

Latino Leaders Speak

Personal Stories of
Struggle and Triumph

Edited by
Mickey Ibarra & María Pérez-Brown



José Hernández

Astronaut
NASA

March 1, 2010

Raised in a migrant farm working family, José Hernández grew up making the grueling trek with his family from Mexico up through the Central Valley of California, picking strawberries and beets, and to Northern California, where they picked cucumbers, cherries and peaches. As his parents and four siblings moved from town to town, they would live in a two-bedroom shack, sending the kids to the local schools during the week and having the kids join them at work in the fields on weekends.

In spite of having just a third-grade education, his parents understood the importance of school and demanded José and his siblings work just as hard in the classroom as they did in the fields. Hernández considers his father a great motivator and recalls one day when he and his four siblings were especially tired from working. His father asked how they felt and said, “Good, remember this feeling because this is your future if you don’t go to school.”

Hernández was about eight years old when he first saw the astronauts walk on the moon on his grainy black and white television. This image of astronauts floating in slow motion as they walked on the moon inspired the little boy who was holding the antenna to get the best reception possible. That’s when the dream was born. He told his father and mother that that’s what he wanted to do, to be an astronaut!

In 2004, Hernández was accepted into NASA's astronaut candidate class. In 2009, aboard the Space Shuttle Discovery, his dream became a reality.

There are leaders in every aspect of our lives who basically help us along the way, *porque* this journey of becoming an astronaut and going to space was not a journey of one man but a journey of a *familia*, a journey of teachers, a journey of professionals who helped me along the way to achieve a dream. A lot of people always ask, "Okay. How did you become an astronaut? What was the process and how did it happen? *¿Cómo pasó, mexicano del barrio?* You grew up in Stockton, California. I mean, how did you go from there to become an astronaut?"

As most of you know, I come from a typical migrant farm-working family from La Piedad, Michoacán. People ask, "So, what's a typical migrant farm-working family like?" Well, let me just paint the scenery for you. A lot of you are going to be able to resonate with my story because a lot of you have very similar experiences.

What we did was every year around February we would be in La Piedad, Michoacán, and my father would load up the kids, the four of us, in the car with my mom and we would make a two-day trek up to Southern California. We would start off in Ontario and we'd start working, picking strawberries. From there, we would work our way up to the Central Valley, up to Salinas, working *la lechuga y el betabel con el azadón*, hoeing lettuce and sugar beets. Then we would spend the bulk of our time up in Northern California, in Stockton, Modesto and Lodi, where we would pick cucumbers, cherries and peaches. Then we would end the journey with the grapes during the grape season. This would take us to about November.

In November, my parents would say, "Okay. We're going to go back to Mexico. It's *tiempo de las fiestas navideñas*, Christmas season, so it's not worth it to put you guys in school in Mexico. We want you to get three or four months' worth of homework from

the teachers and you take it to La Piedad with you.” Then we would study by ourselves there. Come February or March, that whole process would repeat itself.

You can see how difficult our education process was in the early days. This happened all the way until I was about twelve years old. We would go to three or four different school districts throughout the school year, and we would miss three or four months of school. So what happened to me was that it was tough for me to learn the English language because we were a Spanish-speaking family. Even though I was born in the States, I was speaking Spanish *en la casa, y eso sí en la escuela: español derecho*. It wasn't formal Spanish. I think what made us different from a typical migrant farm-working family was the fact that my parents, in spite of their third-grade education, gave a lot of importance to education. What made them different was that Monday through Friday they always saw to it that we went to school. Wherever we went, three or four different school districts, we enrolled in school. But we were working in the field Saturday and Sunday. While every kid loves summer vacation, you can imagine how we dreaded it, because that meant we were going to be out there seven days a week as opposed to two days a week.

My dad was a master at getting us motivated. Every day after working in the fields, we would get in the car with our crusted Levi's—because in the morning the ground is soggy and wet and you get mud on your Levi's; by the end of the day, it dries and it's caked and baked so it's stiff. You get in the car and you're all dusty and sweaty. Every day before my dad started the car, he would look at us in the back seat and say, “¿Cómo se sienten?” We said we were tired. And he'd say, “Remember this feeling . . . because if you don't go to school, *es lo que van a hacer toda su vida*. This is your future if you don't go to school.” It was a very powerful message that stuck to us.

I think if my mom had gone to college, she would have been a great psychologist because mothers have the ability to put the burden on you, to challenge you. She'd say, “Ay, m'ijo, *ustedes van a*

tener una mucho mejor vida que nosotros y ojalá nos puedan ayudar cuando estén grandes”—You are going to have a better life than us and I hope you will help us when you're older. There they are. Putting the guilt trip on you, right? But the important thing was that she would always talk about college. Whenever we'd go to a nice clean office, she would see *el señor con corbata* and she'd say, “*Mira, así quiero verlos a ustedes, trabajando en una oficina, no en el campo como nosotros*”—That's how I want to see you, working in an office and not in the fields like us. She would sit us at the bench and always talk of when we went to college, when we went to the university. She would never say, “If you go.” She expected us to go, and that set the bit right away. Those were the very powerful messages they gave us.

The other thing that they did, which I think was very different from typical migrant farm-working families, was they sat down with us every day at home while we did the homework in the kitchen. She would give us something to eat and say, “*No se levanten hasta que terminen la tarea*”—Don't get up until you finish your homework. And for first, second and third grade, that worked fine because they could help us with homework. But for the fifth, sixth, seventh grades, *ya ni papás que la entendieran*. They were still smart enough to realize if we finished the homework. I guess my point here is that as parents, because I'm a parent of five kids, we need to spend time with our kids during the homework process. It's not just a matter of telling the kids, “*Oye, m'ijo, finish your homework and let me watch my novela.*” It doesn't suffice for the fathers to go out *con los amigos y tomar unas cervazas*. The whole thing is you've got to engage, you've got to be a family, and you've got to be together.

A lot of times, we put the burden on the public-school system, but you know what, it starts with the family. If the family has started the process, then we can then point to the school system: “Okay, why isn't my kid doing this?” Once you answer the question that you're doing everything at home to make sure your

son or daughter succeeds, then I think we can hold the public-school system accountable. But it starts at home.

The other thing that happened during my education, as we would go up and down California, what I call the “California circuit,” was a visit by my second-grade teacher. It was amazing. It was November and it was time to go back to Mexico. I went to my second-grade teacher—a very young, beautiful and tall *chinita*, fresh off of college—and I told her, “We’re going to go to Mexico. Can I have three or four months’ worth of homework?” She had been through that with my other three siblings, as I was the youngest. I saw her roll her eyes and say, “You know what, José? Tell your parents I’m going to be in your home tonight. I’m going to go visit your house.” I said, “Okay.” Of course, I went running home that day to tell my parents, trying to give them as much notice as possible. We lived about a mile, a mile and a half, from the school. Back then you could walk to school for a mile and a half. Now, we’ll get arrested if we have our child walk a mile to school, right? But back then we would go through tracks and everything as we ran home from the school.

When I got home, I got two different reactions from my parents. The first thing my dad said was “¿Qué hiciste, muchacho? What did you do? What kind of trouble did you get into now?” I said, “No. She’s coming because I told her we were moving to Mexico.” The other reaction was completely opposite. My mother said, “*Va a venir la maestra, vamos a limpiar la casa y a hacer tortillas de harina. Para darle de comer a la maestra*”—We have to clean the house and make tortillas to give the teacher something to eat. You know how mothers are, especially Mexican mothers. They want to be as hospitable as possible and they prepare dinner and everything for the guest.

So, the teacher came and spoke to my parents in her broken Spanish, and my parents answered in their broken English, but they got the message together in a language that my parents could understand. I remember her saying, “*Han de plantar raíces en un lugar, set roots in one place, porque tienen hijos que son muy*

inteligentes y les gusta la escuela. Dénles una chanza para estudiar— give them a chance so they can study.” To my parents’ credit, they took that advice and started making Stockton our home. *Eso sí*, for a migrant farm worker to stay in one place, that’s tough because farm work is not available year-round in one particular place. I remember *mi pobre papá* used to go out in the fog in the middle of winter when it was cold and freezing and he would go and work pruning cherry trees, peach trees and all that, just to make ends meet. It wasn’t an easy life after that, but it was a sacrifice that he made and one we realized that he was making.

Unfortunately, I have to confess that I’m old enough to remember the tail end of the Apollo program. I was about seven or eight years old when the Apollo program was going on. Everybody during that time saw the astronauts on TV as they walked on the moon. We were no different. Our only difference is we had the old TV with integrated speakers, with four legs, you know, *blanca y negra*, and a very fuzzy snowy picture. Sometimes you got that horizontal bar that you would have to go slap the TV so that it stopped.

Satellite didn’t exist at that time, and we couldn’t afford cable, so we had rabbit ear antennas. Whenever something happened that was very important—first of all, we didn’t have a remote, so guess who the remote was: the youngest in the family, yours truly—*cambiar el canal y subirle el volumen y todo eso*. I would do it all. And then, of course, when something important happened, my dad would ask, “*Muchacho, ajusta la antena para verlo mejor*”—to get better reception. Then, what happened when you grabbed the antenna? You got a good ground, right? I’m an electrical engineer. I know that you get a good ground. And so, what did my dad tell me? “Get up there, get up there. *Ahí, quédate*. Now stay there.” So, I’d try to look at the image as I was adjusting the TV to make sure I’d get a glimpse of the astronauts as well. Now I kid with my siblings, I say, “*¿Ya ven?*” It was through osmosis that the signals went through my brain, and that’s how I became an astro-

naut. The astronauts came through me.” That’s why I became an astronaut.

But that’s really and truly when the dream was born. I was about eight years old when I first saw the astronauts walking on the moon. The images I saw . . . you heard them talking and you heard that beep, one-sixth of gravity, so they were kind of like floating, in slow motion, and then I would run outside and see the full moon. I’d run inside and see the astronauts walking on the moon. I’d do the same thing again and again. I’m sure every eight and nine year old at that time was fascinated and wanted to be an astronaut as well. What happened with me was I got hooked on that and said, “You know, I’m going to be an astronaut.” I shared that dream with my parents, and to their credit, they allowed me to dream.

That’s the other thing that we don’t do. We don’t allow our kids to dream. Sometimes we put our own barriers in front of them and don’t allow our kids to dream. My parents were very supportive and said, “You see, *hijo*, just study hard *y lo puedes lograr*.” I’m sure in the back of their minds though: “*Pobrecito*. He doesn’t stand a chance, but let’s not bust his bubble.” I was naïve enough to think that I could get selected. It was not an impossible dream, and I kept working towards that. I kept saying that’s what I’m going to do.

Here’s another thing: the power of mentors, even if you don’t know the mentors and they are just role models. I was a senior in high school getting ready to graduate. I knew I was going to the University of the Pacific to major in engineering because English was not my strongest suit; it was math. Because of the inability to learn English in the early years, I migrated to math, and two plus two is four in any language. So, I knew I was going to major in engineering.

Then I heard some astounding news: Dr. Franklin Chang Díaz got selected as an astronaut. The name Chang *no me pareció*. Chang, ¿*qué onda*? But then I heard “Díaz.” I said, “Wow. That sounds like Hernández: Díaz. I wonder if he’s Latino.” I started looking at his

bio and noticed that he was the first Latino-American astronaut to get selected by NASA. He had a PhD and came from humble beginnings, just like me. But he came from Costa Rica. Then I was jealous. *Pero, envidia de la buena*, a good type of jealousy.

I said, “*Si este vato pudo, ¿por qué yo no?*” If he was able to do it, why can’t I? I mean, he seemed like a homie, like me. That’s when I promised myself that I was going to do everything in my power to get selected as an astronaut. If that meant going to graduate school and getting advanced degrees, that’s what I was going to do. Of course, that’s where I had the blessing of meeting my good friend, Tony Cárdenas.

I went ahead and finished graduate school and started working at Lawrence Livermore National Laboratory. I worked on three major projects there. I worked in the *Star Wars* project, the development of the X-ray laser, which meant electronic equipment being deployed up in space. That allowed me to learn orbital mechanics.

Second was working on a mammography project, developing the first full-field digital mammography project for the early detection of breast cancer. This opened up a whole new field of study in developing cancer detection algorithms for images in digital and imaging processing. We worked with a company in Denver, Colorado, Fischer Imaging, and helped them develop the first full-field digital mammography system.

The third was full circle. I worked with the Russians. I spent two years in Washington at the Department of Energy working on nuclear non-proliferation, where we basically helped the Russians dispose of nuclear material. In that process, I was able to learn a little bit of Russian.

The reason why I did that was that during this whole time, I was applying to NASA for the astronaut program. Every year I would ask myself, “José, what have you done differently to make yourself more attractive, more marketable to NASA to become an astronaut?” If I couldn’t answer that question, I’d say, “You’re slacking, dude. You’ve got to do something different. You’ve got to

improve yourself.” That’s why it wasn’t an accident that I started working on the *Star Wars* project, because that was space-related, medical. The more you know about your body and medicine, the better NASA likes it, because there’s a lot of self-care, self-management, self-medication up in space when you don’t have a doctor.

Then, I worked on the nuclear non-proliferation project because it was during that time that the United States and Russia had signed an agreement to develop an international space station. I put two and two together right away. When this project came up to work with the Russians and learn the Russian language and culture, I jumped on it because I said, “That’s what’s going to make me more attractive to NASA.” I applied for six straight years, and I would always get a formal letter saying, “Hey, don’t call us. We’ll call you.” It wasn’t until the sixth year that I got interviewed.

The way the process works is that more than 4,000 people applied to the NASA program for astronauts. Out of those 4000, they selected 300. They checked their references. Out of those 300, they selected 100 lucky ones to get interviewed for one whole week at NASA. These 100 people took a battery of psychological and physical exams where you get poked and prodded everywhere—those males over 40 know what I’m talking about. Then a committee interviews you. Finally, everybody goes home and waits to hear the results. I sort of got cocky because I was in the final 40. Of course, then I got the news that I didn’t get selected.

The next two years went by for the next selection, and I got interviewed again. Year eight, and the same thing happened: I made the 40 finalists, and *ni mangos*, I didn’t get anything. I was finishing up my two-year rotation here, getting ready to go back to California to Lawrence Livermore Lab, when I got the news that I didn’t get selected in year eight. But I did get the invitation to go work for NASA as a civil servant. But it came with some caveats. They said, “Well, you need to come back. You need to come work for us as an engineer. There are no guarantees that

we'll even interview you again. We just want to have a better look at you; so, we're making it clear that we're not even going to guarantee that we're going to interview you. By the way, you've got to take a pay cut and you've got to move to Houston."

Well, you can imagine how well that went over with my wife. It was like, "Hey, honey, we're not going to have nice weather California. We're going to hot and muggy Houston. By the way, you can't spend more money. You've got to tighten the belt." In all honesty, though, she was actually the one that encouraged me, because I always looked out for the family first. I had thirteen years at Lawrence Livermore Lab, and a nice career going with a nice trajectory, which is why they brought me to the Department of Energy, so I could go back and manage a program. I had to give all that up.

My wife told me something that I would never forget: "*Siempre vas a tener el gusanito*." You're always going to have that little worm inside you that's always going to be asking you, gnawing at you, saying, "What if? What if you didn't take that job? What would have happened?" It was obvious that if I didn't take that job, they weren't going to consider me in the future. That sort of stuck with me. She said, "Don't disqualify yourself. Let them disqualify you. Don't make that decision of not going. Let's go. We'll make ends meet. We're going to be all right in Houston. If you don't like it, then we'll go back to California."

I took that risk in year eight. In the year 2000, we moved the family to Houston with the understanding that there was going to be a selection in 2002. Well, they cancelled that selection and there wasn't another selection until 2004. What started as a two-year experiment was a four-year experiment. I put in four good years there and ended up being the branch chief of the Materials and Processes branch. We actually had the Columbia shuttle accident; because we do non-destructive testing, we do forensics, my group was instrumental in the reconstruction of the accident and finding the root cause. It sort of gave me visibility at the management level and, when the new selections came up in

2004, I was actually selected. It was twelve years after I started applying and three interviews before I finally got selected as a NASA astronaut, in 2004.

Obviously, when you first get selected as an astronaut, you're not eligible for flight assignment because you're just coming off the street. You are an "astronaut candidate" and have to train for two years. It wasn't until 2006 that we graduated and became what we call a card-carrying astronaut eligible for flight assignment.

In 2008 I got my first assignment, which was STS-128 to fly onboard the Discovery; the date for the flight was last year. We trained for about fourteen months as a crew of seven and we actually executed the 128th mission of the space shuttles; ours was Discovery, which was the 32nd mission, and flew from August 28 to September 11. During those fourteen days, we were up in space and went around the Earth 217 times at approximately 17,500 miles an hour, and travelled a total of 5.7 million miles. There are two things I always say about that: 1) I wish there was a Frequent Flyer program for that and 2) for the ladies, I have a lot of mileage, but don't worry about that.

The experience of going up in space is . . . you just cannot put it into words. It's just one of the most awesome feelings in the world. Let me just lay the groundwork for the launch. You dress up in your orange pumpkin pressurized suit, you get strapped into the seat and then there's about three hours of nice, quiet time that you can even take catnaps before the launch counts down to zero. You're down there and you have time to make peace with your Maker, if you will, and start reflecting. One of the best feelings I had while I was sitting there was looking at my partners and thinking, "When I was my son's age, fifteen, I was out picking cucumbers during the summers. Now, I'm here representing the United States as an astronaut. How cool is that?" It truly is a great country, where you can make your dreams a reality.

As the count progresses to zero, you go from dead silence to everything rattling and rolling—a lot of noise. I'm the flight engineer sitting right behind the two pilots. I have the best seat

in the house, but I'm also the busiest during those eight-and-a-half minutes of the most dynamic phase of flight, taking off and thrusting into space. I feel the thrust and *me persigno*, I cross myself. I'm a religious man, and for that millisecond that I feel scared, yes, I do for that millisecond. I say to myself, "What did I get myself into?" But then after that, we're off the ground and see the launch pad to the side and the tower, and our training takes over. It's amazing. I start hawking all the instruments and making sure I'm making the milestones, turning those eight-and-a-half minutes into dynamic flight. I call it the best Disneyland ticket ride ever. We reach space in those eight-and-a-half minutes, and, all of a sudden, we're floating, things are just floating; everything quiets down, and now we're going 17,500 miles an hour around the Earth, which is truly amazing, truly amazing.

We joined with the International Space Station. It took us one day to get close to it and dock. We performed three main objectives: we traded one of our crewmembers, Nicole Stott, a woman engineer, for Tom Kopra, who had been up there for four months. We conducted three space walks. We also transferred seven tons of material and equipment, including exercise equipment for the crew that was going to stay in the International Space Station.

During that dock time, there were seven of us from the shuttle and six from the station; a total of thirteen astronauts up there in a space equal to a five-bedroom home. Thirteen of us representing five different countries. I say six countries, if I include Mexico—I always include a plug for Mexico. We conducted our mission for those fourteen days, undocked, came home and had a flawless landing. We ended up landing at Edwards Air Force Base. Our preference was to land in Florida at the Kennedy Space Center, but the weather didn't allow it, so we went over there. Three hours later, I took the whole crew to a restaurant called Domingo's *para comida mexicana con una cerveza*. They had Mexican food and a beer. Life was good.

A lot of people ask me, “Well, what are you going to do now, José? How can you top that?” Well, I’m going to be moving down here to Houston for a six-month to one-year assignment at NASA headquarters to work out of the Office of Legislative Affairs. I’ll be working with our lawmakers to spread the good word about what NASA does with respect to our mission and objectives.

As you know, President Obama changed the mission objectives of NASA just recently. We’re actually pretty excited about it. A lot of people think that the budget got cut. On the contrary, I think the budget got increased. The International Space Station, which was slated to close in 2015, got extended to 2020. We’re going to be conducting much more scientific research. What did get changed was the constellation program, an Apollo-like architecture with a capsule that was going to take us to the International Space Station and, from there, to the moon. We were going to set up a long-duration base outpost and learn how to live on the moon for long durations in hopes of developing the technology that would eventually allow us to go to Mars. That got scrapped. Instead, what the President is doing is spreading the resources for that program among private companies, so that we can stimulate the technology to get commercialized. These companies can develop their own vehicles, and we would have access to those vehicles. The hope is that things will move a lot faster and be cheaper to develop. So, we’re pretty excited about that.

Finally, I’d like to say, I take my role as a mentor very seriously. I’d like to be the mentor that Franklin Chang Díaz was for me. To close the story with Franklin Chang Díaz: when I got interviewed the third time in 2004, he was on the committee and I was able to meet him for the first time. During the interview, I told him the story of how he inspired me. I certainly do take my role as a mentor very seriously, talking to kids and encouraging them to stay in school. I have a foundation called José Hernández Reaching for the Stars. What we try to do with that foundation is very simple. We’re trying to increase the number of kids going into science,

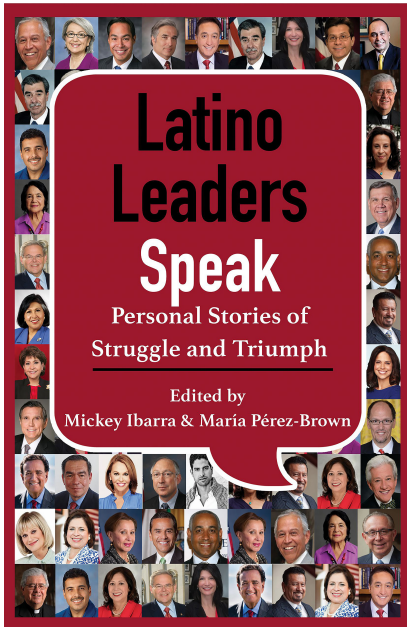
technology, engineering and mathematics (STEM). It behooves us to increase those numbers because if we're going to be number one and stay at the number one position, from a technical perspective, we need to increase the kids going into science and engineering, especially Hispanics and other minorities. If we're going to continue to be competitive in this world, we have to engage all segments of society in getting a good education. That includes our Latino kids. We have to engage them. Specifically, we have to engage them in the STEM areas. We need to get them involved in science, because that's what makes our country great. That's what is able to make us go to the moon and come back; that's what will enable us to go to Mars. We have to keep motivating our kids to move forward and get a good education.

There is basically a simple recipe for success. First of all, you have to have a strong foundation, which starts at home. You have to have a dream. You have to encourage your kids to dream and then convert that dream into a plan. And then, provide a good education for them. Add perseverance, *ganas y corazón*. You put all those ingredients together and "the sky is not the limit, *son las estrellas*."

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Originally presented at the Latino Leaders Luncheon Series in Washington, DC, and other major cities, the personal stories included in this book are all by successful Latinos involved in a variety of occupations, from politics and sports to education and activism. Their words will inspire readers of all ages to follow their dreams and help those less fortunate.

“The resonant message adheres to the quintessentially American formula of hard work and persistence in the land of opportunity.”
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“Our stories are powerful and need to be told.’ That simple yet seminal statement in *Latino Leaders Speak* is precisely what makes this book required reading.”

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Contributing Writer, *NBC Latino*
Washington Editor, *Latino Magazine*

Contributors include former Los Angeles Mayor Antonio Villaraigosa; former general manager of the New York Mets Omar Minaya; Chancellor of the University of Texas System Dr. Francisco G. Cigarroa; former U.S. Attorney General Alberto R. Gonzales; news anchor Maria Elena Salina; and many others.

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