

UC Irvine

UC Irvine Previously Published Works

Title

Genesis of a Latina Science Professor

Permalink

<https://escholarship.org/uc/item/5tt9f3cp>

ISBN

9783030735500

Author

Briscoe, Adriana Darielle Mejía

Publication Date

2021

DOI

10.1007/978-3-030-73551-7_5

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at

<https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

Genesis of a Latina Science Professor



Adriana Darielle Mejía Briscoe

Introduction

Over the course of my career in science, I have been asked, “What’s it like to be a minority?”—a question I have been at times too flummoxed to answer. I can understand the question, since I am such a rare bird—a Latina full professor of ecology and evolutionary biology in a field where Hispanics/Latinos comprise about 2–5% of faculty across all ranks nationally (Jimenez et al., 2019). But the question is also wearing: what Jennine Capó Crucet has called *spotlighting*, where minorities are asked to speak as representatives of their respective groups while whites are considered individuals (Ong, 2005, p. 599; Capó Crucet, 2019). I do get tired of answering that question, but I will try to pull it together here. What follows below, an account of my community, my family, my schoolteachers, and my individual journey to becoming a professor, is my response.

A Family of Mexican American Teachers

I grew up in the 1970s and 1980s in Colton and Grand Terrace, California, adjacent towns on the edge of a smog-filled valley at the base of the San Bernardino Mountains. While Mexican people have inhabited this area since the colonial period, my mother’s side of the family only settled here at the turn of the twentieth century when the violence of the Mexican Revolution drove them to emigrate (Briscoe, 2019a).

A. D. M. Briscoe (✉)
University of California, Irvine, Irvine, CA, USA
e-mail: abriscoe@uci.edu

My mother's father, Sebastian Mejía, and both of her grandfathers worked in the orange groves that spread out like a quilt across San Bernardino and Riverside, California (U.S. Federal Census, 1920, 1930a, 1930b). Back breaking and poorly paid, farm labor provided families with meager resources. The men had few options as the Anglo farmers and business owners did not allow them to hold supervisory roles. If you were one of the luckier workers, you had a job at the local Southern Pacific or Santa Fe railyards. But even then, wages did not prove to be much better. As most Mexican families lived in poverty, their children dropped out of school to work (Tuck, 1946).

My maternal grandmother, Consuelo Lozano, born in California to Mexican immigrants from Nuevo León and Michoacán, lived with her family across the street from the Slover Mountain quarry in the barrio in South Colton. Throughout high school, she hid in shame in the girl's bathroom during noontime. Her parents were too poor to give her money for lunch. Despite her family's poverty, she did well enough in her courses to be ranked among the school's top students (*San Bernardino Daily Sun*, April 24, 1934). She graduated from Colton High School in 1937, the same year as Angel and Augustine Oliva, two Mexican brothers that were part of the Latin Lads, an 11-member swingster ensemble (*San Bernardino Daily Sun*, April 18, 1936). She was the *only* Spanish-surnamed woman and the Oliva brothers were the only Spanish-surnamed men to graduate in a class of 110 students (*San Bernardino Daily Sun*, June 11, 1937). Four years earlier five other girls with Spanish surnames had enrolled in her freshman class, while hundreds of Mexican school children attended elementary and middle schools in the district (*San Bernardino Daily Sun*, October 10, 1933). My grandmother beat incredible odds. Graduating from high school was a feat for a Mexican American girl whose father worked on a farm (Fig. 1).

I imagine being the only brown girl in her graduating high school class had probably made my grandmother self-conscious. Did she call herself Connie and not Consuelo because of a prohibition in school against speaking Spanish? Scholars would call this a form of Americanization in schools (Flores, 2017). Why did she only speak English to me? I only know that years later, my grandmother's admiration for education profoundly influenced me. Both my mother and I followed in her footsteps and graduated from Colton High School. Along the way, she encouraged both of us to become educated.

In 1939, my maternal grandparents boarded a train from San Bernardino to San Francisco to see the World's Fair (Fig. 2). Celebrating his honeymoon, my grandfather, a Mexican immigrant from Aguascalientes—who was brought to New Mexico by his parents when he was two—wore a long suit-jacket and baggy-trousers made of generously cut fabric, a stylistic feature shared with the Zoot suits that became fashionable among Black, Latino, and Filipino men in the 1940s (Alvarez, 2009).

My grandfather cut a fine figure with his groomed hair and polished leather shoes, which spoke to his aspirations. While he had dropped out of high school during the Great Depression to work at the Pacific Fruit Express, loading oranges, and other citrus in the Colton railyard, his careful attention to his appearance served as a kind

Fig. 1 Consuelo Lozano, a Mexican American woman and maternal grandmother of the author, was the only Spanish-surnamed woman to graduate from Colton High School in Colton, California in 1937 out of a class of 110 students. In 1979, she was a member of the largest graduating cohort of bilingual teachers in the United States. Source: Adriana Briscoe, Wikimedia Commons



of shield against the discrimination Mexicans faced in housing, schooling, and work. It also probably aided in counteracting the stereotype that Mexicans were “dirty” or “unhygienic” (Molina, 2011).

My mother was born in 1942, 2 months after the Mexican consul filed a protest with the city of Colton for discrimination at the municipal pool—Mexicans could swim in the pool only when it was dirtiest, right before it was drained (Griswold del Castillo, 2008, p. 87; see also Ocegueda, 2017)—and 8 months before the Zoot suit riots in Los Angeles (Steele, 2008, p. 41).

The Zoot suit riots occurred in June 1943 when United States servicemen scapegoated then attacked American residents of Mexican descent. Ostensibly, this was for “unpatriotically” wearing suits made with copious amounts of fabric at a time when the U.S. government deemed the rationing of fabric to be critical to the war effort. In the summer of 1944, the racist attacks then spread to San Bernardino, California, adjacent to Colton where my grandparents lived (Ocegueda, 2017).

Despite the prejudice faced by men of Mexican descent in the United States, my maternal grandfather like hundreds of thousands of other Mexican American men, abandoned the zoot suit for a military uniform when he was drafted into the Army to fight in World War II (*San Bernardino Daily Sun*, May 4, 1941; May 30, 1943a; Telles & Ortiz, 2008, p. 85; Rosales, 2017). A disproportionate number of these men became decorated war veterans for their bravery (Griswold del Castillo, 2008, p. 51).

The war also made available job opportunities for women in military factories (Ruiz, 2008, p. 82, 101) and on military bases, an opening which my grandmother jumped at. She patriotically dedicated herself to the war effort by training in aircraft repair that led to inspecting airplanes at the San Bernardino Army Air Base (*San*

Fig. 2 Sebastian and Consuelo Mejía (née Lozano) boarding a train from Colton, California to San Francisco to see the World's Fair during their honeymoon in 1939. During World War II, Sebastian Mejía fought in the Philippines as a member of the U.S. Army while Consuelo Mejía inspected airplanes at the San Bernardino Army Air Base. Source: Adriana Briscoe, Wikimedia Commons



Bernardino Daily Sun, December 13, 1943b). On the war front under the leadership of General MacArthur, my grandfather fought the Japanese in the Philippines with heavy artillery.

After the war, my grandmother, like many other Mexican American women, returned to being a homemaker (May, 2008), while war veterans used their G.I. Bill benefits to attend school, which slowly opened doors to higher education for Latinos (Telles & Ortiz, 2008, p. 88).

My mother, Loretta Mejía, a woman of Spanish and Indigenous Mexican descent, became the first in her family to go to university. In 1965, she was one of only three Spanish-surnamed undergraduates—and the only woman—out of 76 from San Bernardino county, the largest county in the United States, to graduate from the University of California, Riverside (Fig. 3) (*San Bernardino Daily Sun*, June 4, 1965). There were more than 3100 undergraduate and graduate students enrolled in UC Riverside at the time (UCR Office of Institutional Research, 2017).

Fig. 3 Loretta Briscoe (née Mejía) was one of three Spanish-surnamed undergraduates—and the only women—out of 76 from San Bernardino county, the largest county in the U.S., to graduate from the University of California, Riverside in 1965. After graduation, she became a bilingual elementary school teacher. Source: Adriana Briscoe, Wikimedia Commons



My mother remembers seeing only four or five Mexican American students, and only one Mexican American secretary, on the UC Riverside campus despite its location in a city of over 100,000 people. The lack of familiar faces angered her and served as a reminder of an experience she had while a student at Colton High School.

In her junior year her gym teacher, Miss Segovia, in charge of organizing a dance program, asked my mother to develop a modern dance that could be performed in front of the whole school. After my mother created this dance and performed it for Miss Segovia, her teacher asked her to teach it to one of the Anglo girls.

Miss Segovia then asked my mother to design a costume for the Anglo girl because she wanted her, not my mother, to do the dance in front of the whole school. Incensed, my mother declined to create a costume for her classmate. Not being allowed to publicly perform in front of the school was one of the ways that Mexican American kids were made invisible by teachers.

Years later, my mother became a teacher in the same school district. She attacked her work with a vengeance, dropping me off at my grandmother's house after nursery school so that she could return to her classroom and prepare lesson plans. Determined to make a difference for the next generation of Mexican American children, she focused most of her efforts on teaching them how to read. If they learned to read and developed a reading habit, she believed they could empower themselves and someday go to college.

The Civil Rights movement and its impact on public education that led to the Bilingual Education act of 1968 facilitated my mother's transition into teaching, an occupation typically filled by white women (Flores, 2011, p. 314).

"There weren't that many options," my mother said. "Back then, women were really only encouraged to go into teaching or nursing."

Studying social sciences and foreign languages in college equipped my mother to become an elementary school teacher. With Spanish as her first language, bilingual education seemed a good fit. The Bilingual Education Act provided federal funds to aid English-learning students, and the Class Size Reduction program resulted in more job openings in kindergarten through the third grade (Flores, 2017).

She began teaching third grade as an intern teacher at Ramona Elementary School in San Bernardino in 1965 (*San Bernardino Daily Sun*, February 28, 1965). Ramona was one of the first segregated schools in the region. Opened in the mid-1920s, it was primarily built for Mexican children from San Bernardino's west side (Ocegueda, 2017, p. 102).

In 1966, my mother became 1 of 12 founding members, and the cultural enrichment chair, of the Progressive Action League of San Bernardino. Other officers included David Serrano, legal chair, and Mary Lou Marquez, secretary, who 4 years later would become my godparents. The goals of the organization included "encourag[ing] youths of minority races to make full use of educational opportunities and to encourage their participation in political, cultural and social activities. . . ." (*San Bernardino Sun-Telegram*, September 16, 1966). The organization sponsored public lectures, canvassed voters, and held educational events.

Furthermore, my mother served as a board member of the San Bernardino Dependency Prevention Commission (DPC), part of President Lyndon B. Johnson's War on Poverty. My father, Peter Briscoe, who had graduated from UC Riverside in 1964, directed the DPC's barrio tutoring program in San Bernardino until right before he married my mother in 1967. His program's tutors helped teach reading and math to hundreds of Black and Latino students including two dozen illiterate adults. "We believe that all these programs are vital to ending the cycle of poverty," my father said in a newspaper interview. "What do you do with the third grader who has not yet learned to read?" (*San Bernardino Sun*, June 4, 1967).

My parents strongly believed that literacy, developed around the regular reading of newspapers and books, formed the basis of civic engagement and a path out of the barrio for people of color.

Soon after my parents married, they both decided to enter graduate school, their path out of the working class. My mother pursued a Spanish graduate degree at UC Riverside in 1968, while my father pursued a degree in library science at the University of Hawaii in 1969.

Contemplating her marriage to my father, a black-haired brown-eyed man of Spanish, Mexican, Anglo-Irish, and Native American descent, my mother penned an essay, "Who or What Is a Chicano?" for the newly organized United Mexican American Students (UMAS) newspaper (*El Estudiante UMAS*, May 10, 1969). She explained her new gringo last name to her fellow Chicanos this way, "Looking around I see that in my own family we run the gamut of fair to dark, and Chicanos themselves accept a very broad range of radically different people as their own."

When I was born in 1970 in Honolulu, Hawaii, my mother took a leave of absence from UC Riverside to stay home and take care of me, putting an end to her editorial activities. Soon after my father's graduation, a job offer as a reference

Fig. 4 Peter Briscoe, librarian, reading to 1-year-old Adriana Briscoe in Santa Rosa, California in 1971. Photograph by Claude Robert Briscoe. Source: Adriana Briscoe, Wikimedia Commons



librarian at Sonoma State College precipitated our family's move to Santa Rosa, California (*Press Democrat*, May 29, 1972; Ersland, 1973).

An early photograph shows me as an infant splayed out on my belly on the floor of our living room in front of a book that my father propped up for me to look at as he reads to me aloud (Fig. 4). As a child, I could not have been more fortunate. I had been born into a family of readers, people who my father said, "read every damn day, or we felt deprived."

Three years later, in 1973, we moved from Sonoma County and returned to Colton, California so my father could take a better job: collection development officer at the Cal State San Bernardino library (*Press Democrat*, July 1, 1973). Unfortunately, in the meantime, my mother had not been allowed to complete her master's degree in Spanish over a miscommunication of the date of her oral exam. The department seemed inflexible in accommodating her as a wife and a mother.

My mother returned to work and started teaching at Woodrow Wilson elementary school in the Colton Joint Unified school district. Three years earlier, administrators had selected the Colton school district for participation in a bicultural bilingual program where children of immigrants could maintain their heritage language while learning English (*San Bernardino Sun*, August 18, 1970). From its inception, the program was contentious: some teachers opposed students speaking Spanish in school. Parents pushed back. In 1971, Colton Joint Unified School District Superintendent Owen J. Cook said, when asked by these parents whether teachers who prevent students from speaking Spanish on campus would be fired, "I would think this would not be necessary and should not be done. . . students should be allowed to

speak Spanish on campus but not necessarily in the classroom” (*San Bernardino Sun*, December 16, 1971).

Part of the bicultural program involved showcasing Mexican regional dances at the local schools. In 1972, then-U.S. Treasurer Romana Acosta Bañuelos, a Mexican American appointed to her position by President Richard Nixon, visited Woodrow Wilson to view these dances “. . .because of the Colton district’s outstanding bilingual program” (LoVae, 1972). Despite the U.S. Treasurer’s enthusiasm for the program, 4 years later, the *San Bernardino Sun-Telegram* reported on the ongoing controversy surrounding bilingual education in schools—a number of Mexican American parents did not want their children to participate, fearing discrimination (Crawford, 1998, p. 61). The article also noted that the “Elementary schools with the highest emphasis on bilingual education are Wilson and Rogers [schools] where enrollments are heavily Mexican-American” (Wells, 1976).

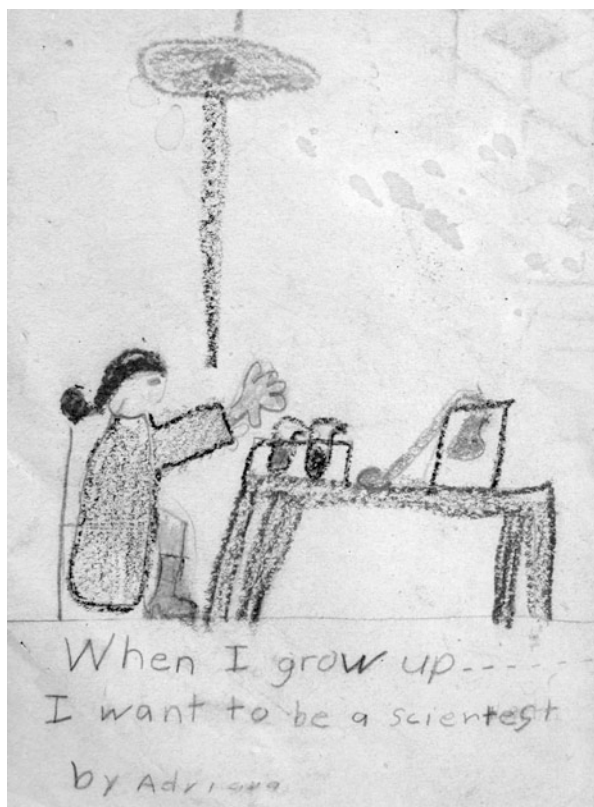
In 1975, I started kindergarten at Woodrow Wilson elementary school. With English as my first language, I was not placed in a bilingual classroom and Spanish instruction was not available in lower grades. I remember the Mexican dances performed by girls in braids and colorful ribboned skirts and boys in boots and hats for Cinco de Mayo. I can still hear the tapping of the girls’ shoes against the concrete of the outdoor stage and see the blurred movement of their twirling skirts, music blaring from a loudspeaker.

Even with a bilingual teacher as a mother, I knew from an early age that speaking Spanish was discouraged in school, as the historian Gilbert Gonzalez (1990) notes. One of my mother’s teachers would draw a circle in the dirt and make the offender remain there all during recess.

Midway through kindergarten at Woodrow Wilson elementary school, the district psychologist tested my IQ to ascertain my eligibility for the school’s Mentally Gifted Minors program. It was not until the beginning of second grade that a Mexican American teacher, Mrs. Gloria Preader, recommended I skip a grade on the basis of my IQ test results. In retrospect, my teacher’s action was a stroke of good luck—42% of schools nationwide did not identify a single student with gifts and talents in 2015–2016; among those schools with programs for such students, Native American, Black, and Latino students were underrepresented (Gentry et al., 2019). As educational scholars have noted, teachers of color can sometimes serve as indispensable advocates for minority students that would otherwise be overlooked (Flores, 2017).

While skipping grades is now discouraged as not being good for students socially or emotionally—and indeed my parents held me back the next year—in my case my tracking into Miss Cejka’s third-grade class was fortuitous. During the summer, Miss Cejka volunteered at the newly opened George C. Page Museum in Los Angeles, the home of the La Brea Tar Pits, a world-class scientific educational resource not available in my community. Thanks to her access to this institution, I learned the scientific names of dinosaurs through the music she played on the classroom record player, and she let me handle a saber-toothed cat fossil she borrowed from the museum. These interactive experiences sparked my imagination: it was around the age of seven, when I would have been in third grade, that I drew a

Fig. 5 Self-portrait by the author around the age of seven. Source: Adriana Briscoe, Wikimedia Commons



self-portrait of myself sitting at a lab bench with test tubes, wearing a lab coat. At the bottom of the pencil and crayon drawing I wrote: “When I grow up. . .I want to be a scientest [sic]” (Fig. 5).

By 1973, my maternal grandparents had moved from south Colton to the town of San Bernardino two blocks from San Bernardino Valley College where my parents had gone to school before transferring to UC Riverside. My grandmother’s house was situated a few blocks from St. Prophet Elias’ Greek Orthodox Church, the home of the barrio tutoring program my father ran until 1967 when its funding was cut (McCarthy, 1967).

After my grandmother’s children grew up and left home, she sought employment in the San Bernardino School District as a teacher’s aide. She worked as a teacher’s aide for more than a decade when she went back to school and got her teaching credential. She was then in her sixties.

Times had changed from when she could be hit on the head or hand with a ruler in school for speaking Spanish. From the ages of six to nine, I watched my grandmother study at her kitchen table with a group of women who shared the distinction at the time of being part of the largest graduating group of bilingual teachers in the United States (*San Bernardino County Sun*, July 1, 1979).

Given that both my mother and grandmother became teachers—a feminized occupation many Latino parents socialize their daughters to seek out (Flores, 2019)—perhaps unsurprisingly, I followed them into a profession that involves teaching. My desire to please my grandmother and parents motivated me to succeed in school, and later to please myself I pursued science, even though as a Chicana, I lacked visible scientific role models. Like my mother and grandmother who had to learn to navigate the teaching profession, I had to learn how to navigate the profession of science on my own.

Una Jóven Científica

As a child, I watched Jacques Cousteau, the French underwater explorer, on television. Dazzled by his team's underwater camerawork, I paid close attention to Cousteau because my father was also an admirer, having studied French in community college in the 1950s.

Filming of one of the most memorable episodes of *Cousteau's Rediscovery of the World* took place in the Sea of Cortez in Baja California where my family went camping one summer. I remember the morning we spent collecting dozens of sand dollars in the flat sandy plain that spread out in front of us when the sea receded at low tide. I collected as many of these flattened shells as possible and recall the delight of breaking them open and discovering delicate butterfly-shaped teeth inside.

The experience of collecting rocks and seashells in Baja California and other places we visited in Mexico awakened in me a fierce desire to observe and study nature. I did this wherever I could—in our backyard, along the edges of concrete sidewalks, among my grandmother's potted succulents.

After the third grade, we moved from Colton to Grand Terrace, California, which sits on a bluff overlooking the San Bernardino valley. I went to a new elementary school and junior high there along with other Mexican American children bussed from Colton. More affluent families lived in Grand Terrace than Colton. A large portion of the people who lived in Grand Terrace were white, Seventh Day Adventists. My family's move to Grand Terrace, a sign of their upward social mobility, provided me with experiences of operating in a predominantly white space (McGee, 2016), which later eased my transition into college.

Mr. Campbell, my eighth-grade social studies teacher, a blue-eyed man with straight blonde hair and a rough bowl cut, counted among the most influential people I met in junior high. Part of an extended family of Seventh Day Adventists, Mr. Campbell's father-in-law, Dr. Bruce Halstead, ran a private zoological research institute (Leonard, 1968).

Dr. Halstead was an ichthyologist (a scientist who studies fish), a diver, and one of the world's experts in the medical consequences of being bitten, shocked, stung, or otherwise poisoned by marine animals. He had affiliations with the U.S. Navy and Loma Linda University and sponsored a youth science program at his institute, run by his son-in-law. Mr. Campbell recruited me along with my best friend Tina

Forthun to the program (Rinehart, 1986). He astutely surmised that Tina and I would reinforce each other's eagerness to learn science. After my father learned that Dr. Halstead knew Jacques Cousteau personally, and had gone on expeditions with him, my father enthusiastically supported my participation.

As part of the youth science program we helped Dr. Halstead and Mr. Campbell conduct research for a book entitled, *A Color Atlas of Dangerous Marine Animals* (Halstead et al., 1989). We read scientific descriptions of deadly marine organisms, bits of *A Color Atlas* that had already been drafted, and then identified the ocean in which the organisms were found and labeled the location on a map. A cartographer created distribution maps, properly proofed and illustrated, as part of the final atlas.

Dr. Halstead recreated for us other tasks he did when he was a teenager working in the California Academy of Sciences, including maintaining his private collection of ethanol-preserved marine organisms. Like Dr. Halstead in his youth, I opened amber-colored specimen bottles and topped off the evaporated liquid or poured the murkier jars of fluid down the sink and refilled them with fresh preservative.

More than 30 years later, to my surprise and delight, the California Academy of Sciences, which had greatly influenced Dr. Halstead in his youth—a fact I only learned while researching this article—elected me a Fellow (California Academy of Sciences, 2018). I think Dr. Halstead, long dead, and Mr. Campbell, would be pleased by this. I feel gratitude that this unusual, farsighted family opened the doors of science to me.

Surveys of women who, like me, participated in science enrichment programs as eighth graders suggest that these programs can lead to a higher-than-average rate of enrollment in 4-year universities and increased interest—and boost in self-confidence that they could succeed—in science (Arbuckle, 2013).

Finding a Place in the Academy

By the time I was admitted to Stanford for university, my parents had elevated their economic status from working-class to the middle class through education and now lived in Grand Terrace. They could afford to pay for my undergraduate tuition on a teacher's and a librarian's salary, and because my father respected Stanford's reputation, he agreed to pay. I had won a National Hispanic Scholar award from the Mellon Foundation but the \$1500 scholarship paled in comparison to my parent's generosity (*San Bernardino County Sun*, May 9, 1988).

Going to Stanford from Colton High, a school where a majority of my mostly Mexican American classmates were eligible for free or reduced lunch, required some adjustment. As Richard Rodriguez wrote about his time as a student at Stanford, "I found myself on a campus with golden children of America's upper middle class. Many were students both ambitious for academic success *and* accustomed to leisured life in the sun" (Rodriguez, 1983). Unlike many of my classmates, I did not play piano or violin or know how to ski, play golf, sail, or ride a horse—other forms of cultural capital that many affluent students possess (Lareau, 2011). I did not

own a car or rock climb. I *did* know how to read and how to converse about books, having spent the 18 years of my life leading up to that point talking about them with my parents at the dinner table each night.

My teenage ambition of becoming a scientist also probably helped me (unwittingly) survive being weeded out of lower-division science courses at Stanford: as a 16-year-old, in the summer between sophomore and junior year of high school, I had taken inorganic chemistry at San Bernardino Valley College, which gave me early exposure to how college science courses were taught and how students were evaluated. I sought out this advanced instruction because seeing how few of my Colton High School classmates went to college made me skeptical of the preparation we were receiving.

As an undergraduate at Stanford, I found a happy place in Professor Ward Watt's laboratory in the Department of Biological Sciences. Professor Watt and his wife, Dr. Carol Boggs, a lecturer, ran joint labs devoted to the study of the evolution and adaptation of butterflies in the wild. Each summer, Watt and Boggs took their labs, including undergraduates, to the Rocky Mountain Biological Laboratory in Gothic, Colorado. Watt also paid his students a stipend, a practice that made it easier for me to persuade my parents to let me go away for the summer to do field research rather than come home and work a retail or a fast-food restaurant job as I had done in high school.

In my junior year of college, I joined Watt's lab for a field season, collecting butterflies (Briscoe, 2019b)—a transformative experience. The beautiful mountains and the scent of the pine trees soothed the anxiety I felt from taking too many classes. Running around in a t-shirt and jeans in muddy sneakers with a butterfly net cemented my decision to go to graduate school. Going to graduate school held the promise of travel to exotic places, away from family, but also away from the poverty and severe air pollution of my community. I won a 5-year fully funded fellowship to attend Harvard from the Howard Hughes Medical Institute.

Despite having graduated from Stanford with honors, which should have made me feel self-confident, at Harvard I became acutely aware of a class difference between me and the majority of other students in my graduate cohort. While both my parents as first-generation college graduates had individually earned Master's degrees in education, library science, and public administration, most of the graduate students in my lab and program were the children of science professors. At least three of the graduate students I knew had fathers who were physics professors. Two graduate students had at least one parent who was a biology or genetics professor. Another's father was a Harvard professor. My classmates' backgrounds mirror data from 1979 to 2010 from the U.S. Bureau of Labor Statistics showing that the parents of scientists have higher incomes than even the parents of doctors (Bui, 2014). Whereas I was often interrupted or talked over in lab meetings and felt constantly the need to prove myself, these mostly white male students seemed much more at ease in our program and confident of their abilities. As Anthony Jack has noted, students from privileged high school and family backgrounds are more facile at dealing with authority figures and are also more comfortable advocating for themselves (Jack, 2019, p. 90).

In 1996, California passed Proposition 209 banning Affirmative Action and during the last year of my Ph.D., 1998, California passed Proposition 227 banning bilingual education. How ironic and how unfair that in the United States, an Anglo ecologist working in the tropics who spoke Spanish received praise for being bilingual. This skill was viewed as a sign of sophistication and cultural competence, but if you spoke Spanish and were brown, it was viewed negatively, a sign of second-class citizenship (Hermosillo, 2013). Smarting from the wave of anti-Black and anti-Brown legislation sweeping the United States, my mother went back to teaching English-only classes in California and I moved to Arizona to start my postdoc.

Although I thought that I would not be competitive, I applied for faculty jobs in the second year of my postdoc to familiarize myself with the process. Somewhere I had read that women overprepare compared to men when applying for things, and as a consequence lose out on opportunities. I landed an interview, my first, at the University of California, Irvine (UCI), and the university made me a generous offer. The dean told me over lunch that I was the first woman who had been hired out of the previous 17 faculty searches conducted in the School of Biological Sciences. Later I found out I was also the first Latina science professor hired in the school.

As a beginning assistant professor at UCI, the department assigned me a large lecture course to teach my first term while I was trying to set up my lab. I had limited teaching experience as a graduate student. Ph.D. students in my program only had to help teach three courses to graduate. Back then, graduate student teachers did not routinely receive pedagogy training.

In a single month of teaching, I dropped several pounds over the stress of lecturing in front of hundreds of students. My initial teaching evaluations were dismal. Eager to improve them, I visited the Center for Teaching and Learning for individual feedback. As part of the evaluation, the center sent someone to videotape me giving a lecture in class. After we reviewed the video, the first suggestion I received for making my lectures more compelling was to play music like the theme from the movie *Star Wars* at the start of class. Then the evaluator said my hand movements and facial expressions while lecturing were engaging but that I should not wear beige because it made me “look washed out.”

I left the evaluator’s office wondering if a male professor would have received this kind of “advice” on his teaching. Research shows that women faculty, particularly women of color, are often evaluated on their physical appearance (Mitchell & Martin, 2018; Smith, 1999). Fortunately for my students, I significantly improved my lecturing skills by reading books on pedagogy and observing well-regarded faculty in my department. Even now I find preparing a good lecture—like a good piece of writing—requires time and feedback to get right.

When I think about my roots in my Mexican American community in Colton and San Bernardino, California and the work I currently do teaching science at a university, I cannot help but be deeply bothered that I rarely have Native American, Latino or Black students in my upper-division honors biology classes. This feels unjust to me.

Statewide, 54% of K-12 students in California are Latino (California Department of Education, 2019). Yet over the past 5 years, Latinos comprise only about 6% of the students in my junior- and senior-level courses. This number is strikingly modest since in 2017 the U.S. Department of Education designated UCI a Hispanic Serving Institution (UCI Office of Inclusive Excellence, 2017). To qualify as a Hispanic Serving Institution, at least 25% of enrolled undergraduates need to be Latino.

I wondered whether the proportion of Latino K-12 California public school teachers who taught STEM subjects had changed much since I was a student (I knew of none back then) and whether a lack of role models might be a factor in the small number of Latino students ending up in my college classes. I searched online, and I could not find this information anywhere. So along with Dylan Rainbow, an undergraduate computer science major, I analyzed more than one million 2017–2018 California Department of Education records. We found that among K-12 teachers in California public schools, 20% are Latino, but only 3% are Latino science, math, or computer science teachers, about equally split between men and women (Briscoe, 2019b, 2019c). Overall, around 17% of K-12 teachers in California teach these subjects (Briscoe, 2020). The percent of Latino science, math, and computer science teachers is about the same as the 2.6% of Hispanic faculty in science, math, and engineering across the United States at the time I was applying to graduate school more than 25 years ago (Committee on Equal Opportunities in Science and Engineering, 1998). Most of the current Latino students in California will therefore never have the experience of being taught by a science, math, or computer science teacher of the same race/ethnicity, which is unfortunate, since having visible early role models can reduce demographic gaps in educational achievement (Gershenson et al., 2018). I know this too because of the drive I felt to excel academically as the daughter and granddaughter of Mexican American teachers.

At the graduate and postgraduate level, the Latino students who have come to study in my lab (two Ph.D. students, one visiting Ph.D. student, one postdoc, and one post-baccalaureate student) have except for one, been foreign-exchange students, which suggests to me that as educators, we are missing something in our education of second- and later-generation Latinos like my Mexican American classmates in Colton. The same is true of how we are educating other Black, Indigenous, People of Color (BIPOC) who are underrepresented in Ph.D. programs in ecology and evolutionary biology (NSF & NCSES, 2015; Hampton & Labou, 2017; Graves, 2019; O'Brien et al., 2020).

An encouraging development has been the 2017 founding of a graduate student chapter of the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science by several students in my department, including my own graduate student, Dr. Aide Macias-Muñoz (Fig. 6). This group, composed of both documented and undocumented graduate students from Puerto Rico, Mexico, Guatemala, and the United States, has been active in organizing book readings, workshops, and outreach activities across campus. With regard to her own educational experiences in K-12 public schools Dr. Macias-Muñoz shared with me:



Fig. 6 Dr. Aide Maciaz-Muñoz (left) introducing Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) Distinguished Scientist Award winner, Dr. Adriana Briscoe (right), at the 2018 National Diversity in STEM Conference in San Antonio, Texas. Source: SACNAS, Wikimedia Commons

Growing up in Pico Rivera, most (>90%) of my classmates were Mexican or of other Latinx origins. Even in this environment there was a clear division within Latino students based on who was placed in honors and AP classes. My freshman year I was not placed in honors classes even though I was at the top of my graduating class in middle school and I believe it is because I was an ESL [English as a second language] student. I was lucky that one of my teachers saw my potential and recommended me to AP and honors classes for the following year, otherwise I might not have had the credits to get into a UC school.

With respect to the numbers of faculty in my field, a significant number—perhaps a majority of Latinos that I know—are recent immigrants and from middle- or upper-middle-class families in their countries of origin. While all Latinos in the United States regardless of origin face discrimination because of the tendency in the United States to treat Latinos as being a homogeneous group (even though both racism and colorism exist in Latin America), not all Latino educators are aware of the particular challenges faced by students brought up in U.S. public schools including pervasive racialization (Telles & Ortiz, 2008, p. 131). Nor are all prepared to be advocates like my second-grade Mexican American teacher who intervened and suggested I be placed in a more advanced class with more resources, which contributed to my becoming a scientist.

Just as doing science is expensive so is training K-12 STEM teachers. If a higher proportion of Native American, African American, Latino women and people of color in the United States are to participate in the STEM workforce, government and universities need to provide more resources for: (1) summer camps targeting middle school girls, including access to museums, and (2) paid teaching and research internships and (3) student loan forgiveness for future science and math teachers.

These opportunities should be made open to BIPOC of all ages and class backgrounds but a special effort should be made to extend opportunities to those like my mother and grandmother, who went to community college then to university after a period of work—strong Latinas who decided to give back to their communities by becoming teachers.

Acknowledgments Thanks to Dylan Rainbow for research assistance and to Glenda M. Flores, Lata Murti, Vicki Ruiz, Mark Ocegueda, Carlos Cortés, Mary Woolsey, Sarah Farmer, Ted Fowler, Michael Berns, David Carter, Anna Lorraine Anderson-Lazo, Kate Jackson, my uncle Mario Mejía, and most especially my parents, Peter and Loretta Briscoe, for their invaluable feedback on various drafts of this chapter. This work was supported in part by a National Science Foundation grant IOS-1656260 to the author.

References

- Alvarez, A. (2009). *The power of the zoot: Youth culture and resistance during World War II*. University of California Press.
- Arbuckle, S. (2013). *Igniting the spark: Tech Trek STEM camps for girls*. Woodside Research Consortium. Retrieved January 5, 2019, from <https://www.aauw.org/files/2014/05/2013-Evaluation-of-Tech-Trek-nsa.pdf>
- Briscoe, L. M. (1969, May 10). Who or what is a Chicano? *El Estudiante UMAS* 1(3).
- Briscoe, A. (2019a). Latino STEM teachers, DACA, and the future of teaching. *Latino Rebels*. Retrieved December 28, 2019, from <https://www.latinorebels.com/2019/11/20/latinostemteachersdaca/>
- Briscoe, A. (2019b, September 6). Proving myself: Stories about distrust. *The Story Collider Podcast*. Retrieved December 28, 2019, from <https://www.storycollider.org/stories/2019/9/2/proving-myself-stories-about-fighting-distrust>
- Briscoe, A. (2019c, July 2). Flying colors: Researcher reveals hidden world through the eyes of butterflies. *The Conversation*. Retrieved December 28, 2019, from <https://theconversation.com/flying-colors-researcher-reveals-hidden-world-through-the-eyes-of-butterflies-117371>
- Briscoe, A. (2020). Q & A Adriana Briscoe. *Current Biology*, 30, R1343–R1345.
- Bui. (2014, March 14). *Who had richer parents, doctors or artists?* NPR: Planet Money. Retrieved October 19, 2019, from <https://www.npr.org/sections/money/2014/03/18/289013884/who-had-richer-parents-doctors-or-arists>
- California Academy of Sciences. (2018). Retrieved September 23, 2019, from <https://www.calacademy.org/press/releases/california-academy-of-sciences-welcomes-new-fellows-bestows-annual-awards-3>
- California Department of Education. (2019). Fingertip facts on education in California. *CalEdFacts*. Retrieved September 30, 2019, from <https://www.cde.ca.gov/ds/sd/cb/ceffingertipfacts.asp>
- Capó Crucet, J. (2019). *My time among the whites: Notes from an unfinished education*. St. Martin's Press.
- Committee on Equal Opportunities in Science and Engineering. (1998). *Biennial report to the United States Congress*. <https://www.nsf.gov/pubs/2000/ceose991/ceose991.html>
- Crawford, J. (1998). Language politics in the U.S.A.: The paradox of bilingual education. *Social Justice*, 25, 50–69.
- Ersland, C. (1973, May 27). CSCS reference librarian is well organized in answering questions hard to research. *The Press Democrat*, p. 1B.

- Flores, G. M. (2011). Racialized tokens: Latina teachers negotiating, surviving and thriving in a white woman's profession. *Qualitative Sociology*, 34, 313–335.
- Flores, G. (2017). *Latina teachers: Creating careers and guarding culture*. New York University Press.
- Flores, G. (2019). Pursuing medicina [medicine]: Latina physicians and parental messages on gendered career choices. *Sex Roles*, 81, 59–73.
- Gentry, M., Gray, A., Whiting, G. W., Maeda, Y., & Pereira, N. (2019). Systemic failure: Gifted education in the United States. In *Gifted education research and resource institute*. Purdue University. Retrieved October 22, 2020, from <https://www.education.purdue.edu/geri/new-publications/gifted-education-in-the-united-states/>
- Gershenson, S., Hart, C. M. D., Hyman, J., Lindsay, C. A., & Papageorge, N. W. (2018). *The long-run impacts of same-race teachers*. National Bureau of Economic Research Working Paper Series No. 25254. <https://doi.org/10.3386/w25254>. Retrieved October 23, 2020, from <http://www.nber.org/papers/w25254.pdf>
- Gonzalez, G. G. (1990). *Chicano education in the era of segregation*. Balch Institute Press.
- Graves, J. L. (2019). African Americans in evolutionary science: Where we have been, and what's next. *Evolution: Education and Outreach*, 12, 18. <https://doi.org/10.1186/s12052-019-0110-5>.
- Griswold del Castillo, R. (Ed.). (2008). *World War II and Mexican American civil rights*. University of Texas Press.
- Halstead, B. W., Auerbach, P. S., & Campbell, D. R. (1989). *A colour atlas of dangerous marine animals*. CRC Press.
- Hampton, S. E., & Labou, S. G. (2017). Careers in ecology: A fine-scale investigation of national data from the U.S. survey of doctoral recipients. *Ecosphere*, 8, e02031. <https://doi.org/10.1002/ecs2.2031>.
- Hermosillo, M. (2013). Speaking Spanish is great, but only if you're not Latino. *Mic.com*. Retrieved January 8, 2020, from <https://www.mic.com/articles/69067/speaking-spanish-is-great-but-only-if-you-re-not-latino>
- Jack, A. A. (2019). *The privileged poor: How elite colleges are failing disadvantaged students*. Harvard University Press.
- Jimenez, M. F., Lavery, T. M., Bombaci, S. P., Wilkins, K., Bennett, D. E., & Pejchar, L. (2019). Underrepresented faculty play a disproportionate role in advancing diversity and inclusion. *Nature Ecology and Evolution*, 3, 1030–1033.
- Lareau, A. (2011). *Unequal childhoods: Class, race, and family life* (2nd ed.). University of California Press.
- Leonard, M. (1968, June 20). Is S.B. county missing the boat on ocean age? *San Bernardino County Sun*, p. B3.
- LoVae, P. (1972, May 18). Mrs. Banuelos views educational project. *San Bernardino Sun*, p. B-2.
- May, E. T. (2008). *Homeward bound: American families in the cold war era*. Basic Books.
- McCarthy, S. P. (1967, June 4). Most successful S.B. poverty program fund cut off. *San Bernardino Sun-Telegram*, p. B-3.
- McGee, E. O. (2016). Devalued Black and Latino racial identities: A by-product of STEM college culture? *American Educational Research Journal*, 53, 1626–1662.
- Mitchell, K. M. W., & Martin, J. (2018). Gender bias in student evaluations. *Political Science and Politics*, 51, 648–652.
- Molina, N. (2011). Borders, laborers, and racialized medicalization: Mexican immigration and US public health practices in the 20th century. *American Journal of Public Health*, 101, 1024–1031.
- National Science Foundation, & National Center for Science and Engineering Statistics. (2015). *Science and engineering degrees, by race/ethnicity of recipients: 2002–12*. Detailed statistical tables NSF 15–321, Arlington, VA. <https://www.nsf.gov/statistics/2015/nsf15321/>
- O'Brien, L. T., Bart, H. L., & Garcia, D. M. (2020). Why are there so few ethnic minorities in ecology and evolutionary biology? Challenges to inclusion and the role of sense of belonging. *Social Psychology of Education*, 23, 449–477.

- Ocegueda, M. A. (2017). *Sol y sombra: San Bernardino's Mexican community, 1880–1960*. Dissertation, University of California, Irvine.
- Ong, M. (2005). Body projects of young women of color in physics: Intersections of gender, race, and science. *Social Problems*, 52, 593–617.
- Press Democrat. (1972, May 29). Library association names chairmen. *Press Democrat*, p. 3.
- Press Democrat. (1973, July 1). Move to Colton. *Press Democrat*, p. 5B.
- Rinehart, F. (1986, September 28). A few lucky students chosen for science project. *San Bernardino County Sun*, p. B4.
- Rodriguez, R. (1983). *Hunger of memory: The education of Richard Rodriguez*. Bantam.
- Rosales, S. (2017). *Soldados razos at war: Chicano politics, identity, and masculinity in the U.S. military from World War II to Vietnam*. University of Arizona Press.
- Ruiz, V. L. (2008). *From out of the shadows: Mexican women in twentieth-century America*. Oxford University Press.
- San Bernardino County Sun. (1979, June 1). Bilingual teachers graduate. *San Bernardino County Sun*, p. B-4.
- San Bernardino County Sun. (1988, May 9). Hispanic scholarship. *San Bernardino County Sun*, p. B-2.
- San Bernardino Daily Sun. (1933, October 11). 'Big sisters' soon to sponsor school party for proteges. *San Bernardino Daily Sun*, p. 13.
- San Bernardino Daily Sun. (1934, April 24). List students of first rank. *San Bernardino Daily Sun*, p. 13.
- San Bernardino Daily Sun. (1936, April 18). New officers take charge of P.T.A. work at Roosevelt. *San Bernardino Daily Sun*, p. 13.
- San Bernardino Daily Sun. (1937, June 11). Program will feature four senior talks: Details of Colton High school commencement announcement. *San Bernardino Daily Sun*, p. 17.
- San Bernardino Daily Sun. (1941, May 4). Men urged to report when notice comes. *San Bernardino Daily Sun*, p. 15.
- San Bernardino Daily Sun. (1943a, May 30). Colton men accepted to duty. *San Bernardino Daily Sun*, p. 11.
- San Bernardino Daily Sun. (1943b, December 13). More than 250 air service command workers complete aircraft repair training at depot. *San Bernardino Daily Sun*, Monday, p. 6.
- San Bernardino Daily Sun. (1965, February 28). BA degree conferred on Miss Mejía. *San Bernardino Daily Sun*, p. D5.
- San Bernardino Daily Sun. (1965, June 4). 76 S.B. county students to receive UCR degrees. *San Bernardino Daily Sun*, p. B3.
- San Bernardino Sun. (1967, June 4). News summary: County and Inland Empire. *San Bernardino Sun*, p. A-2.
- San Bernardino Sun. (1970, August 18). School district selected for bicultural-bilingual program. *San Bernardino Sun*, p. B-3.
- San Bernardino Sun. (1971, December 16). Schools superintendent answers Bloomington Chicanos' 'requests'. *San Bernardino Sun*, p. C-2.
- San Bernardino Sun-Telegram. (1966, September 16). Progressive Action League opens lecture series at 7:30 p.m. Tonight. *San Bernardino Sun-Telegram*, Friday, p. B5.
- Smith, P. J. (1999). Teaching the retrenchment generation: When sapphire meets Socrates at the intersection of race, gender, and authority. *William and Mary Journal of Race, Gender, and Social Justice*, 6, Article 3.
- Steele, R. (2008). Violence in Los Angeles: Sleepy Lagoon, the Zoot-Suit Riots, and the liberal response. In R. Griswold del Castillo (Ed.), *World War II and Mexican American civil rights* (pp. 34–48). University of Texas Press.
- Telles, E. E., & Ortiz, V. (2008). *Generations of exclusions: Mexican Americans, assimilation, and race*. Russell Sage Foundation.
- Tuck, R. D. (1946). *Not with the fist: Mexican Americans in a southwest city*. Harcourt, Brace and Company.

- U. S. Federal Census. (1920). *California, San Bernardino, Colton, District 149* [Data file]. <https://www.ancestry.com/interactive/6061/4293834-00860/81942849>
- U.S. Federal Census. (1930a). *California, San Bernardino, Colton, District 0018* [Data file]. https://www.ancestry.com/interactive/6224/4531843_01031/91816896
- U.S. Federal Census. (1930b). *California, San Bernardino, Colton, District 0018* [Data file]. https://www.ancestry.com/interactive/6224/4531843_01031/91816883
- UCI Office of Inclusive Excellence. (2017). Retrieved September 24, 2019, from <https://news.uci.edu/2017/05/22/uci-meets-u-s-department-of-education-eligibility-as-a-hispanic-serving-institution/>
- UCR Office of Institutional Research. (2017, October 26). *Fall headcount enrollment*. Official UCR Enrollment History provided to the author by email.
- Wells, K. (1976, March 28). Mandatory bilingual education proposal develops controversy. *San Bernardino Sun-Telegram*, p. B-1.

Adriana Darielle Mejía Briscoe is a Professor in the Department of Ecology and Evolutionary Biology at the University of California, Irvine. Briscoe received a B.A. in philosophy, a B.S. in biological sciences, and an M.A. in philosophy from Stanford University, and a Ph.D. in biology from Harvard University. She is an elected fellow of the American Association for the Advancement of Science and the California Academy of Sciences and was honored with the Distinguished Scientist Award from the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science, the first woman and third person overall to have been given all three of these awards.