

Chapter

Latinx Women in STEM and Medicine: Resilience, Identity, Strength, and Equity

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Abstract

This work brings together the lived experiences of 13 Latinx women in STEM and medicine, who pursued opportunities in the midst of systemic, cultural, and personal barriers. Their autoethnographic stories illustrate how grit, resilience, and community support intersect to shape pathways into science and health care. Collectively, these autoethnographies do more than recount challenges – they illuminate strategies for equity that can inform institutional practices, mentorship design, and national policy.

Keywords: Latinx, women, STEM, medicine, underrepresentation

1. Introduction

This chapter situates individual journeys within broader structural inequities in US education and medicine, where Latinx students represent nearly 15% of the college-age population but remain significantly underrepresented in STEM and medicine (STEMM) fields and in the healthcare workforce [1–3]. Each story reflects recurring themes – first-generation struggles, cultural expectations, financial hardship, discrimination, impostor syndrome, and mental health stigma – while also underscoring points of transformation, particularly mentorship, pipeline programs, and family support.

Notably, this chapter extends beyond description to offer research-based, actionable strategies for academic institutions dedicated to promoting diversity, equity, and inclusion in STEMM. Drawing on participants' experiences across

various educational stages – ranging from high school students in pipeline programs to practicing physicians and academic administrators – it identifies barriers, detours, and supports that shape the persistence and success of Latinx women. The inclusion of reflective essays by mentors and administrators adds an intergenerational and systemic perspective, highlighting how institutional design can either hinder or empower students.

All contributors are connected through their engagement with pipeline and mentoring initiatives at Rosalind Franklin University of Medicine and Science (RFUMS) in North Chicago, Illinois (e.g., INSPIRE, Science Saturdays, Mini Medical School, Hero Parents Academy [4–6]), and/or are students, staff, or faculty of RFUMS. These programs serve as microcosms for understanding how culturally responsive interventions can expand opportunity, foster belonging, and catalyze professional achievement for underrepresented groups in science and medicine.

This chapter is organized into three parts:

- **Part I: personal narratives** – First-person accounts of barriers and resilience across education and training.
- **Part II: reflections on barriers and opportunities** – Cross-cutting insights linking individual experiences to systemic inequities.
- **Part III: academic strategies and systemic solutions** – Research-based recommendations for mentorship, institutional reform, and policy-level changes.

By amplifying the voices of Latinx women in STEMM, this chapter both documents the persistence of inequities and advances a vision of what is possible when diverse identities and lived experiences are affirmed.

2. Methods

Participants were recruited through their engagement in pipeline and mentoring programs at Rosalind Franklin University of Medicine and Science (e.g., INSPIRE, Mini Medical School, Science Saturdays) [4–6], as well as through affiliated academic and professional networks. Eligibility was based on self-identification as Latina/Latinx, involvement in STEMM educational or professional pathways, and willingness to contribute a personal narrative or reflection.

Cultural identity,¹ praxis,² intersectionality, and womanist perspectives³ are consistently explored throughout this chapter, representing an opening discourse on women's narratives in STEMM and Medicine. Further representation continues with an agenda to share women's experiences as informed by the self through autoethnographic methods.

¹ View of insider identity or the feeling of belonging to a group.

² The intersection of action, learning, and practice toward community perspectives for engaged activism and liberation.

³ Women's voices and sharing a collective view on equality for women and ownership of their stories. We use the term "womanist" to better reflect the experiences of women of color, as opposed to "feminist," which is rooted in white women's culture.

“Autoethnography is an approach to research and writing that seeks to describe and systematically analyze (graphy) personal experience (auto) to understand cultural experience (ethnos).” Ellis [7] describes “this approach challenges canonical ways of doing research and representing others.” As such, the autoethnographer provides contextual knowledge that is more than a mere data point. Ellis et al. [8], informed by Ellis and Ellingson [9], Couser [10], Goodall [11], and Maso [12], vividly characterize autoethnography as follows: “evocative, engage readers, and use conventions of storytelling such as character, scene, and plot development – by finding and filing a ‘gap’ in existing, related storylines.” This centers on the individual perspectives of those engaged in the research process, focusing on their stories and experiences. Autoethnographic narratives were contributed in written form by participants. These narratives were voluntarily shared with explicit permission for inclusion in this chapter. The narratives were edited for clarity and brevity and then reviewed and approved by the participants. Narratives were compiled alongside reflective essays from students, faculty mentors, and administrators.

A thematic analysis approach [13] was used to identify common themes in the narratives. Thematic categories were cross-checked against existing literature on Latinx and underrepresented minority students in STEMM to situate findings within published observations.

Reflexivity was a guiding principle throughout the analysis. Several coauthors are Latina/Latinx women in STEMM themselves, while others serve as long-term mentors in pipeline programs. This positionality both enriched interpretation and required ongoing awareness of potential bias. To strengthen trustworthiness, we incorporated participant feedback, triangulated narratives with institutional data (e.g., program outcomes), and acknowledged limitations related to sample size and geographic concentration.

Finally, the work is action-oriented, translating community-derived insights into concrete institutional and policy recommendations aimed at structural change in STEMM access, thus aligning with the goal of CBPR to couple knowledge with action to reduce inequities. CBPR is defined as a collaborative research approach. CBPR equitably involves all partners in the research process and recognizes the unique strengths that each brings. CBPR begins with a research topic of importance to the community to combine knowledge and action for social change to improve community health and eliminate health disparities [14]. CBPR proposes a set of principles based on assumptions that: a) genuine partnership means colearning (academic and community partners learning from each other), b) research efforts include capacity building (in addition to conducting the research, there is a commitment to training community members in research), and c) findings and knowledge [15].

CBPR is a critical action research practice that builds upon a given phenomenon, examines social issues with an interest in cultural dynamics, and supports knowledge generation to improve health and well-being [16–18]. This approach enables the generation and creation of knowledge that is both practical and critical, thereby seeking to establish equitable processes that balance the power dynamics at play in research. With social change and participatory action as a goal in CBPR, there should be a priority placed on identifying barriers and facilitators to human agency [19] and health.

Part I: Personal narratives (lived experiences)

Ten narratives detail the educational, cultural, economic, and social barriers faced by Latinx women as they pursue careers in science and health care. These stories emphasize common themes:

- First-generation struggles, immigration, and language barriers
- Cultural expectations, gender norms, and mental health stigma
- Financial hardship, institutional exclusion, discrimination, isolation, and imposter syndrome
- Mentorship as a turning point
- Nonlinear educational paths, community service, and transformation through science

Each narrative is grounded in lived experience and collectively illustrates the brilliance, resilience, and transformative agency of Latinx women.

3. Part I: Personal narratives (lived experiences)

The 10 personal narratives in this chapter vividly illustrate the educational, cultural, economic, and social barriers that Latinx women encounter as they navigate careers in science and health care. While each account is unique, together they reveal recurring ideas and topics that highlight both systemic inequities and the transformative power of resilience.

- **First-generation struggles, immigration, and language barriers:** Many participants described navigating academic spaces without family role models who had attended college. Immigration-related challenges – such as interrupted schooling, language barriers, and the burden of translating for family members – were recurring hurdles that shaped identity and persistence.
- **Cultural expectations, gender norms, and mental health stigma:** Stories revealed the weight of cultural expectations, including pressure to prioritize caregiving over professional aspirations, and the stigma surrounding mental health struggles. These expectations often compounded feelings of isolation and self-doubt.
- **Financial hardship, institutional exclusion, and imposter syndrome:** Limited financial resources forced many women to balance employment with full-time study, delaying or derailing progress. Several narratives also revealed institutional bias, microaggressions, and experiences of being “the only Latina” in classrooms or laboratories. Such exclusion often fueled imposter syndrome, yet also strengthened determination.

- **Mentorship as a turning point:** Across narratives, mentorship emerged as a decisive factor in persistence and success. Faculty and peer mentors provided encouragement, advocacy, and access to opportunities that might otherwise have remained closed. Pipeline programs such as INSPIRE, Mini Medical School, and Science Saturdays [4–6] were repeatedly described as “life-changing” moments of affirmation.
- **Nonlinear pathways, service, and transformation through science:** Many journeys follow nonlinear paths, including military service, caregiving interruptions, or shifts between disciplines. Rather than derailing careers, these detours often reinforce a commitment to service and shape participants into empathetic, equity-driven professionals.

Taken together, these narratives not only reflect the barriers Latinx women face but also demonstrate their brilliance, resilience, and transformative agency. Each story contributes to a collective portrait of women who reimagine science and medicine as spaces of belonging, service, and community change.

3.1 Narrative 1

Central theme: Indigenous healing, immigration, military service, and medicine. From Healer’s Legacy to Emergency Physician: My Winding Path to Medicine.

I was born in Guadalajara, Mexico, into a family rooted in tradition and healing. My father is indigenous, and my grandfather – a respected healer – believed that every generation is called to heal. For me, that call came early.

One afternoon at our family ranch, my father suffered a severe injury. Bleeding and growing weak, he held my hand as we waited for a bus to town. By the time we reached the hospital, he was unconscious. A doctor saw me alone in the hallway and brought food and a blanket. Later, my father told me, “That doctor saved my life.” In that moment, I knew I would become a healer too.

After immigrating to the United States, my parents worked in agriculture to support our family. Though education was never discouraged, no one in our family had attended college. When I scored high on a placement test, a counselor suggested I skip AP classes and take family planning instead. “Girls like you don’t go to college,” he said. It was my first clear glimpse of systemic bias.

After my parents separated, I experienced homelessness and returned to Mexico, working on the ranch before teaching English in Guadalajara. My sister later brought me back to the United States with a challenge: “Get a job and tell me when you start school.” I did both: earned my GED, enrolled in community college, and worked two jobs. When I was offered a scholarship but couldn’t accept it due to my immigration status, I joined the military to continue my education.

Then 9/11 changed everything. I deployed multiple times, earned top honors, and developed the discipline that would later carry me through medical training. During my final deployment, I was selected to serve a four-star general in Baghdad but was denied the opportunity due to my citizenship status. The general intervened, and within days, I had my interview, which was fast-tracked amid a war zone. I became a US citizen in one of Saddam Hussein’s former palaces, receiving my certificate from Senator John McCain.

Back home, I returned to school with renewed purpose, sitting in the front row of every class after long work shifts. I was going to become a doctor – and I did.

Residency was grueling. During my second year, my mother visited and pleaded, “Mija, just come home. Find someone to take care of you.” Her concern came from love and a life shaped by poverty, not a lack of belief in me. I persevered, completed medical school, and became a physician specializing in emergency medicine and SWAT team medicine.

Today, I teach and mentor students who, like me, once needed someone to believe in them. I know their potential. Like seeds, they need water; they need a chance.

3.2 Narrative 2

Central theme: Importance of cultural identity and representation, perseverance through adversity, and finding mentorship and community.

Before every examination, gymnastics meet, and challenge I faced, my mother would say with conviction: “¡Sí se puede!” More than “yes, we can,” it was a declaration of strength, rooted in Latinx resilience. Her words became my fuel. My mother, an unwavering pillar in our family, was never more vulnerable than in a doctor’s office. Language barriers and the absence of culturally competent care left her uncertain and unseen. Witnessing her struggle to navigate the US healthcare system was painful – and deeply motivating. I knew I wanted to become the kind of physician who would never let a patient feel that kind of isolation.

As a Mexican American woman, I rarely saw doctors who looked like me. That lack of representation only widened communication gaps and mistrust. However, I have seen, in my own lived experience, the power to bridge those divides. My path to medicine was not linear – it was long, rigorous, and, at times, discouraging.

My journey was shaped by service. At Northwestern Medicine, I helped develop Spanish-language health apps for Latina women with breast cancer. I translated materials, recorded content, and checked in with participants on a weekly basis. I watched women, once resigned to fatalism, gain knowledge and agency. That experience affirmed the power of culturally relevant care. At the Rush Alzheimer’s Disease Center, I worked with older adults fearful that their memory loss invalidated their voices. But I saw the opposite: That dignity and trust are foundational to healthcare progress. Those patients, like my mother, deserved to feel heard.

To enhance my academic profile, I enrolled in the master’s program in Biomedical Sciences at Rosalind Franklin University. It was a turning point. The coursework was rigorous, and I faced setbacks, including failing my first examination and taking medical leave. But I found mentorship, purpose, and community. I returned stronger, becoming class president of my master’s cohort and later student body president of the entire university. Now, in my third year of medical school, I remain committed to becoming a physician who listens, respects, and uplifts patients, especially those who have been historically underserved. I aim to dismantle the barriers that separate patients from care and to help others navigate the path I once walked alone.

Only 6% of US physicians identify as Latinx. I intend to change that – not only by succeeding, but by making space for others. I move forward with the passion, purpose, and power my mother instilled in me: ¡Sí se puede!

3.3 Narrative 3

Central theme: INSPIRE program impact, undergraduate neuroscience, and research mentorship.

I am a first-generation college graduate, and I graduated from Lake Forest College with a Bachelor of Science in Neuroscience. I earned this degree thanks to the sacrifices of my parents, who left their lives in Mexico and immigrated to the United States in search of a better life. It is also thanks to my sophomore-year chemistry teacher, who encouraged me to apply to a summer internship program called INSPIRE, sponsored by Rosalind Franklin University of Medicine and Science.

There, I was introduced to the field of neuroscience – one I hadn't even known existed. Over the course of two summers, I participated in intensive lectures on medical topics, conducted hands-on biomedical research, and attended professional development workshops. Most importantly, I met mentors who believed in me. Through one-on-one and group mentorship, I developed leadership and communication skills. I learned the importance of community engagement, volunteering, and extracurricular activities – crucial elements of a successful college application and academic career.

These early experiences laid a strong foundation for my studies at Lake Forest College. Thanks to the scientific grounding I received through INSPIRE, I excelled in one of the most demanding introductory neuroscience courses during my freshman year. Over the next three years, I grew into leadership roles, became a peer mentor who helped fellow students interpret primary research articles, developed interactive lesson plans, and designed scientific posters. I later became a teaching assistant for a 300-level neuroscience course, where I guided students through brain dissections and cell culture work. I also applied the skills I had learned from the Science Saturdays program at Rosalind Franklin University, teaching essential laboratory techniques to young students. My final year of college culminated in a two-year research project that I presented at both the National and Chicago chapter meetings of the Society for Neuroscience. That work became the basis of my senior thesis, which I defended with distinction.

Balancing academics, research, mentoring, conference presentations, and a part-time job was physically and emotionally taxing. But I held tightly to something my mother often reminded me: “Lo que es bueno, no es fácil” – what is worthwhile is never easy. As I prepare to pursue a doctorate, I carry forward the lessons of grit, gratitude, and purpose.

3.4 Narrative 4

Central theme: Mental health stigma, community loss, and self-empowerment.

Mental illness already carries a stigma in society, but in my household, it was seen as a sign of weakness. I often questioned the validity of my struggles. How could I compare my stress to the sacrifices my parents had made? That kind of thinking led me to invalidate my feelings and made me believe that perhaps I wasn't strong enough, that my dream of becoming a scientist might be beyond my reach. But then, I found help.

I was fortunate to attend a university that actively promoted mental health awareness and offered resources for students in need. With time and courage, I reached out. I built a support network, found strength in my friendships, and began

to heal slowly. Recognizing that I needed help – and allowing myself to receive it – was one of the most important decisions I’ve ever made.

Today, I stand as a first-generation Latinx woman, proud to hold a Bachelor of Science degree and to be a certified Medical Laboratory Scientist. The road was not easy, but it shaped me into someone resilient, self-aware, and ready to make space for others who may feel unseen. My journey has deepened my commitment to science and to becoming the kind of professional and person who leads with empathy, cultural humility, and strength.

3.5 Narrative 5

Central theme: First-gen identity, language loss, motherhood, financial hardship, and imposter syndrome.

Growing up in New York City as the daughter of parents of Colombian, Italian, and Dominican descent – both immigrants who became naturalized US citizens – I was acutely aware of my first-generation status. My parents, neither of whom pursued higher education, instilled in me a strong work ethic and an unwavering belief in the American dream. Yet, as a first-generation college student, I often found myself navigating unfamiliar academic terrain without the benefit of familial guidance.

A pivotal shift occurred when I was 11: My father moved our family to Colombia. What seemed like a relocation soon revealed itself as a cultural and educational upheaval. I did not speak Spanish, and the transition thrust me into a system that lacked the language support services commonly available in US schools. I struggled daily to understand the lessons and communicate effectively with my peers and teachers. That period was not just academically challenging; it was isolating and traumatic, affecting my emotional well-being and cognitive development during critical adolescent years.

When I returned to the United States at 16, my English had weakened, further complicating my cultural readjustment and making academic and social engagement challenging. Like many Latinx women pursuing careers in health, I also lacked early exposure and mentorship. As a first-generation student and single mother, navigating complex financial aid systems without guidance led to debt and heightened stress. Financial burdens, coupled with cultural expectations and implicit biases, made progress even harder.

Throughout my journey, imposter syndrome often overshadowed accomplishments, fueled by limited representation and subtle biases. Yet, these struggles built resilience and empathy, qualities essential in health care. Despite these obstacles, I persisted. My journey – from an overwhelmed adolescent in Colombia to an aspiring health professional in the United States – is a testament to tenacity.

I am proud to hold a CMA, MBA, and PhD, and to serve as a Program Director in the College of Health Professions at RFUMS. My journey reflects both the barriers and the resilience that characterize the experiences of many Latinx women in health professions. By confronting systemic inequities and amplifying these narratives, we can help build a more inclusive healthcare workforce – one that truly reflects and serves the diverse communities of our nation.

3.6 Narrative 6

Central theme: INSPIRE pathway, racial bias in laboratories, chemistry career, and pivot to medicine.

To many parents, being a Latina woman in science is a source of immense *orgullo* – pride. I share that pride, but I also carry the weight that comes with being one of the few Latina chemists. Being a Latina in science has filled me with moments of pride, joy, and awe; yet, it has also meant experiencing discrimination and microaggressions.

I was in high school when I discovered the opportunity that would shape me into the scientist and future health practitioner I am becoming. I learned about the INSPIRE program, a pipeline opportunity specifically designed for Latino students at Rosalind Franklin University. I didn't immediately see its value. When I told Mr. Mohr, my high school teacher, he urged me to apply, reminding me repeatedly of my potential. When I hesitated, he said, "Please apply. Don't miss out on this opportunity. I will write you a letter of recommendation right now."

Through Rosalind Franklin University's INSPIRE program, I was introduced to scientific research, professional mentorship, and a community that affirmed my identity, as the staff all looked like me and had a similar background to mine. I learned to speak publicly, conduct experiments, and began to see myself as someone who belonged in the healthcare field. Most importantly, I gained a lifelong mentor who has helped guide me through college and beyond.

In college, however, the reality of being underrepresented became even more pronounced. I attended a small, predominantly white university, where only 5% of students were Latino. In my science classes, I was often the only brown-skinned girl with an accent. The isolation was palpable. In laboratories, I was sidelined by peers who assumed I was less capable. I vividly remember being yelled at by a white male student during a chemistry laboratory for supposedly doing an experiment wrong, only to be later validated by the professor. That moment has stayed with me.

Over time, I found my voice. I became a chemistry TA, mentored students, and grew into my role. By senior year, I was one of only four students – and the only Latina – to earn a degree in Chemistry. It was a rigorous program, and I was proud to persevere.

After college, I entered the workforce as a chemist, and I decided to return to Rosalind Franklin University to study as a physician assistant.

Today, I am on that path with confidence. I know that being a Latina in science is not just *orgullo* – it is a responsibility. Being a Latina in science means showing up not just for myself, but also for those who come after me. It is a call to hold the door open for others, to transform discomfort into progress, and to show the next generation what is possible. Because if no one else has done it before you, that doesn't mean it can't be done. You are just the first.

3.7 Narrative 7

Central theme: Family crisis and pandemic interruption; return to science.

I come from a humble background. I was born in Mexico and raised in a small village, and I'm proud of my roots. But I also knew what my life would likely have looked like had I stayed: attending school up to high school (if I were lucky), helping

around the house, working to support my family, possibly marrying young, and having children. It was a path that felt predetermined, unchanging.

Everything shifted when my family and I moved to the United States. New opportunities began to open – but so did a new world of challenges: learning a new language, adjusting to a different culture, facing financial hardship, and feeling the weight of not quite belonging. I was overwhelmed, but over time, I adapted to the situation. I attended school, learned the language, found my footing, and then entered high school. That’s when my journey truly changed.

Through Rosalind Franklin University’s INSPIRE program, I was introduced to the world of science, and I fell in love. I had always enjoyed school, but science revealed new possibilities I hadn’t known existed. For the first time, I saw a future that extended beyond mere survival – a future built on curiosity, purpose, and lasting impact. I dreamed of a career in science or medicine. But soon after I began college, life intervened. My father had an affair with a family friend, and our family fell apart. My mother was left to care for three children alone. I had to make a choice: continue my education or return home to support her. For me, there was no question – I went home.

I continued my college education from our living room, enrolling in online courses at the local community college. I worked full-time and used my earnings to buy groceries, pay bills, and cover our basic needs, including those of my younger brother and me. I was constantly saving whatever I could to continue my studies. Then, the COVID-19 pandemic hit, and everything paused again. My mother got sick. My father refused to help. I took on more responsibility – caring for my siblings, managing the household, taking them to and from school, and to doctors’ appointments. I put my dreams on hold again.

Eventually, as my siblings grew older and became more independent, I was able to move out. Today, one of them is about to graduate from college, and the other is well on their way. And now – finally – it’s my turn again. I am ready to return to school and pursue the dream I once had to set aside.

The truth is being a woman in science or medicine is never easy, especially when you come from a Latinx background. Our culture often centers men, while women are expected to mature quickly, care for the home and younger siblings, cook, clean, translate documents at a young age, and place others’ needs ahead of their own. These expectations rarely leave space for our ambitions. Yet, through it all, I have never let go of mine.

My journey has not been easy, but every pause, every challenge, and every sacrifice have made me stronger, more determined, and better prepared. I am proud to hold a degree in Psychology, and I am ready to continue my education. Yes, we must push back against limiting expectations. Yes, we must carve out spaces where none were offered. But it is worth it – because we belong here, too.

3.8 Narrative 8

Central theme: Academic setbacks, financial hardships, EMT training, and a medical school pathway.

“You will not get into medical school with these grades.” Those words echoed in my ears as I walked out of my advisor’s office. I was a junior in college, and for the first time, I had to confront a painful truth: balancing a full-time job with full-time

coursework was taking a toll. My grades were slipping, and apparently, these grades weren't going to be enough.

As a first-generation college student and the daughter of Mexican immigrants, my mom never went to college, and my dad started but never finished. Money was always tight. My parents warned me about loans: "Los préstamos son peligrosos," they said. Debt was not an option, so I worked full-time to pay for tuition, books, rent – everything – which meant long hours, sleepless nights, and very little time to study. When my grades started to fall, I understood why, but I didn't know how to change them.

I walked out of that advisor's office feeling defeated, disappointed, and profoundly alone. It felt like there was no map to medical school or to mentorship, and I had to draw it myself. The years that followed were among the most difficult. I had to find ways to strengthen my application and prove that I was more than just my GPA. In my senior year, I enrolled in a course to become an EMT-B, and it had a profound impact. I found my calling in emergency medicine.

Eventually, I applied to a master's program in biomedical sciences – a second chance to prove I could handle the rigor of medical school. It wasn't an easy decision. The cost was daunting, but I saw it as an investment in myself, in my future. I read that only 2% of all physicians are Latina doctors – I dream of being one of them. I am now a rising second-year medical student.

The barriers I've faced – economic, cultural, and systemic – are the reasons I keep going. I want to be the face a little brown girl sees and thinks, "I can do that too," because representation matters, our stories matter, and I'm not done yet.

3.9 Narrative 9

Central theme: Cultural expectations, representation, and belonging in academia.

My journey has been profoundly shaped by my cultural identity and by the women who have surrounded and inspired me throughout my life. The strong women in my family influenced me – women who confronted societal stigmas and personal hardships with grace, perseverance, and unwavering dedication to their dreams. Their values of hard work and resilience became the foundation of my ambitions.

In academia, I have encountered both support and resistance. I've built meaningful relationships with Latinx and non-Latinx colleagues who share similar life experiences and who have recognized and affirmed my contributions. Yet, there have also been moments when I felt out of place or underestimated. These instances often pushed me to work harder than my peers, not just to succeed but to prove that I belonged.

Despite these challenges, engaging with young Latinx women through science outreach and community programs has been one of the most rewarding aspects of my career. I have witnessed their strength, ambition, and bold willingness to break cultural expectations in pursuit of their goals. Listening to their stories and watching them overcome systemic and personal barriers has deepened my appreciation of what it truly means to be a Latina woman in science.

Above all, I have come to realize how essential it is to increase the presence of women in STEM – and especially Latinx women. Representation matters. These women, including myself, serve as role models within our communities, bringing

much-needed perspectives to the scientific and academic landscapes. I hope more programs continue to support Latinx women in their pursuit of science, not only through financial assistance but also by providing access, mentorship, and visibility.

I am proud to hold a CNA and a bachelor's degree in Arts and Biology, and to serve as a Research Assistant at RFUMS. In this role, I have the privilege of supporting underserved students through my work as a laboratory technician, organizer, and translator for the pipeline programs INSPIRE and Science Saturdays.

3.10 Narrative 10

Central theme: Academic path of becoming an MD/PhD. Family and mentors' support.

I had many role models that I learned from while on my path to becoming a physician scientist. It began with my Tía Catalina, a biology professor who had to become a nun to pursue her education. When I was a baby, she took me outside to explain photosynthesis, later telling my mother I paid better attention than her students. Though I barely knew her, a letter she wrote to the magazine science, defending NIH diversity grants, revealed our shared passion: advocating for underrepresented communities in science.

Both of my parents were engineers and first-generation college students at the University of Texas at El Paso. My mother modeled for me what it meant to be a Latina in STEM, though her quiet advice – “Don’t wear heels in the field,” and “If they ask you to make coffee, say you don’t know how” – hinted at the bias she faced.

I rushed into my first MD/PhD application cycle and was rejected from every program. Though I was accepted to an MD program, I felt the sting of exclusion. Before classes began, I sought out a principal investigator of a research laboratory. When he asked if I wanted to pursue an MD with a distinction in research, I told him, “I don’t just want one paper – I want a PhD.” He became my PhD advisor and supported my MD/PhD academic pathway from that moment on.

During my PhD, I found community with a Latina woman scientist who worked in the laboratory next door and brought me comfort. Her husband, another scientist and Latino, became one of my most outstanding mentors. Even the facilities staff would refer to me proudly as “our MD/PhD student.” That sense of belonging deepened when I had the chance to lead a summer program for local Latinx high school students, helping them experience research for the first time.

Toward the end of my PhD, my grandmother entered hospice. Navigating her care revealed deep biases in the healthcare system – doctors who spoke down to my uncles and mother until I coached them on the right questions to ask. It was painful to see how easily respect was withheld from families like mine. My grandmother didn’t live to see me become the doctor she always said I would be, but my grandfather did. A former steelworker who rose through the ranks using geometry, he once asked me, “What are you going to cure?” In that moment, I knew he understood. I was in Pittsburgh – Steel City – solving problems, just like he did.

3.11 Thematic analysis

While this chapter centers on narrative and qualitative insight, patterns across the accounts reveal measurable consistencies. Of the 10 narratives analyzed, seven explicitly referenced financial hardships, five described immigration-related or

language barriers, and eight emphasized mentorships as a critical turning point in their trajectories. Nearly all participants (nine out of 10) described experiences of isolation or bias associated with being “the only Latina” in a classroom, laboratory, or clinical setting. These counts are not intended as statistical generalizations but as indicators of the recurring weight of specific challenges and supports. Taken together, they highlight structural patterns that align with national data on the underrepresentation of Latinx individuals in STEMM [1–3].

The 10 narratives reveal intersecting themes that highlight systemic barriers and cultural strengths shaping their trajectories.

3.12 Navigating barriers as first-generation students

A recurring theme was the challenge of being first-generation college students. Participants described experiences with discouraging advisors, limited institutional guidance, and a lack of role models – barriers that echo national trends. Latinx students represent approximately 15% of the college-age population but only 9% of the STEM workforce [1]. These experiences highlight the exclusionary practices and systemic inequities that persist in higher education for underrepresented students [20, 21]. Despite these challenges, participants consistently emphasized the importance of persistence, grit, and adaptability in achieving academic and professional success [22, 23].

3.13 Cultural identity, representation, and belonging

Cultural identity emerged as both a source of strength and a locus of challenge. Participants described drawing resilience from family, heritage, and language, yet also reported experiencing isolation as “the only Latina” in their academic or clinical settings. Representation in medicine remains disproportionately low: Only 6% of practicing physicians identify as Hispanic, despite Hispanic/Latinx people comprising roughly 19% of the US population [2, 3]. These findings underscore the importance of visible role models and culturally congruent mentorship in fostering a sense of belonging and persistence in STEMM fields [21, 24–26].

3.14 Mentorship and pipeline programs as transformational

Participants described pipeline programs such as INSPIRE as “life-changing,” providing early exposure to research, professional development, and mentorship. Access to structured mentorship and community networks was highlighted as critical for navigating systemic barriers, cultivating confidence, and sustaining academic persistence. Evidence supports the efficacy of mentorship programs in increasing the retention and success of underrepresented students in STEMM [21, 24, 25].

3.15 Resilience through hardship and nonlinear pathways

Nonlinear educational and career paths were a prominent theme. Participants recounted financial hardships, caregiving responsibilities, immigration challenges, and experiences of impostor syndrome. Such adversity often became a motivator rather than a barrier, fostering resilience and tenacity. Research supports the idea

that resilience is a key predictor of persistence among underrepresented groups pursuing STEMM careers [22, 23].

3.16 Family influence and intergenerational legacies

Family narratives played a central role in shaping participants' aspirations. Many described parental or grandparental sacrifices, cultural traditions of healing, and a responsibility to "open doors" for others. These findings align with research showing that family serves as a source of both motivation and cultural capital for Latinx students pursuing STEMM pathways [27, 28].

3.17 Commitment to service and equity

Finally, participants framed their careers in terms of collective progress rather than individual achievement. Examples included mentoring younger students, developing culturally tailored health resources, and advocating for equitable policies. This reflects a broader emphasis in the literature on culturally responsive mentorship and systemic interventions to promote equity and inclusion in STEMM [21–26].

4. Part II: Reflections on barriers and opportunities

Women in roles as students, administrators, scientists, and mentors contribute these reflections, drawing from their lived experiences and professional insights. Inclusivity and analysis were conducted as described above.

4.1 Reflection 1

4.1.1 Letters to the girl who dreamed in two languages

These are the journal entries I wish I had written at key moments in my journey to becoming a Latinx woman in medicine. Now, having finally stepped into a white coat, I return to those moments to reflect, reframe, and offer the words I once searched for – to guide the next generation of aspiring Latinx doctors.

4.1.2 Childhood: Language as love, not limitation

You were praised for being so helpful – reading documents, interpreting at medical appointments, translating grown-up conversations – for your Spanish-speaking immigrant parents. You didn't have the words for it then, but you were already carrying adult responsibilities as a child.

Being a first-generation high school and college graduate, growing up in a low-income household, and being the daughter of immigrants were all defining parts of your identity – but they weren't limiting ones. They were your superpowers. You became the bridge between your family and the world they had to navigate. That care, that responsibility, became your foundation for medicine.

Reflection: I now see the weight you carried. But if you couldn't change your circumstances, you could reframe them – and that reframing became your strength. The way you listened, the way you bridged cultures and languages, is now what

grounds your practice. You don't just translate words; you translate understanding. You bridge the space between providers and patients who don't share a common language or background. You are becoming the kind of doctor our community deserves – the one who makes it possible for others to attend a medical appointment as just a family member, not the interpreter, not the advocate, but simply a daughter, a son, a loved one.

4.1.3 Middle school: Spark and silence

Science was your favorite class. You felt empowered knowing the answers, knowing that knowledge was within reach. You aced examinations. Yet your teacher asked, “How did you do that?” – as if studying wasn't enough of an explanation. When others made the Honor Roll, they were praised. You were told, “You should keep that going,” as if your success was a fluke.

Reflection: Others may view you through the lens of their limitations, but you are not their expectations; you are your possibilities. This is the time to build your self-worth not on validation, but on self-reflection. Start journaling, explore hobbies, join clubs, and try everything that sparks curiosity. Small interests may lead to lifelong passions. The quiet determination you feel – that's the beginning of your voice.

4.1.4 High school: Hunger and hope

You balanced school and work, helped your parents while building dreams they didn't yet understand. You wanted to become a doctor but weren't sure what that path entailed. You sat in Honors classes where no one looked like you. It was the first time you heard about the SAT, college applications, and the unspoken expectation that you should have been preparing for years.

Reflection: It won't be comfortable, but it must be done. Seek out mentorship programs, college prep resources, and premed summer experiences. Apply even when you're scared, and protect your grades, but also safeguard your mental health. You can't care for others if you don't first learn to care for yourself. Take that precollege course. Look up which credits transfer. Ask questions. Research scholarships early. Your story, your resilience – those are assets, not deficits.

Leadership doesn't always look like holding a title. Sometimes, it looks like being the older sibling who works a job while going to school. That counts. Find the teachers who believe in you; they'll write your recommendation letters one day. You are already becoming the doctor you hope to be – one who listens, supports, and leads.

4.1.5 College: Belonging, blueprint, and becoming

You made it to a top university, far from home. You were surrounded by generational wealth and students with roadmaps – families who had taught them how to navigate STEMM, professors, internships, and medical school. You felt out of place. You were often the only Latina in the room. You began to wonder if you belonged.

Reflection: You don't need to be perfect. You need to keep showing up. Every step forward matters. It's okay to ask for help; it's necessary. For too long, you tried

to study harder, take on more, and expect different results. It left you exhausted. But once you joined mentoring programs, leaned into study groups, and focused on meaningful activities, your grades improved – and so did your confidence. You began studying smarter: scheduling focused blocks, attending office hours, and building a supportive peer network. Prioritize understanding over memorization. Align your goals with the medical schools you aspire to attend. Reach out to admissions offices – they are more open than you think. You're not an outsider – you are precisely what medicine needs.

4.1.6 Medical school: Taking up space

You took gap years, completed postbaccalaureate programs, and questioned yourself more times than you could count. But every experience confirmed that you belonged in medicine – not just as a clinician, but as a scientist, a mentor, and a community healer.

Reflection: Start with the end goal in mind. Plan your college timeline in conjunction with your premed requirements. Prepare for the MCAT early. Seek out free and low-cost resources. Don't be afraid to email admissions offices or ask to be matched with mentors. If there are academic gaps, consider postbaccalaureate or bridge programs, as many offer scholarships and conditional acceptances. When you finally get here – and you will – build your community. Choose organizations that make you feel more like yourself, not less. At times, you'll look around and not see yourself reflected in the mirror, but that doesn't mean you don't belong. It means you're the one making room for others.

You've led before: in your home, in your school, in your family. Now, leadership continues in medicine. Speak your thoughts. Take up space. Your story, your voice, and your presence are powerful. One day, a young patient will look at you and see you in a white coat – and everything will change. We do this for ourselves. For them. For you. And we keep going because we must.

4.2 Reflection 2

As a Latina scholar and lifelong resident of Little Village, an ethnic Mexican enclave on Chicago's Southwest Side, I have navigated multiple intersecting worlds: the community I come from, the academy I entered, and the scientific mindsets that often exist in tension with both. These in-between spaces, as Anzaldúa [29] powerfully described, are both deeply painful and deeply generative. My journey into health science and research was not just about professional development; it was a negotiation of cultural identity, epistemological authority, and systemic exclusion.

When I entered research spaces, I often felt pressure to leave parts of myself behind: my community-based values, my Spanish, my identity as a daughter of immigrants, and my ethnic and socioeconomic diversity. Instead, I was taught to prioritize objectivity, detachment, and positivist frameworks that left little room for cultural context or lived experience. Within this framework, the academy often engages in what Riger [30] calls "institutional othering," where women, people of color, and working-class scholars are marginalized through structural and epistemic exclusions. As Alberts and colleagues [31] note, women and people of color are consistently underfunded compared to their white male counterparts.

This institutional bias came into sharp focus when I submitted a grant proposal for a community health project that used autoethnographic and performance methods to explore the lives of immigrant women in Little Village. The proposal was rejected, in part because a reviewer claimed the project “lacked scientific rigor” and was “too anecdotal.” That moment was both devastating and clarifying. What they called “anecdotal” was the lived truth of my neighbors, my family, and myself. These weren’t just data points – as often seen in traditional research; they were stories of people’s lives – cultural, embodied, and political. At that moment, I clearly understood what Denzin [32] and Smith [33] have long argued: Traditional research methods often fail to support or even recognize the intellectual promise and epistemological relevance of non-dominant cultural perspectives. In academic discourse, knowledge is usually produced about communities rather than with or for them.

I refused to erase my community or myself from work. I turned to autoethnography, CBPR, and performance as methodology. In doing so, I became both the researcher and the researched. I allowed my lived experience to inform every phase of inquiry – from question formation to dissemination. Through story and performance, I claimed space for cultural truths that were once deemed irrelevant or invalid in scientific research.

Latinx scientists often inhabit the “in-between” role that Diversi and Moreira describe [34]. We constantly translate between English and Spanish, as well as between academic and community discourse, Western science, and ancestral knowledge. The translation between both mindsets can be exhausting, but it is also a source of innovation. We see what others miss. We feel what others dismiss. We create new ways of knowing that reflect the complexity of our world. This is why I continue to advocate for culturally rooted, community-informed, and equity-driven research practices.

Our stories are not secondary to science; they are science. As Plummer [35] reminds us, storytelling can foster a more profound respect for our shared humanity. But stories also do something more radical: They redistribute power. When we tell our stories on our own terms, we shift the control of the narrative – who gets to define problems and who is trusted to solve them.

In this political moment, when immigrant families are under attack, when public health systems fail communities of color, when Latina students are still told they “Don’t belong” in science – we must double down on narrative, resistance, and truth-telling. We must train and support a new generation of community-engaged scholars who understand that research should not be conducted on communities, but *with* them. This means recognizing participants as whole human beings whose lives extend far beyond being a data point in spreadsheets and statistics. To ethically ground and decolonize research is to center participants’ voices, stories, and lived realities as essential to their humanization, the coproduction of knowledge, and the social justice we seek.

4.3 Reflection 3

As a Family Engagement mentor working with high school students pursuing careers in health care, I have the privilege of witnessing both the systemic barriers and the extraordinary perseverance that shape the journeys of Latinx women in Lake County.

In communities like Round Lake, Illinois, many Latinx students face significant gaps in academic preparation, professional mentorship, volunteer opportunities, and access to reliable transportation. According to the American Federation of Teachers [36], only 26% of Latinx fourth graders scored at a proficient level in mathematics in 2015, compared to 51% of white students and 65% of Asian students. Additionally, shadowing doctors and volunteering at hospitals are often unpaid services that many individuals interested in health care must participate in; unfortunately, many of these students cannot prioritize these roles as they must work paid jobs to support their families, creating an uneven playing field early in their pursuit. These disparities do not reflect differences in talent or motivation but rather in access to quality education and support systems. In addition to academic and systemic inequities, many Latinx women navigate life in two languages, balance dual cultural expectations, and face financial hardship or unstable home environments. These stressors delay or derail their educational pathways; nearly 34% of Latinx college students take six or more years to earn their degrees – a timeline that can be both emotionally taxing and financially burdensome.

Yet, despite these formidable hurdles, the resilience of Latinx women remains an inspiration. Over the past 15 years, I have seen firsthand their adaptability, tenacity, and deep commitment to their goals. These qualities make them uniquely prepared to enter and contribute meaningfully to the healthcare workforce. Increasingly, healthcare institutions are recognizing the immense value these women bring, not just through cultural and linguistic competence, but also through their lived experiences and authentic commitment to serving others [37].

I interact with Latinx high schoolers who are not merely joining the healthcare field; they are transforming it. They are becoming advocates, mentors, and role models. Their journeys are not only about overcoming barriers – they are about creating change. By pursuing health careers, these women are not just building futures for themselves – they are uplifting families, enriching communities, and reshaping the healthcare system to be more inclusive, compassionate, and just.

4.4 Reflection 4

I currently mentor students through the INSPIRE program [4], an eight-week applied research initiative designed to build pathways into science and medicine for individuals underrepresented in these fields. To foster truly inclusive research environments, I've built a laboratory that prioritizes teamwork, mental health, and flexibility. I remind my students that their health and family come before the laboratory. We also proactively address financial barriers; for example, I cover upfront conference costs using a laboratory credit card to ensure that students from low-income backgrounds are not excluded from professional opportunities due to a lack of access to credit or funds.

Through this program, I met a then-sophomore from Lake Forest College – a Latinx woman and first-generation college student – who was beginning her journey in neuroscience. It has been an honor to watch her growth, both intellectually and personally. She brought incredible initiative to our laboratory, launching a new research direction focused on how pregnancy impacts cognition and risk for Alzheimer's disease. Her project required the development of a novel protocol to examine inflammatory markers (microglia), and she successfully presented her findings at both local and national conferences, often handling the registration

process herself. In her senior year, she proposed and completed a senior thesis in our laboratory. During this time, I witnessed firsthand the intensity of her commitment: She was a full-time student and a part-time researcher. She held jobs to support her education while serving as her family's primary translator and managing the stress of the current political climate in the United States.

She was one of the most self-directed undergraduates I have mentored. Her dedication culminated in an award-winning thesis and recognition as one of the top neuroscience students at her college. Her journey has come full circle as she now volunteers as a student advocate in other Rosalind Franklin University community outreach initiatives. Her story is a powerful example of what happens when we invest in inclusive, community-rooted pathways to scientific careers.

Since mentoring my first student through INSPIRE, four additional Latinx women have joined the laboratory. This year, we partnered with a Work-Study initiative that places high school students from North Chicago into internships. Our first participant began in January 2025. Despite being shy at first, they grew in confidence and presented their research at the program's conclusion. Inspired by the experience, this student now advocates for expanding such opportunities for other Latinx youth – a powerful testament to the impact of early exposure and mentorship.

5. Part III: Academic strategies and systemic solutions

Embedded within several narratives and elaborated in the discussion and conclusion sections are evidence-informed recommendations for dismantling systemic barriers and supporting Latinx women in STEMM. These recommendations are framed not only as individual supports but also as systemic reforms that require institutional accountability and measurable outcomes.

5.1 Key academic recommendations

1. Culturally responsive mentorship

Establish long-term, culturally attuned mentorship programs across academic levels, beginning in high school and extending into graduate and professional training. Mentors should reflect students' lived experiences and cultural identities, fostering "cultural congruence" that affirms identity while guiding academic development [25]. Implementation frameworks should include faculty training in equity-minded mentorship and structured evaluation of mentorship outcomes, such as student retention, publication rates, and progression into STEMM careers [24].

2. Flexible, nonlinear pathways for all ages

Recognize and validate nontraditional academic trajectories, including career pivots, military service, and re-entry after caregiving. Research shows that nonlinear pathways can expand participation and redefine academic excellence [22]. Institutions should build re-entry systems (e.g., bridge programs, credit for prior experience) and formal policies for family and caregiving leave.

3. Institutional reform

Address systemic bias by moving beyond symbolic inclusion toward equity-driven policy and accountability. This includes transparent reporting of Latinx representation across faculty ranks and leadership [2, 3, 36], equity audits of curricula and admissions processes, and institution-level monitoring of progress against measurable benchmarks [20]. Examples include annual diversity dashboards, equity scorecards, and external review boards.

4. Early exposure and outreach

Expand pipeline programs, such as Science Saturdays, INSPIRE, Mini Medical School, and Hero Parents Academy, which introduce Latinx youth to STEMM [4–6]. Early exposure has been shown to have a long-term impact on persistence, sense of belonging, and career aspirations [23]. Outreach and family engagement are critical. Programs should integrate bilingual communication, parental workshops, and culturally relevant curricula [26].

5. Financial literacy and access

Provide early and accessible guidance on the cost of funding education, FAFSA, scholarships, and financial planning. Institutions should remove barriers such as unpaid internships, prohibitively expensive preparatory programs, and predatory for-profit alternatives. Models such as Excelencia in Education's [26] STEM equity reports provide frameworks for building Latino talent pipelines through financial access and accountability structures.

6. Mental health and community care

Normalize culturally sensitive mental health services in academic settings. Latinx students often experience stigma around mental health, compounding stress and isolation [27]. Institutions should expand peer support groups, affinity spaces, and culturally informed counseling services, and measure the outcomes in terms of student wellness and retention.

7. Validation of alternative knowledge systems

Incorporate methodologies such as CBPR and qualitative methods, that is, autoethnography, storytelling, photovoice, and *testimonios*, to promote decolonial frameworks into academic recognition systems; enhance the ways the academy evaluates, legitimizes, and rewards knowledge production. This validates lived experience as a legitimate form of knowledge production and creates inclusive pathways for Latinx women whose research engages with community transformation [38]. Such approaches should be embedded into curricula, faculty review policies, and tenure evaluation.

6. Broader application of recommendations

To maximize their impact, these recommendations must move beyond isolated programs toward systemic adoption and policy integration.

Scaling mentorship programs: Effective mentorship models should be replicated across institutions and sustained through federal/state funding, philanthropic support, and professional societies. Faculty workload policies should

formally recognize mentorship of underrepresented students as a valued scholarly activity. Annual reporting of mentorship outcomes (e.g., persistence, graduation, and career placement) should be institutionalized [25].

Institutional accountability measures: Reform requires equity scorecards, retention dashboards, and annual diversity audits that disaggregate data by race, gender, and socioeconomic status [9]. Accrediting bodies and funding agencies should integrate these metrics into their review processes, creating structural incentives for accountability.

Integration of alternative knowledge systems: Lived experience, CBPR, and storytelling must be embedded into curricula, tenure review, and evaluation standards [38]. Recognizing community-engaged research as scholarly excellence ensures that diverse epistemologies are not only validated but also rewarded.

Policy and practice implications: At the policy level, state and federal agencies can strengthen diversity in STEMM by expanding pipeline program funding, tying grant eligibility to equity reporting, offering loan forgiveness opportunities, and incentivizing partnerships with community-based organizations [26]. At the practice level, professional societies can update codes of ethics, adopt inclusive conference practices, and establish equity task forces. Institutions, in turn, must embed equity frameworks into campus culture, ensuring reforms are replicable, measurable, and sustainable.

7. Conclusion

This chapter amplifies the voices of Latinx women who, despite systemic and cultural barriers, persist in their pursuit of science and medicine. Their stories go beyond “resilience” to reflect not only the injustices they face but also the brilliance, strength, and community that sustain them. They are not passive recipients of exclusion; they are active agents of change, pushing institutions to become more equitable, inclusive, responsive, and safe.

To foster environments where Latinx women can thrive as scientists, institutions must:

- Invest in culturally responsive mentorship and pipeline programs that start early, extend into graduate and professional training, and include long-term evaluation frameworks [21, 24, 25].
- Increase representation of Latinx women in faculty, leadership, and decision-making roles to ensure students see themselves reflected in authority and influence [2].
- Support flexible academic pathways and recognize that nontraditional trajectories enrich science and broaden the definition of excellence [22].
- Address institutional bias and racism through equity scorecards, diversity audits, and accountability frameworks [20].
- Promote mental health and community care, recognizing the emotional and psychological burdens of being underrepresented [27].

- Validate alternative knowledge systems, such as CBPR and storytelling, ensuring equity in research recognition and reward [38].

The experiences shared in this chapter challenge prevailing assumptions about who belongs in science – and offer a vision of what is possible when Latinx women are supported, affirmed, and empowered. The future of science depends on the full participation of diverse voices, and it is time for our institutions to reflect that reality. These women are not merely striving to enter science – they are reshaping it.

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