviewed multiple times, and salient ideas were systematically coded with a particular focus on student perspectives. Codes were mapped onto broader themes and subthemes to align with our research questions and ensure that themes fit well with the data.

### ***Trustworthiness***

Several strategies maintain the credibility and trustworthiness of data. Member-checking (Candela, 2019; Lincoln & Guba, 1986) allowed researcher-participants to review the findings for accuracy and ensure document interpretations resonated with lived experiences. Data triangulation of documents from platicas along with students' written reflections, afforded a comprehensive understanding of RESISTE femtorship. Committed to transparency and the protection of participants, we maintained high ethical standards cognizant of the power dynamics during platicas as well as in our roles as researcher-participants. We carefully reflected on our experiences throughout the process, being sure to uplift the voices of students. This minimized potential harm to participants, while maximizing the study's integrity.

## **RESULTS**

Three overarching themes characterize the RESISTE Scholars model of collaborative research femtorship (Figure 1). With RESISTE Scholars in the center, our model of femtorship encompasses three major components, which mutually influence each other. These include: (1) our shared definition of and expectations for femtorship; (2) critical structures and practices for serving WOC in research; and (3) RESISTE Scholars femtorship outcomes. Our collective definition of femtorship is informed by and helps shape servingness structures and outcomes of engaging in RESISTE Scholars. Similarly, structures for servingness and outcomes are reciprocal: critical structures and practices enhance femtorship outcomes, while our critical reflection on femtorship outcomes contributes to the refinement of our practices within RESISTE. With an emphasis on uplifting WOC student experiences, we detail our collaborative autoethnography and themes from platicas and reflection documents in the sections below.

**Defining and Understanding RESISTE Scholars femtorship**

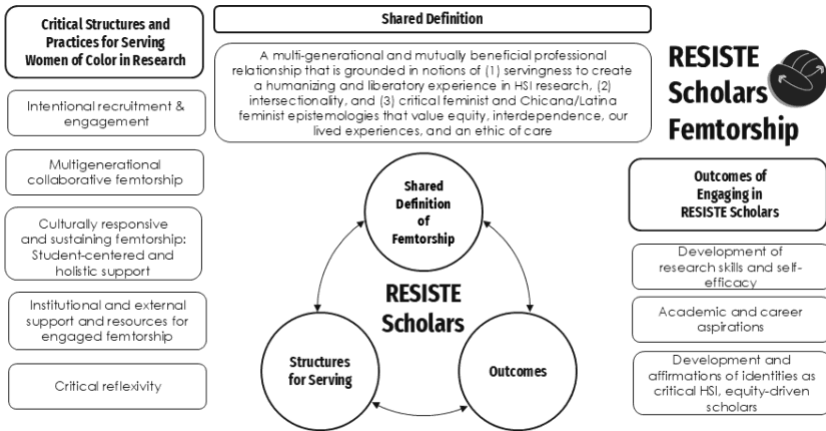
We collectively defined RESISTE Scholars femtorship as a multi-generational and mutually beneficial professional relationship rooted in (1) servingness to foster a humanizing and liberatory experience in HSI research, (2) intersectionality, and (3) critical feminist and Chicana/Latina feminist epistemologies emphasizing the value of equity, interdependence, lived experiences, and an ethic of care.

**Critical Structures and Practices for Serving WOC in Research**

RESISTE Scholars femtorship was further defined by critical structures and practices for serving WOC detailed below. The intentional recruitment of students with limited access to high-impact practices provided meaningful research experiences promoting their academic and professional growth. We also engaged scholars interested in collaboration and shared values that advance students’ opportunities in higher education.

**Figure 1**

*RESISTE Scholars femtorship: Themes and Subthemes*



Together, we cultivated a racially, culturally, and linguistically centered research environment that prioritized our holistic well-being to sustain empowering and liberatory experiences for WOC.

**Multi-Generational Collaborative Femtorship**

Multiple generations of RESISTE Scholars included the faculty

director and postdoctoral, doctoral, masters, and undergraduate researchers. Collaboration and reciprocity were revered as fundamental components of RESISTE's model of femtorship. With research guided by faculty and postdoctoral researchers, our emphasis on reciprocal femtorship uplifted student leadership and contributions. Along with efforts involving the entire research team, RESISTE Scholars engaged in: faculty-student, postdoc-student, and peer/near-peer collaborations. Collective research endeavors included manuscript development and critical quantitative survey design. Faculty-student collaborations attended to academic progress, graduate school planning, and research project insights. Postdocs jointly guided student research project conceptualization and presentations. Peer/near-peer collaborations involved pairing either two undergraduates or an undergraduate with a graduate peer femtor. Serving as peer/near-peer femtors promoted femtees' growth as scholars and leaders. Acknowledging the vital role of all team members in co-constructing the research space and femtoring relationship, we benefited from establishing a network of femtors. In the face of challenges, certain femtors were better equipped in addressing issues aligned with their expertise. For instance, some students sought quantitative or qualitative methodological guidance, while others aimed to connect with faculty in graduate programs.

***Culturally Responsive and Sustaining Femtorship: Student-Centered and Holistic Support.***

Complementary to collaboration, culturally responsive and sustaining femtorship that centers students and holistic support remains a critical servingness structure. This section outlines our co-creation of a community defined by reciprocity and an ethic of care. Beyond conventional academic support, RESISTE femtorship provided a caring, asset-based and liberatory environment. This context validated our intersectional identities and experiences, simultaneously encouraging authenticity in research engagement.

Community-building activities strengthened our relationships and sense of belonging. Informal collaborative sessions to introduce ourselves (e.g., pronouns and roles) and share examples of support helped us establish a welcoming environment. Using a visual method from our research, subsequent sessions featured our educational and career trajectories to acknowledge each person's experiences and perspectives. Check-ins further enhanced community-building by offering space to discuss personal updates and academic progress. This was complemented by smaller collaborative sessions, such as one-on-one meetings with the lead postdoc, and graduate

femtor (past undergraduate researcher). Celebrating milestones (e.g., graduations, academic awards, etc.) also helped us forge a community of support.

A vital aspect of RESISTE community-building involved scrutinizing the power dynamics of multi-generational femtorship, with scholars at various stages in their academic careers. Given our research institute roles and diverse intersectional identities (e.g., race/ethnicity, gender, SES, immigrant status, (dis)ability status, etc.), we considered how differences in power and privilege shaped our participation in RESISTE. Highlighting the importance of shared power and reciprocal learning uplifted student perspectives while challenging whiteness and hierarchical structures in traditional mentoring. This enhanced students' confidence as scholars, protecting them from academic competitiveness and helping them understand the impact of their contributions. By establishing trust, femtees felt empowered to have honest conversations about educational equity, and power dynamics within RESISTE and beyond.

Culturally responsive and sustaining practices also embodied holistic femtorship, which honored each person's mind, body, and spirit. Through genuine care, empathy, and compassion, RESISTE femtorship prioritized work-life balance, family/community, and overall well-being, encompassing our physical and mental health. Leaving individual office doors open set the tone of an inclusive and collaborative research environment, while check-ins strengthened communication and our collective sense of trust, *familia*, and shared empowerment. Holistic support was crucial for sustaining students' mental health and well-being during challenging academic experiences. One student expressed, "...this experience helped me envision what compassionate care and community support can look like." She elaborated, "I gained a stronger commitment to advancing the work...(*hechandole ganas al trabajo*)...I hope that one day I can also create a healthy, supportive and loving academic [environment] for my future students." Our emphasis on reciprocity recognized femtees as essential sources of support for femtors, reaffirming the value of collaborative, holistic femtorship that intentionally supports WOC.

Bolstering culturally responsive and sustaining femtorship, we recognized RESISTE's physical space as a form of resistance. Even within HSIs, higher education spaces that explicitly center the contributions of WOC are rare. Thus, we intentionally co-created a welcoming environment, illustrative of our values. The walls feature RESISTE's research institute logo, pictures of current and past members of the research team, and a drawing of the team from years past. Artwork also acknowledges the powerful

contributions of WOC in STEM. Our offices reflect our identities and communities of support both within and outside of academia. For many, RESISTE offered a space of resistance, a place to gather and seek support while combating microaggressions and oppression experienced more broadly in academia. Centering WOC empowered our team, directly opposing the many other spaces within higher education that tend to overlook the experiences and contributions of WOC.

### ***Institutional and External Resources for Engaged Femtorship***

Our team participates in RESISTE through funded research opportunities. Financial support is provided through various funding streams, including NSF- and institutionally-funded positions (e.g., summer undergraduate research program, graduate assistantships, federal work study, university fellowships). Further, NSF grants financed the physical space needed to engage in collaborative research and femtorship.

### ***Critical Reflexivity: The Promise of Continued Growth***

Another important feature of RESISTE femtorship entailed critical reflexivity. Student feedback through collaborative sessions and written reflections revealed successful aspects of programming along with areas for growth, and reinforced our commitment to ensuring high-quality research experiences. With student-centered approaches at the forefront, we consulted senior student scholars, including those with student affairs experience. Incorporating feedback from a former undergraduate researcher who shared similar identities and experiences with incoming undergraduates was crucial for supporting their transition into research. This thorough assessment process informed modifications to subsequent training and femtorship experiences, promoting both academic and holistic support in the “third space.” Reflexive practices also resulted in additional resources for students and connections to professional organizations, webinars, scholars and practitioners.

### **RESISTE Femtorship: Shared Empowerment through Experiences and Outcomes**

Along with delineating critical structures and practices for serving WOC in research, we sought to understand how the RESISTE femtorship experience influenced the outcomes of WOC. Platicas and student reflections prompted us to consider what we learned as a collective.

### **Development of Research Skills and Self-Efficacy**

Several discussed their individual and collective growth as scholars,

including development of key research knowledge, critical thinking skills, and self-efficacy. Femtees learned how to use electronic databases and citation management software to conduct literature reviews. They also received key guidance to prepare conference abstracts and presentations. With increased research self-efficacy, RESISTE Scholars acknowledged the potential for collaborative research, sharing that, “[r]esearch environments [do] not need to be stressful or competitive to be productive.” As part of a supportive team, a student stated that RESISTE “[demystified] and create[d] a new model for what research contributions look like...challenging norms in academia.” In addition to collaborative research skills, students’ scholarly development was catapulted by the opportunity to pursue projects that deepened their own research interests and passions.

### **Academic and Career-Related Aspirations**

An important resource beyond the classroom, connections to multiple femtors prompted further exploration of academic and career-related aspirations. Leveraging students’ *ganas* or desire to persevere and achieve academically, we regularly discussed their goals to ensure alignment with research tasks, provided feedback on materials, helped with interview preparation, and shared insights about programs, inspiring some to pursue advanced degrees. A student emphasized, “It makes me believe that I, as a woman of color and first-gen student, can be a research[er]/academic and pursue higher education.” Graduate school aspirations were refined through conversations about career pathways and opportunities to address issues of equity in education, their communities and society. A femtee expressed, “The mentorship and guidance [gave] me the confidence to pursue graduate school and see myself in positions I could not imagine. My mentor provided tools to help me become a great competitor for graduate school.” For some, graduate school seemed unattainable given their status as transfers and first-generation college students. Thus, offering a safe space for RESISTE Scholars to discuss their academic and career goals was essential.

### **Development and Affirmations of Identities as Critical HSI, Equity-Driven Scholars**

Among the most significant outcomes of RESISTE collaborative research and femtorship was the development and affirmation of our identities as critical HSI, equity-driven scholars. By immersing ourselves in critical perspectives in education, we facilitated critical consciousness development, and gained a deeper understanding of the theoretical foundations of RESISTE research, our femtorship approach, and our goals for promoting equity in



education. This also established a supportive space for students to critically examine their own experiences in education and beyond. Although many joined with an understanding of unfair societal structures affecting WOC and other marginalized groups, RESISTE experiences deepened students' passion for meaningfully addressing inequities. Reading literature and having critical discussions deepened students' understanding of oppression within educational institutions and society, emboldening them to reframe their personal experiences through a lens of power. Recognizing their potential to drive change for future generations of students like themselves empowered femtees to envision how they could advance equity and justice through critical research influencing educational policies and practices.

Development and affirmations of their critical consciousness and identities also evoked liberatory notions of healing. Valuing their intersectional identities and cultural knowledge empowered femtees to challenge discourses and norms within education that tend to privilege "Eurocentric ideology," and inspired them to occupy educational and research spaces with authenticity. By acknowledging their ideas and encouraging deeper examination of existing interests and passions, femtees felt like "*Chingonas (a term of empowerment meaning "badass women")* [who]...elevate the work with unique ideas [and] contributions." Facilitating the development of new research skills and knowledge aligned with existing cultural knowledge, values, and identities promoted the integration of femtees' personal and professional identities.

With reciprocity as a cornerstone of RESISTE, femtees' development as critical, HSI, equity-driven scholars also reaffirmed femtors' motivations and commitments to promoting equity and justice in education. Together, we deepened our understanding of HSI research and ourselves. Platicas underscored our motivations for and commitment to research and femtorship that intentionally serves minoritized students. This is the "...manifestation of the freedom dream. That supportive research spaces in academia can exist, and that we as women can make an impact on the field of [education] with people that uplift [one another]." Our growth as scholars coupled with a shared appreciation of the meaningful relationships that we cultivated at RESISTE, bolstered our commitment to femtorship approaches that optimize support for minoritized students, especially WOC.

## **DISCUSSION AND IMPLICATIONS**

Emphasizing servingness (Garcia et al., 2019), intersectionality (Crenshaw, 1991), critical feminist (Benishek et al., 2004; Malone & Harper, 2022) and Chicana/Latina feminist epistemologies (Delgado Bernal et al.,

2023), this study uplifts the voices of WOC at HSIs. Overall, results suggest the potential for shared empowerment and positive outcomes galvanized by collaborative research and femtorship. Structures for servingness cultivated meaningful relationships while offering WOC targeted academic and career guidance, expanded personal and professional support networks, and a strengthened commitment to serve as critical HSI, equity-driven scholars and practitioners.

The current study has important implications for enhancing femtorship and servingness for WOC at HSIs through research, policy and practice. First, our use of multiple qualitative methods to examine RESISTE femtorship underscores the need to reimagine methodological approaches to understand the nuanced experiences of WOC researchers. Attentive to important ethical considerations, combining autoethnography with *platicas* allowed us to deeply examine RESISTE femtorship.

### **Collaboration, Reciprocity and Shared Power**

Distinct from traditional mentorship that typically functions on formal and hierarchical relationships (Johnson, 2002; Malone & Harper, 2022), RESISTE's femtorship model shed light on the importance of collaboration, reciprocity, and shared power. We deeply valued collaboration, embracing multicultural feminist approaches (Benishek et al., 2004) which challenge deficit-oriented mentorship models that perpetuate power imbalances and overlook the strengths and challenges of minoritized students (Hinsdale, 2016; Malone & Harper, 2022). Grounded in an ethic of care (Cutri et al., 1998; Lewis & Koonce, 2017), RESISTE's emphasis on reciprocity, openness (Malone & Harper, 2022) and communication rendered an inclusive research space. Findings also reiterate the advantages of establishing a community of mentors (Cutri et al., 1998; Frederick et al., 2021) or network of care (Ribero & Arellano, 2022). RESISTE's collective femtorship expanded areas of expertise and professional networks, while valuing collaboration and diverse perspectives promoted inclusive, enriching experiences for WOC and increased the potential for robust, rigorous research.

Informed by multicultural feminist and liberatory mentoring which advocates for shared power (Benishek et al., 2004; Malone & Harper, 2022), RESISTE addressed power dynamics by challenging whiteness and the hierarchical nature of traditional mentorship. Transformative shifts from conventional mentorship structures offer minoritized students more equitable experiences. Sharing power, in particular, is critical in supporting students' self-efficacy as scholars, especially for WOC who often confront race and

gender-based discrimination in academic spaces (Herrera et al., 2022; Ong et al., 2018). Given its potential impact, future research should explore whether collaborative femtorship similarly benefits WOC in other disciplinary and institutional contexts. Critical conversations challenging power dynamics were pivotal in reaffirming our commitment to educational equity. Thus, educators seeking to serve WOC and other minoritized students at HSIs must uplift their scholarly contributions, disrupting the competitiveness that pervades academic and professional settings. Because our findings align with prior research on the impact of networks of care that operate multi-directionally (Ribero & Arellano, 2022) and on reciprocity (Lewis & Koonce, 2017), educators serving WOC at HSIs must also consider the mutual benefits of reciprocal femtorship. While femtors provide guidance and support to emerging scholars, femtees bring diverse experiences and insights that help strengthen research and its implications for policy and practice.

### **Defining and Adapting to the Evolving Femtorship Needs of WOC in Research**

To fully realize the mutual benefits of collaborative femtorship, requires explicit conversations to collectively define femtorship and expectations (Benishek et al., 2004; Malone & Harper, 2022). Our shared definition of RESISTE femtorship centered reciprocity, servingness (Garcia, 2023; Garcia et al., 2019) and intersectionality (Crenshaw, 1991), along with Chicana/Latina feminist (Delgado Bernal et al., 2023; Fierro & Delgado Bernal, 2016) and other critical feminist epistemologies (Benishek et al., 2004; Cutri et al., 1998). An on-going conversation regarding RESISTE femtorship and our co-creation of the *third space* (Garcia, 2019), this communal understanding fostered a supportive professional environment. Engaging in RESISTE in ways that intentionally prioritized our shared values of equity, interdependence, and an ethic of care (Cutri et al., 1998), cultivated a humanizing and liberatory experience for WOC. Establishing clear expectations enhanced communication to abate potential misunderstandings, and empowered WOC to navigate challenges. As we discovered through our own experiences, femtors and femtees must be open to an evolving definition of femtorship. Adapting to students' dynamic needs is an especially important feature of femtorship that seeks to serve minoritized students, including WOC.

### **Culturally Responsive and Sustaining Femtorship**

This study provides further evidence that culturally responsive and sustaining femtorship is essential to adequately serve WOC at HSIs (Gonzalez

et al., 2015). Such strategies, including cultivating an ethic of care (Cutri et al., 1998; Valenzuela, 2020) and student-centered approaches, provide more holistic support. By promoting the integration of personal and professional identities (Benishek et al., 2004; Malone & Harper, 2022), these validating experiences embolden students to engage in academia and other professional settings with authenticity (Gonzalez et al., 2015), and reaffirm that students strengthen research endeavors.

Results contribute to research demonstrating the utility of aligning the development of new knowledge with students' existing cultural knowledge, values and identities to enhance their sense of personal and professional fulfillment. Further, research experiences involving WOC must foster a sense of belonging (Atkins et al., 2020; Luedke et al., 2019) and validate students' intersecting identities (Herrera et al., 2022; Villanueva et al., 2019). RESISTE femtorship honored the holistic well-being of team members (Gonzalez et al., 2015; Harris & González, 2012) and embodied an ethic of care (Cutri et al., 1998), nurturing a sense of *familia*. Findings also underscore the transformative potential of culturally responsive femtorship approaches, including *comadrisimo* and *familismo*, as tools for liberation and healing (Azpeitia & Bacio, 2022; Gonzalez et al., 2015; Ribero & Arellano., 2022). Learning environments that exude empathy and remain responsive to the needs of students, strengthen their perseverance and opportunities to academically and personally thrive.

Servingness through culturally responsive and sustaining femtorship must also prioritize building community (Benishek et al., 2004; Malone & Harper, 2022). Focusing on the relational aspects of femtorship created a supportive network of RESISTE Scholars centered on trust, understanding, and communication. Strong connections contributed to a supportive learning and professional environment where students felt empowered to seek femtor support. Staying connected (Malone & Harper, 2022) and centering relationships is especially important for those from cultures that flourish in community (Ramirez & Puente, 2021).

Results also illuminate the value of providing professional learning opportunities for research femtors/mentors to integrate culturally responsive and sustaining practices. This requires femtors/mentors to invest time and resources in understanding the student populations they serve. For RESISTE Scholars, many of whom are Latina/e, it was vital to incorporate practices that honor their cultural values. Similar programs serving minoritized students may consider incorporating practices like frequent check-ins and sharing of educational and career trajectories to collaborate in ways that acknowledge their lived realities beyond the research setting. In light of RESISTE Scholars'

positive research experiences that recognized the fullness of their humanity, femtors seeking to serve WOC and other minoritized students at HSIs might consider integrating holistic support. This may involve collectively engaging in ways that allow all participants to prioritize their well-being while balancing personal and professional responsibilities.

### **Intentionality in Recruitment**

Targeted efforts to recruit students from groups typically underrepresented in research and experiential learning further demonstrates the benefits of intentional recruitment as a form of servingness (Martinez et al., 2018; Rodriguez-Operana et al., 2023). This is especially important in institutional contexts like HSIs, which serve as vital STEM pathways for minoritized students (Herrera & Rodriguez-Operana, 2020). Addressing underrepresentation and uplifting diverse perspectives improves students' access to research opportunities while enriching the educational experience and increasing the potential for advancements in the field via a more comprehensive body of knowledge.

### **Commitment to Reflection**

Assessment of culturally responsive and sustaining practices (Harris, 2021; Siwatu, 2007) within HSIs also provides a strong foundation of servingness (Rodriguez-Operana et al., 2023). Doing so at RESISTE nurtured our shared commitment to continuous improvement, and thus, servingness through access to high-quality research and femtorship experiences. Educators committed to advancing equity and servingness efforts must adapt to the evolving needs of students, as this is integral to creating an inclusive, student-centered environment that promotes the success and well-being of minoritized students.

### **Institutionalized Servingness**

Results also further substantiate the critical role of institutionalized support as a key structure to sustain servingness through experiential learning and mentorship (Herrera et al., 2023; Rodriguez-Operana et al., 2023). A shift towards comprehensive funding that prioritizes experiential learning may warrant allocation of resources to faculty incentives like summer pay or course buyouts (Jones & Davis, 2014; Peterson et al., 2021). Such policy changes would address the dual challenges of limited faculty incentives and student financial constraints (George & Domire, 2020; Pierszalowski et al., 2021). Furthermore, establishing centralized offices for undergraduate research may streamline funding processes, as these entities can take on roles

ranging from training to facilitating interdisciplinary collaborations and identifying external funding sources (Pierszalowski, 2021).

For programs like RESISTE Scholars to thrive, HSIs must adopt holistic approaches to funding that cater to students and femtors/mentors (Garcia et al., 2019; López et al., 2021). Addressing financial constraints that deter participation and optimize faculty incentives can revolutionize the undergraduate research landscape (Barker, 2009; López et al., 2020; Rabinowitz & Valian, 2022). Building a robust funding infrastructure sets the stage for sustainable growth in HSI-STEM education. Institutionalized servingness may also entail investment in the physical spaces where WOC engage in research and femtorship. As higher education environments disproportionately feature images of white male scholars (Fitzsosa et al., 2019; Gee et al., 2022), physical spaces at HSIs may serve as spaces of resistance by uplifting the contributions of women and scholars of color. Improving institutional resources enhances the reach and impact of femtorship and experiential learning, while demonstrating a commitment to an inclusive educational environment that promotes the success and empowerment of underrepresented students within HSIs.

### **Enhancing Servingness Outcomes Through Collaborative Femtorship**

As shown by our findings, allocating resources to collaborative research femtorship may strengthen servingness outcomes. Further emphasizing the importance of experiential learning and mentor/femtorship in developing research skills and self-efficacy (Ashcroft et al., 2021; Dorff & Weekes, 2019), students' reflections unveiled their sense of hope for the possibility of collaborative and inclusive research environments. Often stunted by isolating or competitive climates (Herrera et al., 2022; Ong et al., 2022), RESISTE offered examples of cohesive spaces wherein research is strengthened by mutual support and growth. Given the influence of experiential learning on academic/career-related aspirations (Eagan et al., 2013), the current study also suggests that femtors/mentors must intentionally create an environment conducive to open, sustained communication about students' long term academic and professional goals. Building on students' *ganas* (Aguirre & Romero, 2023; Easley et al., 2012) through intentional conversations are critical in structuring experiences that are well aligned with their goals and allow them explore educational and career pathways. In combination with helpful resources, this support empowered students to confidently navigate their academic and professional journeys. So long as it does not default to traditional western ideologies of grit (Fregoso, 2024), results reinforce the importance of protecting intrinsic cultural motivations

like *ganas* which inspire Latine students to persevere in the pursuit of academic and personal goals (Aguirre & Romero, 2023; Azpeitia & Bacio, 2022).

Beyond traditional academic and career outcomes, this study highlights features of RESISTE that may contribute to the development and affirmation of students' identities as critical HSI, equity-driven scholars. Our emphasis on reciprocity, and valuing femtees' perspectives and contributions strengthened our commitment to advancing equity. Motivated by our familial/community values and drive to improve education for future generations, these results shed light on the power of nurturing community-centered identities (Herrera & Kovats Sánchez, 2022). Paying it forward or "lifting as we climb," mirrored other culturally sustaining approaches known to aid WOC (Ribero & Arellano, 2022). Our findings also reiterate the importance of investing in professional development to enhance femtor/mentor critical consciousness (Watts et al., 2011) and prepare them to foster students' critical consciousness. Developing tools to advocate for equity and justice by deepening awareness of systemic challenges is essential to adequately support WOC.

### **Situating Our Findings in Context**

The current study illuminated the possibilities for collaborative research femtorship supporting WOC at HSIs, however, it is important to acknowledge its limitations. Although program evaluation is occasionally the goal in research, the strategies described here are based on our experiences and should be regarded as examples of what worked well for our team rather than a "checklist" of ways to enact servingness through femtorship. We strongly encourage scholars and practitioners to tailor their approaches to femtor/mentorship in ways that intentionally consider students' unique assets and needs. Further, our collaborative autoethnographic approach requires important ethical considerations, given its subjective nature with the inclusion of our personal experiences. While some argue that researcher biases may compromise the study's objectivity and credibility (Poerwandari, 2021), combining *platicas* with collaborative autoethnography emboldened RESISTE Scholars to share their stories, further demonstrating the strengths of this research methodology (Denzin, 2014; Reyes et al., 2021). Attentive to group power dynamics, we upheld the integrity of our study by prioritizing student voices during *platicas*, incorporating students' research experience reflections, and offering opportunities to give feedback on study findings.

## CONCLUSION

Given the success of multi-generational femtorship among RESISTE Scholars, including many whom transferred from two-year HSIs, findings underscore the possibilities for expanding support for WOC through capacity-building efforts bridging research partnerships between two- and four-year HSIs (Amey et al., 2010; Ashcroft et al., 2021; Rodriguez-Operana et al., 2023). Further, the need for minority serving institutions such as HSIs to invest resources in femtor/mentoring and experiential learning for students from underrepresented groups is imperative. This includes financial support for femtors and femtees to participate in research, dedicated physical spaces on campus for such activities, as well as critical, equity-minded professional learning opportunities. Institutions must also prioritize time devoted to collaborative experiential learning within students' educational programs and faculty teaching loads. Together, these efforts may be reinforced by a strong commitment to critical reflection and continuous improvement. Immersive research experiences within a collective like RESISTE Scholars that values servingness, intersectionality and critical feminist frameworks, hold the promise of a learning environment that is liberatory for WOC. This is crucial for cultivating future generations of HSI scholars and educators committed to equity and justice for the minoritized student populations that make up our HSIs.

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