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“It’s For My Science Daughters”: A Portrait of Dr. Leticia Márquez-Magaña’s [Counter]Storied Legacies for Latinas and STEM

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“It’s For My Science Daughters”: A Portrait of Dr. Leticia Márquez-Magaña’s [Counter]Storied Legacies for Latinas and STEM

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Abstract

Dr. Leticia Márquez-Magaña is used to being “the one” and “the first.” From the first in her family to graduate from high school to the first Latina faculty member at her institution’s College of Science and Engineering, she is determined not to be the last. This qualitative study blends portraiture and counterstory methodology to discuss Dr. Márquez-Magaña’s legacy on diversifying STEM, especially for Latinas and women of color scientists, whom she calls her “science daughters.” Dr. Márquez-Magaña has spent decades resisting patriarchy and racism in STEM and academia by bringing in her Mexican American culture and muxerista values. While encountering cultural taxation, microaggressions, and the double bind of being a woman of color in a field that suppresses discussions of race and gender and feigns objectivity, she persists, determined to make STEM and academia better for future generations. By promoting femtorship and developing strong relationships with her students and their extended science families—which include custodial workers in her labs and the loved ones of her research assistants—Dr. Márquez-Magaña has paved the way for hundreds of scientists of color, especially Latinas, to not just enter STEM but to thrive within it and continue to develop the field.

Keywords: cultural taxation, familia, femtorship, portraiture, STEM

Introduction

Dr. Leticia “Leti” Márquez-Magaña’s academic prowess is unparalleled. As a Professor of Biology at San Francisco State University (SFSU), the Principal Investigator of the SF Building Infrastructure Leading to Diversity (BUILD)—a grant funded by the National Institutes of Health (NIH)—and the Director for the Health Equity Research (HER) Lab, Leti’s accomplishments include recognition by prestigious institutions like the National Science Foundation and her alma maters, Stanford University and the University of California at Berkeley (Cal), among many others. A Cell and Molecular Biologist with countless publications, her commitment to academia is remarkable. And yet, even with these accolades, academia and STEM do not define her, nor does her impressive curriculum vitae. What defines her? Family. Community. Culture. Femtorship¹ (Gomez et al., 2024). Pedagogy. Resilience. All aspects are at her core but are glaringly absent in the professional realms she navigates. By telling her [counter]story, she seeks to change that.

As a Chicana scientist, she redefines the terms “scientist” and “STEM.” STEM notoriously lacks diversity and feigns objectivity and apoliticism. (Bisson et al., 2022; King et al., 2023). Low enrollment and graduation rates of Black, Indigenous, People of Color (BIPOC) students reinforce the absence of cultural, socioeconomic, and historical analysis in STEM curricula (Bisson et al., 2022; Flowers, 2021). For Leti, centering her culture within leadership—often to her peers’ dismay—emphasizes strong relationships and promotes the well-being and potential of her students. Evidently, Leti’s accomplishments and those of her femtees, whom she lovingly refers to as her “science daughters,” demonstrate the power in her approach.

That said, how are culture and relationship-building at odds with academia? How is STEM a hostile environment for minoritized peoples, particularly Latinas and other women of color? How do portraiture (Lawrence-Lightfoot & Davis, 2009) and counterstorytelling (Yosso, 2006) illuminate these narratives, and what impact do such approaches have? By telling Leti’s story, we hope to examine these questions through the eyes of three rising academics of color who follow in Leti’s footsteps. In this paper, we first examine potential approaches to identifying and addressing diversity issues in STEM and academia. We then examine further how

¹ We use the terms “femtor” and “femtorship” to describe a reciprocal, non-hierarchical, and caring-centered alternative to mentorship.

these issues manifest for Latine² scientists and compound for women of color. Afterward, we blend qualitative methodologies not only to share a powerful narrative but also to use it as a mandate for redefining scientists and STEM writ large. Through such a redefinition, we imagine a STEM that embraces diversity, emphasizes culture, prioritizes mentorship, and ultimately centers them as vehicles for strengthening the field's capacity to solve contemporary issues, such as climate change as a racial justice issue and health disparities that primarily affect BIPOC communities.

This story is told collectively by three scholars whose relationships to Leti span both long-standing collaboration and more recent academic encounters. Rama, who initiated this investigation, worked alongside Leti for many years through shared projects, networks, and institutional spaces. She witnessed and benefitted from Leti's impact on institutional change, particularly her imperative work in intervening and advancing equity-oriented practices, reshaping mentoring structures, and expanding access for minoritized scholars in STEM. Janin, a researcher and lecturer in Environmental Studies, and Michael, a former high school science teacher and current Ethnic Studies professor, came to know her more recently after learning of Leti's influence in the Bay Area, where each spent substantial time conducting research for their respective projects. These differing relational proximities allow us to reflect on the layered ways of knowing Leti's intellectual labor, activism, relational praxis, and commitments. By situating ourselves explicitly within the narrative, we reject the fiction of researcher neutrality and instead embrace an active and relational stance that aligns with portraiture and counterstorytelling, making visible how lived experience, collaboration, and care operate as legitimate and necessary forms of knowledge production. As minoritized scholars ourselves, Leti's story about structural conditions and lived experiences within academic spaces resonated with ours, shaping our commitment to telling her story.

² Our cited works use a variety of terms to refer to people of Latin American heritage (namely Latina, Latine, Latinx, Latino, and Hispanic). For this article, we chose "Latine" and "Latines" when referring to the community in a broad sense. We selected this term as an encompassing option for all gender identities and expressions. However, given our primary focus on women scientists of Latin American descent, we maintain the use of "Latina" and "Latinas."

Literature Review

As part of our exploration of muxerista³ pedagogy and femtorship in STEM, our literature review first examines demographics of Latines in the United States, particularly regarding their underrepresentation in these academic and professional fields. Though certainly capable of leading in STEM initiatives, as Leti demonstrates, various systemic barriers prevent the recruitment, growth, and development of Latine scientists. As such, Leti has often been the first and only Latine in her classes and labs. However, because she is determined not to be the last and to bring in more Latinas and other marginalized people into STEM, we examine factors that hinder the retention of these emerging scientists, including experiences described as cultural taxation. As a remedy to this issue, which would allow minoritized scientists to thrive rather than just stay afloat, femtorship is also explored, given its immense value for Leti’s own growth and for her implementation to support her femtees’ development. As such, this literature review concludes with an exploration of how culture can, and in Leti’s own words, “*should* be considered a strength” in STEM, as embracing one’s own culture can lead to a more welcoming environment within these fields and enrich its potential to resolve various social issues.

STEM’s storied lack of ethnic-racial and gender diversity

Comprising 18.7% of the U.S. population, Latines are the nation’s second-largest ethnic-racial group (Hernandez & McElrath, 2023). Among those 62.1 million people, 61% are under the age of 35—and 81% among U.S.-born Latines—with most making up one-fourth of the total under-18 community (Lopez et al., 2018). Often painted as a monolith, Latinidad is increasingly diverse in the U.S.; 59% of Latines are Mexican and nearly 11% are Central American, whereas 9% and 7% are of Puerto Rican and South American descent, respectively, followed by 4% for Dominicans and Cubans each (Krogstad et al., 2023).

Given their sheer size and diversity, it is essential for education researchers and practitioners to examine Latines’ unique experiences at all levels of schooling, particularly at the collegiate level, where they make up one-fifth of the student population (Hernandez & McElrath, 2023). Despite nearly doubling their representation on college campuses since 2000, Latines

³ Often spelled “mujerista,” Revilla (2004) writes this term with the just stay afloat, femtorship is also explored, given its immense value for Leti’s own growth and for “x” to recognize different gender identities and sexualities as well as Indigenous languages and practices of what is now referred to as the Americas.

still observe lower retention and graduation rates compared to their white, Asian, and Black peers; for students of Mexican heritage, those rates are lower compared to other Latines. Although the largest Latine community in the U.S., they account for fewer than 20% of all Latines with a bachelor's degree (Hernandez & McElrath, 2023). By the time Leti earned tenure in 2004, only 44% of Mexican-origin students had earned a high school diploma, with 7% receiving bachelor's degrees, 2% earning master's degrees, and fewer than 1% earning doctorates (Yosso, 2006).

Furthermore, Latines make up nearly 3% of all full-time faculty positions (Werner-Washburne et al., 2023). Latinas, specifically, are only 2.5% of full-time faculty, and, combined, Latinas of Mexican, Puerto Rican, and Central American heritage are estimated to be less than 1% of the full-time professoriate (Gaxiola Serrano, 2023; Werner-Washburne et al., 2023).

Regarding STEM, professional groups such as the American Council of Engineering Companies (ACEC) have long reported a shortage across the field. Citing that half of all engineering companies reject applicants due to a lack of sufficient engineering courses and work experience, ACEC's (2023) annual report suggests that the United States will fall short of a necessary increase of tens of thousands more engineers within the next decade. Whereas the rise in Latines pursuing higher education can help fulfill this need, the field remains overwhelmingly white and male, accounting for 64% and 65% of the workforce, respectively (National Science Foundation, 2017). Morales-Chicas et al. (2023) described that among all STEM professions, only 4.2% are occupied by Latine men. Latinas, who significantly outpace their male counterparts in college matriculation and graduation, however, only account for "just 3.5% of all STEM degree recipients," and research on their participation in STEM programs is sparse (Rodriguez & Blaney, 2021, p. 441; Contreras Aguirre et al., 2020).

Barriers to diversifying STEM emerge long before college. Valenzuela's (1999) seminal concept in education research, "subtractive schooling," theorizes that schools "encourage youth to de-identify from [their] culture and the immigrants in their midst, result[ing] in the latter becoming unavailable models" for academic success (p. 262). From criminalizing Spanish to disparaging Latine communities in curricula, subtractive schooling assimilates students into a minoritized other (Valenzuela, 2005). Largely manifested via tracking (separating students into different classes by perceived academic ability), subtractive schooling causes immense distrust between students and teachers, disengaging Latine youth from the values of education that their

families traditionally hold in high esteem (Valenzuela, 2005). Adding each variable together, this process results in lower reported fluency in both English and Spanish as well as increased academic difficulties in all subject areas, suggesting that subtractive schooling exists to build and maintain a seemingly low-skilled labor force (Menken & Kleyn, 2010).

Regarding STEM, doubting the academic prowess of Latines has systematic repercussions (Werner-Washburne et al., 2023). A lack of adequate course offerings results not only in less preparation for advanced STEM coursework but also in increased stress and anxiety about starting behind their peers (Fematt et al., 2024). Fueled by imposter syndrome, itself heightened in “weeder” or “gatekeeping courses,” Black and Latine students—even at Hispanic-serving institutions (HSIs)—are often prevented from “advancing in STEM majors,” (p. 982). More prone to tracking within their K-12 education, Black and Latine students are weeded out from these courses at higher rates (Valenzuela, 1999; Fematt et al., 2024).

STEM's lack of diversity and inclusivity in higher education and beyond is because the field “was born from white male supremacy” (McGee, 2016, p. 1630). From its inception, STEM justified racialized and gendered discrimination, feigning objectivity to cement social strata (Oksana et al., 2016). Although higher education is seen as a space for interrogating and combating these strata, the field enables harmful beliefs to persist (McGee, 2016). Latinas in STEM, for example, “encounter sexism, racism, and generally hostile climates in college,” placing them in “the double bind” (Rodriguez & Blaney, 2021, p. 443). Though they often seek community with white women and men of color because of shared affinity, these Latina scientists often feel further marginalized from those initially perceived as allies (Garcia et al., 2020; Banda & Flowers, 2018; Perez et al., 2024).

Cultural taxation: the cost of femtoring for Latina faculty members

In addition to a lack of diversity within the student body, STEM fields are notorious for a lack of women and people of color in academic ranks (Gaxiola Serrano, 2023; Fematt, 2024). Among the Latine faculty members who are present, they report racial microaggressions, inducing anxiety, stress, and pushout (McGee, 2016). Additionally, Latina faculty members feel a mix of desire and pressure to serve in unseen, unpaid femtor roles to ensure students receive support (Gomez et al., 2024; Fematt, 2024). Often labors of love, this unacknowledged work correlates with “depression, anxiety, lower self-rated health, and [poor] physical health” for these educators (Muñoz & Villanueva, 2022, p. 7). However, femtorship acknowledges that

sexism and racism were barriers for these faculty, so the desire to shed that for peers and future generations motivates such relationships (Gomez et al., 2024; Perez et al., 2024). For women faculty of color, being “the one” also means to “accept your own discomfort and quietly conform to whiteness” to absolve the institution of any perceived racism because of your presence (García Peña, 2022, p. 18). Essentially, being the one involves physical, mental, and emotional taxation, which necessitates shedding one’s cultural values to fit within the white, patriarchal, dominant norm (García Peña, 2022; McGee, 2016). This cost is ‘cultural taxation,’ which describes how faculty of color are drained by racism, sexism, and care, resulting in them postponing their research and committee expectations, inhibiting their likelihood for advancement (Reddick et al., 2020).

Furthermore, women faculty of color often consider their femtees *familia* (Rodriguez et al., 2019). Moraga and Anzaldúa (2015) described this as “entrusting” the next generation “with the legacy of [their] thoughts and activism into a flourishing planet and a just world” (p. xxiv). Their praxis is in service of “the next generation and the next one” (p. xxiv). For Latinas, Anzaldúa’s notion of “*mestiza* consciousness,” or a Chicana epistemology built on gendered intersections of culture, is grounded within their femtorship as “there are barriers and challenges that are particular” to them; as such, “the mentoring offered to these students [must consider] their particular social, cultural, and gendered contexts” (Villaseñor et al., 2014, p. 50). This dynamic recognizes how these same women of color faculty members are tasked with “the transfer of the cultural and spiritual values of one group to another,” even if they are seemingly incompatible (Anzaldúa, 2012, p. 100). As a result, they encounter a “*choque*,” or a shock that comes from negotiating liminal spaces for those who, like them, sit on the margins of identities and realities (Anzaldúa, 2012, p. 100). Still, they undertake these tasks because, as Leti says, they know how important it is to transform the process for femtees and subsequent generations.

This relationship is consistent with “*mu[x]erista* mentoring,” a “collectivist, assets-based model that values the lived experiences” and epistemologies of Latinas, one that “focus[es] on building communities and reciprocal” mentorship (Villaseñor et al., 2014, p. 50). One means of facilitating this femtorship is to create safe spaces that foster a “tenderness and caring culture” and a “commitment to social change,” and invite students from a hostile academic environment into one of love and shared learning (Revilla, 2004, pp. 203–206).

Regarding cultural values, Latine students encounter dissonance between their upbringing and STEM’s structures. Many come from families and communities that value collaboration and unity, but STEM “promotes competitiveness and includes negative interactions with peers and faculty,” contributing to “the lack of sense of belonging” (Fematt, 2024, p. 982). To illustrate objectivity, STEM curricula notoriously omit discussions of culturally sustaining pedagogy and social justice (Bisson et al., 2022; King et al., 2023), leaving Latine students disconnected from their transformative power. These compounding issues reify one of the largest issues facing Latines in STEM: stereotype threat. Defined as “when people feel at risk of confirming stereotypes about their social/racial/ethnic group,” stereotype threat requires students to assert their ability to succeed in these challenging fields while also positively representing their communities and aptly managing their emotions and obligations (Fematt, 2024, p. 982; McGee, 2016).

Culture as a strength: resilience through familial relationships

Although this portrait of Latines in STEM may appear grim, Latinidad offers strengths that foster resilience and hope for future students and faculty. Latines are known for being family-oriented; as such, building “family connectedness” solidifies feelings of belonging and counteracts the aforementioned negative aspects of the experience (Muñoz & Villanueva, 2022, p. 9). As García Peña (2022) described, “community is the most effective form of rebellion” (p. 30). By reshaping STEM and academia to reflect our experiences as Latines, students and faculty of color will benefit from a commitment to academic and personal success.

For Latinas specifically, *familismo*, a “prevalent cultural value [...] characterized by a strong sense of loyalty, interdependence, and attachment to one’s extended and nuclear family,” can serve as a force for building resilience in STEM (Cavazos et al., 2025, p. 4). Though complicated by a need to also fulfill the “good daughter persona,” or the idea that they must prioritize their immediate family’s well-being—something Leti certainly encountered—it also can be healing to have a familial figure in STEM who is aware of such pressures at home and at school as they can support with processing and managing them (Cavazos et al., 2025; Rodriguez et al., 2019). Muxerista mentoring embodies aspects of familismo by making Latina scientists feel like they are part of a larger collective within the academy (Ek et al., 2010); these are ties that promote a sense of belonging, help them feel cared for, and affirm their role in a shared goal of advancing within the field (Lopez et al., 2025; Garcia et al., 2020).

Bringing cultural heritage into STEM would change the environment from one that is about schooling to one that is about *educación* (Valenzuela, 1999). Livas Stein et al. (2013) demonstrated how Mexican American family and community values “promote resilience and positive academic outcomes” (p. 234). In various K-12 settings, they observed that “Mexican-origin youth who feel connected to their ethnic group experience fewer negative psychological outcomes,” exemplifying how positive ethnic-racial identities serve as protective factors (p. 236). At the collegiate level, the Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) has already begun this shift toward *educación* through femtorships, conferences, professional development opportunities, and other culture-based programming that “empowers students to pursue their passions and see themselves in STEM” (Fematt, 2024, p. 996). Though much work is needed, the few STEM Latine faculty have and continue to fight hard, a legacy that paves the way “for the diversification and enrichment of the STEM fields as a whole” (Fematt, 2024, p. 997).

Methodology

As a self-proclaimed storyteller, Leti shares parables that blend her experiences with deep concepts. An homage to her *muxerista* pedagogy and a means of telling her story, we draw upon two qualitative methods that emphasize narrative storytelling: portraiture and counterstories. The former serves as our methodological framework, while the latter guides our data collection. Through these storytelling methods, we implement what Davidson (2019) described as the Indigenous research framework of interrelatedness, through which researchers are active listeners. As they listen to these stories, they become “increasingly aware of how [their] own life and experiences shaped” how they come to understand the story told to them (p. 35). Researchers are active participants in processing the story, showing respect for the elder by listening to every word and then formulating a research question with—not on behalf of—her. This approach is consistent with the distinction Lawrence-Lightfoot and Davis (1997) make “between listening *to* a story and listening *for* a story” (p. 12). In the former, scholars are “more passive” and “receptive,” doing “little to give it shape and form,” while “the latter is much more active” and engaged with the storyteller (p. 12).

Portraiture is a co-constructed methodology. For too long, research has been extractive, with investigators bringing outside, often deficit-based lenses. More specifically, Lawrence-Lightfoot developed portraiture from ethnography after identifying qualms with that

more conventional methodology. Ethnography has a long legacy of juxtaposing a seemingly “civilized” West with “primitive” communities to justify their colonization (Alonso Bejarano et al., 2019, p. 17). Portraiture, on the other hand, has a history of embracing Indigenous and marginalized epistemologies because of its co-constructive approach to questions and methodology, as well as its centering of participants’ lived experiences (McCarthy, 2017). Lawrence-Lightfoot’s (1997) method ensures that participants have an active role not only in sharing their narratives but also in conceptualizing the research questions that arise, the specific methodological steps taken, and the purpose the research ultimately serves. Flores (2017) builds on portraiture by outlining muxerista portraiture as a method that centers Chicana feminist epistemology and cultural intuition. This intuition encompasses strong relationships that also necessitate confronting colonial lenses that have historically shaped academic research (Flores, 2017).

Using a similar framework to combat colonial perspectives, Yosso’s (2006) counterstory methodology—also informed through Chicana epistemology—flips narratives by centering community cultural wealth to tell a story in opposition to the “majoritarian story,” which essentially refers to mainstream versions that often use deficit-based lenses to characterize minoritized peoples (p. 2). Like muxerista portraiture, which interrupts overabundant deficit framing within education research, counterstorytelling pushes back against harmful narratives. In education research, conventional approaches dwell on lower academic metrics among Latines, for instance. Counterstories identify the issue as well while also elucidating the societal and institutional factors that Latines disproportionately confront. Counterstories also simultaneously reflect on the resilience and resistance of these communities in opposition to those structures, which Lawrence-Lightfoot and Davis (2009) call “goodness.” Counterstories resist the majoritarian story and serve a liberatory purpose, meaning they have a social justice purpose; in Leti’s case, this counterstory actively combats pathologizing Latines and women of color in STEM to demand better treatment, trust, and more opportunities for scientists who represent these underrepresented demographics.

Given muxerista portraiture’s commitment to building and sustaining relationships (Flores, 2016; Gaxiola Serrano, 2023), our research project was a semester-long series of personal conversations, interviews, classroom and workshop observations, and even cooking lessons. After months of coordinating as a research team—including with Leti—we decided to

observe her pedagogical methods and femtorship in action. To accomplish this, we attended a week-long class that trained students to engage in community-based research. During her sessions, we took field notes about the activities, student engagement, and her interactions with the students, among other pertinent observations. Moreover, we participated in a stereotype threat workshop she delivered to minoritized STEM students at SFSU and Cal. To supplement these observations, we also read various pieces Leti had published on STEM and its inextricable links to gender, sexuality, and race.

Most notably, we interviewed Leti as she led us through a cooking lesson. Over four hours, we recorded her experiences as “the one” Latina in STEM. Questions explored her upbringing and familial background, highlights from her work as a STEM educator, and hopes for the future of STEM, especially for Latinas and other students and faculty members of color. We also discussed her motivations for having this story told to a wider audience. These questions were co-created with Leti in preparation for our cooking lesson; after multiple conversations among the four of us, the authors reflected on Leti’s impact on Latinas and other marginalized communities in STEM at SFSU and beyond, and we thought these inquiries would best illustrate her legacy.

Lastly, portraiture and counterstories challenge conventional research in education. Rather than follow a strict format that details results first and then transitions into a discussion, portraiture and counterstories blend these components. As participants and researchers coalesce, data reporting and analysis occur in unison, challenging even readers accustomed to conventional approaches. With portraiture as our methodology and counterstory as our method, we invite the readers to reflect on Leti’s experience with us in the next section, which blends data reporting and analysis, and draw on their own experiences—perhaps as Latinas in STEM too—to inform their analysis and subsequent plan of action.

Herstory

According to Leti, science is storytelling. Having conducted hundreds of experiments, she’s encountered many null hypotheses. The null hypothesis implies a lack of relationship between variables, but it’s her job to find and test alternatives. Leti’s experiments tell a story about the field. STEM, in her view, inhibits relationship-building, especially for communities of color, suggesting that the null is the majoritarian story. Leti’s peers regularly state that science must be “flavorless” and “objective” with no room for discussions of race and gender.

Moreover, it is a realm that requires her to shed her culture. But as a woman of color whose heritage values relationship-building and views her culture as a strength, that null hypothesis is unacceptable. There must be alternative hypotheses; there must be counterstories to dispel the majoritarian story.

“It’s for my Science Daughters”: On being the first, but not the last.

As we interviewed her over the *comal*, our own safe space, Leti guided us through her mother’s salsa recipe. However, she is a scientist, so she challenged us to experiment with the salt, lime juice, onion, *chile*, *cilantro*, and tomato until we made our ideal concoction. As we tested different ratios, she shared about her upbringing. Sometimes our iterations were bland, just like how she describes conventional STEM. But after a while, she encouraged us to add the right amount of spice to suit our palates. When we dipped our chips into our final creations, it hit us: Leti was infusing STEM with cultural traditions via cooking and storytelling.

While enjoying our green enchiladas, rice, and beans—all complemented by our own takes on her mother’s salsa—Leti shared how her mother moved to the United States when she was seven months pregnant. Her mother, who did not finish second grade in Mexico, faced linguistic and cultural barriers upon her arrival, but she was determined to provide her children with a bright future. Her father was also a migrant, having relocated to California as a *bracero*, or a seasonal farmworker hired to fulfill a labor shortage during and after World War II. The first of three children, Leti described her work ethic as a legacy of her parents’ sacrifices. Given their work schedules, Leti’s parents entrusted her with ensuring she and her siblings would make it to and from school safely and that they would complete their homework.

She entered elementary school as a monolingual Spanish speaker but quickly adapted to learn English as well. Equipped with two languages—meaning she had double the vocabulary and could articulate concepts across cultures and communities—Leti learned that her school viewed her cultural assets differently. Discouraged from speaking Spanish at home, her teachers insisted that Leti be enrolled in special education classes, and she and her siblings were barred from more advanced courses. However, they strengthened their English and Spanish, resisting assimilation.

Her family’s approach paid off. The first in her extended family to attend high school, Leti matriculated at Stanford, where she earned her B.S. and M.S. in Biological Sciences. She then pursued her Ph.D. in Biochemistry at Cal, the first-ever Latina in her program, before

becoming the first Latina professor in the College of Science and Engineering (CoSE) at SFSU. From the first in her family to be born in the United States to the first Latina to receive tenure at SFSU's CoSE, Leti is no stranger to “firsts,” but she is adamant about not being the last.

Though Latines are vastly underrepresented among STEM faculty, those present understand the “critical role” Latine faculty play “through femtorship and advocacy” (Fematt et al., 2024, p. 980). Honored with the National Mentor Award by the American Association for the Advancement of Science in 2001, Leti recognized that due to a shortage of care from other professors, Latines feel neglected, leading to pushout. As such, office hours were not simply a space for quick questions about scientific concepts, but rather an opportunity to build meaningful relationships. She genuinely wanted to know her students, and she wanted them to know that she cared about their well-being and success, key factors that Fematt et al. (2024) described as motivators for Latines pursuing graduate school in STEM. Moreover, Leti was a regular figure at the Latine staff and faculty gatherings. Such a presence has an impact, even at HSIs, a designation SFSU has had since 2016. Still, Fematt et al. (2024) assert the distinction isn't enough, and that pushout from STEM fields in HSIs is a major problem. For Latines without Latine professors, they often feel disconnected and without femtors (Perez et al., 2024). That's why Leti knew that being the first is not enough; when students do not have faculty that look like them and do not respond in culturally responsive, authentically caring ways, pushout will continue. Leti described this underrepresentation as a daily microaggression, which is a taxing experience for students and faculty of color alike and is often unacknowledged by administrators.

Under her leadership, SFSU's CoSE has diversified its student body and faculty, especially regarding women of color. Serving as their femtor, Leti called these students her “science daughters,” staying true to Moraga & Anzaldúa's (2015) commitment to “familia” (p. xxiv). As they gravitated toward her, they all faced being the “unicorns in STEM” as “double minorities”; subject to the double bind, they must assert themselves against their counterparts who are men and/or white, an undue labor that causes isolation and internalized skepticism (Rodriguez & Blaney, 2021, p. 447). Ultimately, Leti's goal for them is to eventually manage their laboratories and other academic commitments without having their sense of belonging questioned in academia.

Leti knew this double bind all too well. Upon enrolling at Stanford, she took remedial coursework during the summer to catch up to her peers because her white administrators claimed her urban public district "could not possibly have been rigorous enough," she told us sarcastically. She aced those courses and eventually outperformed many of her peers who were not required to take them. As she continued with her research, Leti brought in her culture and spoke Spanish with the custodial workers, who were proud to see a Latina wearing a white coat; that pride was reciprocated, as she was proud to have Latine workers who truly cared for her well-being and sought to take steps to make her experience more welcoming. They may not have been faculty members, but they were cultural femtors who recognized her challenges.

Unfortunately, not all peers shared her belief. Subtractive schooling is so insidious that many people of color assimilate to get ahead. She recalled that when she joined an affinity space for Latines in STEM, she was told she needed to "take up golf," an activity associated with white-collared, white male counterparts who largely make up the field in its current iteration. This story obviates the culturally and racially charged ways of belonging and the subsequent demand to play politics of respectability. Uninterested in this approach, she remained connected with the peers and staff members who were, as she says, "invisibilized," just like her. Maintaining relationships with these invisibilized individuals may have restricted access to some research opportunities, but it allowed her to maintain her cultural spirit.

She encountered similar issues as a faculty member as well. When discussing how students can be better scientists, the only other woman on the panel urged bilingual students to "lose their accents." Evidently, the seemingly objective field of STEM reinforced a hidden curriculum, or an implicit set of messages and rules that required people to assimilate to a dominant norm (Jackson, 1968). There was apparently a right way to be a scientist, but rather than conform, Leti pushed back. "If you're going to say that I am not a scientist, even though I clearly am," she shared, mentioning her numerous accolades and publications, "then maybe it's how we define what a scientist is that is a problem." Channeling *muxerista* pedagogies, including centering care by establishing familial relationships while also combating harmful narratives in a seemingly objective field, that is how she continues to operate. She is close with her science daughters and their families. She celebrates birthdays and has intimate and personal conversations with them that do not always revolve around work or school. She has meals with them, just like the one we were having that day. Despite the overarching null hypothesis in

STEM, it's the relationships that matter to her, and it's those relationships that lead her science daughters toward fruitful personal and professional futures. She has mentored countless Latina would-be doctors, pharmacists, faculty members, and researchers. Leti knows that conformity would keep them at a disadvantage and would maintain the disparity, so she ensures they know they are cared for and feel a sense of belonging, which is key to their success.

“I’m very data-driven.”: Diversity as an evidence-based framework for STEM

Spanish is how Leti connects with her parents, and throughout our conversation, we switch between Spanish and English. This duality is how many migrants and their descendants maneuver through the world. So, when Leti was a young child who heard her teachers discourage Spanish, she thought to herself, “prove it.” When Californians passed Proposition 227 in 1998, banning bilingual education in public schools, Leti knew the claims were not founded in data. On the contrary, research demonstrates that multilingual youth typically outperform their monolingual peers (Chaudhary, 2018). But, as Leti moved further into her career, she observed how this data-driven field did not always use data to justify its practices. As a true scientist, she has been determined to tell the true story, and she uses plenty of data as evidence.

After working to diversify the students admitted to Cal's PhD program in her third year of graduate study, her leadership was called into question. Prior to Proposition 209, the 1996 ban on race-conscious admissions in California, Leti was one of two representatives—and the only student—on the admissions diversity committee. Administrators questioned the qualifications of the people she recruited. However, Leti was prepared. She challenged the notion that there was a decrease in rigor, showing that grades, test scores, publications, and other metrics were the same before and after her initiative. It wasn't the qualifications that changed but rather the approach to recruitment, one that actively welcomed people of diverse backgrounds. Regarding microaggressive statements like “work ethic,” she thought of her science family members—the custodians, the food service workers—who cared for her throughout the years. She grew up around people who held multiple jobs to sustain their families. They had strong work ethics and passed them on to their descendants, the people who looked like the incoming classes of students and instructors.

As she assumes the title of Professor Emerita, Leti's reflections show how stereotypes, also not founded in data, have been all too pervasive. According to Hernandez et al. (2017),

Latine scientists are disproportionately impacted by stereotype threat; their credentials are questioned, which "strongly impacts the[ir] academic performance" and subjects them to higher levels of physiological stress (p. 437). Luckily for Leti and her students, healing is her strength. In a field that purports to be objective, Leti has been there not only to listen to students as they discuss their hardships, but also to practice "stereotype inoculation," which describes how femtors positively counteract these harms (p. 439). Stereotype inoculation occurs when role models create safe spaces that affirm students' heritage, practice authentic care, and commit to their emotional, academic, and personal well-being.

During a workshop, we witnessed Leti's inoculation in action. She started by naming stereotype threat as a public health issue, describing that within STEM, students and faculty of color are subject to added scrutiny, which affects their health and academic progress. In this training, she went through case studies to help her mostly Latine student participants identify instances of stereotype threat. After equipping them to identify problems, Leti introduced methods to help them thrive. Microaffirmations, which resonated with us as researchers, were especially resonant with students who were familiar with microaggressions but not with their foils. Highlighting self-affirmations, bystander affirmations, and institutional affirmations, the students engaged in an activity that reaffirmed within themselves that they are scientists worthy in these exclusive spaces. She further equipped them with hope.

Naming this work as a labor of love, she recognizes that faculty of color endure cultural taxation, an added expectation of serving one's own community that is unacknowledged. These individuals, having been burdened as "the one," know how important it is to femtor students. But it's still taxing. This labor can be the difference between writing additional publications or serving on compensated committees. However, Leti cares so much for her science daughters that she will continue this work through retirement. Her hope is that these values will become the norm within STEM and academia, meaning that cultural taxation will cease.

As we concluded our interview, we asked: what is important about telling her story? Taken aback, Leti's physical response embodied authentic care. Her voice, her eyes, her affect—it was clear that she had years of data within her story to counteract the majoritarian story around STEM. It isn't objective. It isn't welcoming. It isn't living up to its potential. But, by sharing this alternative narrative, by amplifying the voices of so many of her students, and by providing concrete evidence about lived realities in science and higher education, it becomes

even more possible to foster change. Just as she equipped the students in her workshop to identify and disrupt stereotype threat, she teaches us to name issues within our respective fields and transform them for the better. But all that starts with counterstorytelling. This herstory is the alternative hypothesis.

As three scholars of color, our answer to this same question comes from the femtee perspective. For Rama, who has worked with Leti for years, Leti's impact on constructing a more welcoming campus is indelible. Her influence has reverberated beyond the CoSE and into the College of Ethnic Studies, where Rama teaches, which recently introduced a major that bridges social justice for BIPOC communities with health equity and justice. For Janin and Michael, this was an opportunity to honor a Latina academic trailblazer who paved the way for Latine scholars like them. Together, the three of us felt it was cathartic and humbling to see the sacrifices that Leti and other elders have made to allow us to enter and remain within the academy; after building this deeper relationship with her and telling her story, we feel compelled to model her form of muxerista pedagogy through femtorship for the next generation of minoritized scholars. After all, while we are not the first, we certainly do not wish to be the last.

Conclusion

One of Leti's biggest lessons was that STEM must redefine what a scientist is. Her *muxerista* pedagogy and femtorship, increased resources for the CoSE by way of millions in grants and donations, and theoretical and scientific breakthroughs all demonstrate that not only is she a scientist, but one of indisputably high caliber. And she accomplished all that as "the one." STEM grew because of her resilience against cultural taxation, the double bind, subtractive schooling, and stereotype threat. If these barriers were not there, what other accomplishments would Leti have been able to focus on? And, as such, what potential would there be for STEM if scholars like Leti could femtor without taxation?

STEM has a colonial legacy that has justified gender- and race-based discrimination, and those mindsets cemented a field that maintains white patriarchal supremacy. But, as Leti's commitment shows, STEM can—or rather, must—center *educación* and authentic care. The field can emphasize relationships and community building, as she has demonstrated through femtorship and centering culture and language within her own labs. Ensuring students have

femtors and feel cared for is her priority, and recruiting faculty who recognize the double bind and can use that experience to inform their praxis has always been her prerogative.

Leti's embodiment of muxerista pedagogy initially feels out of place within STEM, given how she and the aforementioned scholars described their experiences. However, because her commitment to care empowers Latines, and Latinas primarily, to thrive within this field, muxerista pedagogy enhances STEM's potential. Through Leti's incorporation of muxerista pedagogy, she trains other academics—including the authors—to expand their fields and sustain a diversified, culturally enriched community by practicing femtorship and building strong familial relationships. It is her muxerista pedagogical approach, after all, that expanded STEM at SFSU to explore themes of equity and engage in experiments to promote social justice.

Moreover, for Leti, who has since faced numerous attacks by right-wing groups due to her advocacy efforts to diversify STEM and promote scientific experiments intended to foster socially just outcomes, as evidenced by her leadership in HER and SF BUILD, another major implication is that higher education practitioners and industry leaders within STEM must build and reaffirm their commitments to center and authentically practice equity. As the federal government scrutinizes, defunds, and even criminalizes initiatives like the HER lab and SF BUILD, these same decisionmakers must heed the ACEC's warning. STEM professionals are increasingly necessary in our world, given threats of climate change, the material and energy demands of a rising population, the need for low-impact transportation systems, and technological infrastructure under current conditions of social inequality. Community-based and culturally directed research offers a path to dismantle hegemonic STEM practices that produce solutions that are technocratically naive, at best, or racist, at worst.

However, by reducing recruitment strategies to invite more BIPOC scientists into the field, the trend moves in the opposite direction. Coupled with xenophobic policies that target migrants and their descendants, these attacks on minoritized communities in higher education mean the country will significantly miss its STEM professional mandate. This is why counterstorytelling is essential; Leti's culturally sustaining leadership and data-driven recruitment strategies show us that Latines in STEM—and people of color in various esteemed fields, in general—are well-qualified for their positions, and minor adjustments to bring them into these spaces strengthens the fields rather than reduce their prestige.

The status quo is unacceptable. Its subtractive structure is unsustainable, and given the large global issues that rely on technological innovation, a shift is needed. The story of STEM as objective has caused harm, and the story that those in STEM have told about Latines in the field is defamatory. Leti's counterstory bridges the promise of STEM and the potential of Latinas to enrich it further.

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