



## How NASA engineer Diana Trujillo's Pursuit of a New Life Led Her to Space

She grew tired of seeing the women in her family sacrifice their ambition for their men, so she vowed to build a life that wouldn't force her to choose. At 17, she immigrated to the US, learned English, and decided to study aerospace engineering. Now at NASA, Diana is at the forefront of missions that could tell us if there is life beyond our planet.

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Alicia Menendez:

Trying to find a better life in a different place. As Latinas, it's a common thread in our lives, in our families' histories, but for Diana Trujillo, a better life in a different place didn't just bring her to the United States, it brought her to space. Diana is an aerospace engineer. She works at NASA, where she's one of the flight directors for NASA's Perseverance rover, which is looking for signs of past life on Mars. Her journey to get here is remarkable. It was fueled by some really powerful women and her deep conviction that Latinas need to be in the room when we learn that there is life beyond this planet.

I want to start with the women in your family, because it seems to me that the entire trajectory of your life is informed by your mom and by the women who raised you. So, would you start by telling me about them?

Diana Trujillo: My mom, my grandma, my great grandma, and in general my grandma's sisters, my cousins, this was a group of women that would get together at my grandma's house, which was a block away from my house, and we would always have el cafecito, in the kitchen. They would talk about their marriage life, what was going on with their husband, what was going on with their kids, and it was funny because all of them were older women and I think that the only kid was me and sometimes my mom's cousin. But to me, they were all my tías. There wasn't like first, second, third tía. There was like my tías.

Watching them talk to each other about the things that they wanted in their lives, the things that they wanted to keep for their own personal development, but at the same time how hard it was for them to make that trade with their significant other, so I think that hearing all of that, but at the same time hearing them try to find a way to get what they wanted made me think two things. One of them was, "Why are you not choosing the thing that you want to do? Why are you not going for that thing? I hear you say I want this, but I can't. I want this, but I can't." But at the same time, talking about how hard their relationships were and coming up with a plan as to how to make it work, even in the midst of everything else that they were going on, gave me that hope that you just don't give up.

Menendez: And a common thread among these women was the fact that as they would begin to succeed, the men would leave.

Trujillo: In some of those cases, that's correct. For my grandma and for my mom. My grandma went up to fifth grade. You know, she found her significant other and got married very early,

pretty much almost as a child, and they worked really hard together to create a company and make it succeed, but then later on as thing evolved, the marriage dissolved for specific reasons internally to them, and at that point when they dissolved, the company kept going but my grandma didn't have any part in the company anymore.

And then the same thing happened with my mom. My dad started from a small town in Colombia, and then moved to the big town where my mom was. She and him make it all happen even through the company of my grandpa, and then later on they get divorced, and again as the marriage dissolved, my mom ended up having way less than my dad.

Menendez: You're 17. You move to Miami. You learn English going to Miami-Dade. You worked as a housekeeper, went to community college. What was propelling you through that time?

Trujillo: I think that what was propelling me all that time were a few things. One of them is when I left Colombia, I thought about this group of women, and I thought two things. One of them was the way that is evolving for you ladies is not a long-term solution. You're kind of in a pendulum, like in a balance where you're like, "I hope that he's okay and I'm okay and he's okay," and then he's not okay anymore, boom. You fall. And so, I could see some of that had already happened to my grandma, at that time had already happened to my mom, and I'm thinking, "Oh, I see the pattern and I don't see any way out of that pattern because I saw you trying to hold it together." I didn't see you like, "Oh, whatever. I'm gonna let him do whatever he wants." No, it was like constant trying to make it work.

And so, if they worked so hard to make it work and they still fell off the balance, I didn't see a way of actually make it work that it wasn't me giving up eventually. The other thing that was in my mind was it's not a long-term solution, what we have here, and nobody's going to help you, so I'm going to do it. It wasn't like, "Oh my God, I'm gonna have to deal with this." No, it was, "None of these guys are gonna come back for you, but I am, and so I'm going out there. I'm gonna go find out how I am going to do it and I'm gonna come back for you because you gave too much to be forgotten and to be erased."

And so, what propelled me here in the U.S. really was... Okay, now I'm in survival mode, like what am I gonna eat? Where am I gonna sleep? Do I have enough money for the rest of this week or even for the next few days? So, I think that when you get down to that level in your life, where the rubber meets the road, there's nothing else. You have nothing to lose. So, if you don't have anything to lose, and at the same time everything to lose, then you might as well just do your best and let's see what happens.

Menendez: You could have, though, like gone to get a degree in business or accounting. I don't know that aerospace engineering is the...

Trujillo: Yeah, so go ahead. Ask me about it.

Menendez: How did you end up studying aerospace engineering?

Trujillo: I didn't know I was smart until I was learning English and it just sucks that something external to you has to happen for you to say, "Oh, I'm actually smart." It's like how many times did somebody tell you you were not good enough for you to think yourself that you're not smart? While I was learning English was when I realized. Somebody else called to me and said, "You know you're actually smart, right? Here are your grades." And I'm like I didn't know what my grades were, I didn't know I was doing well, and then I got into an honors organization. So, your question about when does space come into my life, space

had come into my life when I was a kid in Colombia, and I think I had at some point said... You know, when I got here, it's like, "That's not gonna give me enough money quickly."

But then my realization that I could work hard, that I was very much persistent and had a lot of discipline, and I was smart now, made me realize that I can add an additional goal into my life, which was not just make sure that I can keep the women in my family safe, and send them money, and make sure that they keep going. I also could make them proud. And make them proud in a way that they never expected I could do that, because it's not that they never expected because they thought that I was less. It's just that they never expected because I myself don't even expect it, and even when I tell you my story now, I started like that and now I'm on my second mission on the surface of another planet trying to find out we're alone in the universe. It's like, "What?"

So, to me it was like yes, I want that moment. You know, I remember thinking, "Oh my gosh. I need to do two things. Wouldn't it be awesome if I do something with my life where people learn about what I did? Like they read books about it and realize other things about our universe and learn in school, and then maybe I can come back home and then mention it to my parents, and to my family in general, and say, "You know, you remember all those times that we thought you couldn't do it?" And when I said we, I mean my mom, my grandma, my great grandma, my aunt. "You were wrong." Those were the people that raised me. Those people that we wanted to forget, erase, move on from. Those were the people that actually made this happen.

Menendez: Senior year, a teacher encourages you to apply to the NASA Academy. What was that experience like?

Trujillo: It was petrifying. Throughout my life, and I think that again, all of us go through that. It's like you had this burst of confidence, like, "I can do this." And then all of a sudden, like, "I cannot do this." And so, it's like a roller coaster, and I feel like at the point where I applied to the NASA Academy, I was in my lowest part of my roller coaster. I don't even know why I did the application, to be honest. I think I did it out of respect for the person that had suggested that I would do it. I remember doing it and then right when I was gonna send it, I was like, "No. My English is not good enough. They're gonna read it and they're gonna be like who's this person and what does she think?" And I don't have Ivy League school this, Ivy League school this, and I haven't done research of that, and research of the other.

But it's interesting, because as I'm telling it to you here, is that I realize me as a woman that has put myself into that roller coaster of good enough, not good enough, good enough, not good enough, when you are in the not good enough, you're also like not good enough because you don't have three PhD, five masters, and two bachelors. And it's like, "Who does?" But you still manage to tell yourself that you need them.

Anyways, I didn't apply, and I remember sitting in my apartment with my roommates, telling them, "You know, this professor told us this," because we were all taking the same class, and I did it but I'm not gonna send it. And I remember my roommate is like, "Show me your computer." I'm like, "Yeah, it's here, but it's due like 20 minutes from now, but I already did it, but I don't want to submit it." And we were doing that, like romanticizing myself with the idea that I was gonna apply, so I was actually literally waiting for the cutoff time on the application, and I'm waiting the time. I'm like, "I'm gonna look at the clock, I'm gonna pass it. I'm gonna say, "You know, that was one thing I was gonna do in my life, but I wasn't good enough.""

And I hand the computer to my friend and he's the one that sends the application for me. Like I remember he's like, "Click. I just sent your application." And I'm like, "Wait, what?" He's like, "I just sent your application. It was like deadline in 15, 20 minutes, and you're here with me, telling me how much you wanted it, and you hadn't even done it, so I figured you were not gonna do it." It's like, "Oh my God. Did you read it?" And he's like, "No, but it was complete, right?"

So, anyways, he sends it for me, and it worked out.

Menendez: What did you learn in that time at the Academy? And then after, I mean, you were one of only two members of that class that ends up getting hired at NASA.

Trujillo: I learned what it is like to have a desire, a wanting to do something, regardless of where you're coming from. Because when I got there, I knew my English wasn't that great. I knew that I wasn't from any of those Ivy League schools of those folks that were there. A lot of the people that were in the room had done research of this, and research of that, and they knew a lot about space. I didn't. But I realized that I had a lot of drive. I didn't know about that, but I was the one at 3:00 in the morning, 4:00 in the morning, 5:00 in the morning getting it together, asking the questions, pulling it together. It wasn't about what I knew. It was that desire of wanting to know that made it happen for me.

I think that at the end of that summer, because I had so much desire to want to know, I had met so many people, I had made so many connections, I had learned exactly what the other people's jobs were and what the opportunities were, and I was triangulating where am I going next. And it wasn't like, "Oh, this is great. I'm learning." No. It was like, "It's coming my way." Looking back, it's like I was working while I was in this internship, even though the internship was designed for me to learn, I was using everything that I was learning and strategizing where I was gonna go next. And that makes me think that that is the desire that I had, and it's interesting, because I was seeing people that had super awesome jobs. I never thought like, "Oh, that job is great. How is your day at the office?" It was always like, "How do I get your job? Tell me what you did so I can get your job, and exactly what you did, and what you didn't, what you shouldn't have done, and tell me everything about it, because I want your job."

So, that's kind of how I approached it.

Menendez: It's a form of savvy that is hard to teach, which is you do have to be able to sort of take in that information and assess how someone got from point A to point B, so that you kind of either replicate their journey or figure out how you can accomplish the same thing a different way. How did you navigate the early part of your career at NASA such that you wouldn't end up being a very talented and smart engineer, but someone who I wouldn't be speaking with today?

Trujillo: The reason why I think that I didn't get lost in the organization, either now working at NASA or on my first job, which was to resupply cargo to the space station, is because to me it was why am I doing this for? What's the mission? Does the mission matter? And does the mission matter is a subjective answer, right? But to me, if you ask all the projects that I worked on, it's not the, "Is it a bigger one? Is it the flashy one? Is it the..." No. It was like, "What are we trying to do? Oh, we're trying to find this out." Oh, that sounds awesome. But I'm sure that if the answer was, "Oh, we're trying to do this other thing," it's like, "Uh, I don't think I can do it."

I've always found something bigger than myself that I believe in and it's interesting, because by the goal being bigger than myself, that means that I'm one little grain of salt in all of that ginormous thing that we're trying to do. But at the same time, the mission is so important that you will get 500% of me. So, I will not be one grain of salt. I would just follow it through, right? And so, in every single mission that I worked on is every six months, I'm like, "Next job, next job, next job, next job." And it's not next job because I want to climb the ladder. It's next job because it's like, "Problem solved, let's go to the next thing. What's the thing that is gonna stop us in our tracks and we cannot do the job that we're trying to go for?" That. "Okay. I'm throwing myself at that."

And so, I think that I just found myself in the firefighting mode to push the goal as hard as I could and because of that, looking back, found myself in very, very key moments of every mission that I have worked on, including like the deployment of the helicopter, which I'm sitting on console, being the flight director, and I'm thinking, "Wait, how did I end up here?"

Menendez: Wait, break that down for us. For those of us who are not space nerds, what does that mean?

Trujillo: So, Perseverance has a lot of firsts. Perseverance is a mission that is geared towards finding if we're alone in the universe by trying to figure out if there's any signature, biosignature on the surface of Mars from the past. But that's not the only thing that we're trying to do. We also had a lot of firsts. We had the first instrument that generated oxygen on the surface of Mars, which I ended up helping that activity happen on Mars. Out of coincidence, this is one of those things where it's like we're trying to get through this, and we've been working 25 hours, and it's like, "Okay, but what's the thing that's stopping us? That. I'm gonna go help."

Also has the most complicated mechanical system that we have taken to another planet to capture the sample. And then it has a helicopter. We'd never flown another helicopter on the surface or on any planet whatsoever except Earth. Took a helicopter. During the deployment phase, as we were attempting to deploy the helicopter from the belly of the rover we experienced some issues, so again, it's like, "Okay, I'm gonna throw myself at that." And in all of these cases that I just mentioned, either I had the honor, a tremendous blessing to be in the room either preparing the activity or leading the team doing the activity.

For the helicopter, the helicopter goes on the belly of the rover. Just imagine like a kangaroo and a baby, so it's on the belly of the rover. Four legs come down, but it stays stuck on the rover itself on purpose, because it's getting power, and data, and thermal... We're heating it, right? And then there's a specific day where we cut all of that interconnections in between the rover and the helicopter. When we cut it, it drops, and then we have to autonomously drive, and so you're thinking about like this teeny thing, a standard box, on the bottom of a Mini, that is going to drive autonomously on another planet. You're hoping, and I was like, "Don't drive the wrong way because you will drive over, and by the way, let's make sure that the thing cut correctly, because otherwise you're gonna drag it."

As the flight director, I'm leading the technical team that is looking at direct from Mars to Earth data, so we command, we wait 17 minutes round trip from Mars to Earth, and we watch it, and then we keep asking, "Tell me, tell me, tell me, tell me, tell me, as you're trying to drive." Just to make sure that you're not stuck. If you're stuck, we're gonna have

to turn around and do an anomaly investigation on the fly to make sure that we didn't drag you down in the worst possible way. So, yeah, I am flight director, watching all of this. It was super stressful because you don't know what you're expecting. We're doing the first one ever. Looking back at that is why was I sitting there? I was sitting there because I happened to have been the one in the evening, two nights before, with the team looking at it because I had had enough experience on anomalies and issues that we have seen in the past, and because it doesn't matter how long we've been working, I'm always there trying to figure out how are we gonna push it.

It all comes back to me in my mind, and my culture, and the way that I am, which is fighter. You don't take a step back, you take a step forward. And you know, that survival thing that I feel like a lot of Latinos have of I need to go out there and fight. You go at life and you don't wait for life to come to you. I feel like we run at it and that's why I have been lucky to be in all these places.

Menendez: Heard you say that you wanted to live a life where you could have everything, and everything defined in this case as a family and a career. Is living that dream as you imagined it would be?

Trujillo: Yes. It is. It's interesting because part of the reason why I wanted that, and thank God I have it, too, is I hated it when it was like, "Well, first you're not smart enough. Second, you shouldn't do this. Third, you should just make sure that you don't wrinkle your dress. Sit down there and just look nice and stay there." And it's like, "Oh my God. Okay, I can't be myself."

And then third of all, after you do all of those things and you have acquired and understood all those restrictions, recognize that you will not get what you want. And it's like, "Wait, this feels sour. What are you talking about?" Not only I cannot eat what I want, because I need to look perfect and my weight needs to be this specific weight, and then I need to wear all of this other stuff, you're also telling me that intellectually and emotionally I cannot get what I want? To me, it was like, "Why not?" Why not? What is the thing that's gonna stop me from getting it? It's not gonna be you. It's gonna be me.

And I think that when I turned the tables and I realized you don't get to tell me what I get, I get to choose that, and it continues to be important to me to get it all, because I don't want anybody to tell me, or to tell you, or to tell any young woman or any Latino girl that wants to do something, that she needs to choose. No, she doesn't have to choose. She can do it all. And so, right now, did I imagine it was gonna be everything? It's super funny to me to think that I got it more complicated than what I thought it was going to be from the perspective of I always thought I'm gonna have my kids, my husband, my dog, and I'm gonna have a great job. But it never occurred to me that I was gonna have my kids, my husband, but my husband with a kickass job, equally stressful and up there with me. It never occurred to me that our conversations were gonna be, "Are you taking them to skating while I go land the rover? Or am I taking them to swimming while your rocket goes out?"

And this is literally our conversations. It's like, "When is your engine fire test? Oh, it's this Saturday. Oh, okay, then I will take them to swimming. And when is your..." You know, whatever, your first time that you're gonna do oxygen on Mars is Thursday. Can you cover for me on beam class?

Menendez: It reminds me of in one of the Obama books he talks about calling Michelle Obama, because he had just passed a nuclear deal or something, and she's like, "That's nice. We have ants." Right? Where it's like when domestic runs up against space exploration?

Trujillo: Oh my God. It's awesome. It's awesome. You know, your example, the ants, is amazing, because you're coming up here and then you realize, "Wait. There's things more in life than that right now." Which, in the grand scheme of things, if you say a nuclear deal with ants, not the same thing, one is more important, but it's not. Actually, it's not. Turns out that if you have your family there, if you have your support system, if you have that love that fuels you all the time, then yes, in a way, the ants are more important right now. Because if I don't figure that out, I'm not gonna figure out the nuclear deal. I'm gonna sit down over there, my brain is gonna be somewhere else and not where it needs to.

The day that I left the house for landing day, February 18, I left the house around 8:15 AM. My husband and I, because of COVID, we have to send the pre-made cold food for the kids, and it can't be reusable stuff. It has to be all the stuff you have to trash. So, on the brown bag, we'd been putting their names, and sometimes we make drawings, and it was my husband's day, and I remember when he woke up, I said, "Can you make a lunch box for me, too? Because I don't know what I'm gonna eat." And he did it, and all three, it was a little brown bag with stick figures of all of us, including the dog, and by the way, my mom lives with me, and each one of them had a little message of like, "You're awesome, mommy." And it was one of those things where I grabbed the bag and I thought, "My family is with me. And no matter what's gonna happen, if we crash land, they know their mommy did whatever she could and if it doesn't work, I'm still gonna come back to you guys and I'm still... This is still my circle." You know? And we'll try it again. And we'll give it another shot. Another mission. Maybe this one doesn't work but the next one will.

Menendez: If things don't work out as an engineer, I think you could have a bright future as a motivational speaker.

Trujillo: Thank you.

Menendez: Diana, thank you so much for this time. This was incredible.

Trujillo: Thank you so much for having me.

Menendez: Thanks for listening. *Latina to Latina* is executive produced and owned by Juleyka Lantigua-Williams and me, Alicia Menendez. Paulina Velasco is our senior producer. Our lead producer is Cedric Wilson. Kojin Tashiro is our associate sound designer. Manuela Bedoya is our social media editor and ad ops lead. We love hearing from you. Email us at [hola@latinatolatina.com](mailto:hola@latinatolatina.com), keep sliding into our DMs on Instagram, and tweet at us @LatinaToLatina. Remember to subscribe and follow us on RadioPublic, Apple Podcasts, Google Podcasts, Goodpods, wherever you're listening right now, and know that every time you share the podcast or leave a review, you help us to grow as a community.

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