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"Motivation and Personal Success: The Mentors Speak" featuring Guadalupe Bañales

Armando F. Sanchez Productions

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Motivation and Personal Success: The Mentors Speak

Guadalupe Bañales

Mechanical Engineer at General Motors

Guadalupe Bañales is the first and only one in her family to achieve a Bachelor's Degree. Her parents were never educated past elementary school. She works as a computer-Aided Engineer for team Body Structures. She strives to be an engineer at the forefront of more fuel-efficient vehicle technology at General Motors.

Host: Armando F Sanchez

Link to the webcast interview: http://youtu.be/ZjQN9wi1yT0

Background:

Guadalupe Bañales is the first and only one in her family to achieve a Bachelor s Degree. Her parents were never educated past elementary school.

Despite basic family expectations, she remained a self-motivated student, which placed her in the gifted classes throughout junior and high school. In addition to attending school, she helped her family financially and worked part-time.

The college had always been a foreign idea to her family. Fortunately for her, her vision changed while working in the fast-food industry, where she interacted with engineers that had been customers. Bañales reached out to them for advice. She took their advice by attending community college.

She started exploring different career options. Ultimately, determining which career to pursue was aided by mechanical problems she experienced with her first car. Her father had a good understanding of cars and guided her in fixing their many issues. Guadalupe enjoyed car repair and wanted to understand why car companies designed different components a certain way. This spark of curiosity and the engineers' advice pointed her toward Mechanical Engineering.

Guadalupe had been involved in community groups that took steps towards improving air quality. Living in Wilmington, California, near the port of Los Angeles and its refineries, She witnessed firsthand how much the air pollution from the port trucks and other vehicles affected the air quality and people s health.

Bañales transferred to the California State University of Los Angeles to complete her Bachelor's degree. On-campus she joined the EcoCAR 2 project. She held leadership positions in the Mechanical sub-team and gained valuable team-building skills and hybrid integration vehicle knowledge. Guadalupe also gained valuable design skills that helped her earn two internships at the NASA Jet Propulsion Laboratory.

During her internships, she worked with an Astrophysicist from Caltech (California Institute of Technology) in developing a new ground telescope technology concept. She helped problem-solve Deep Space Network Antenna issues.

Despite having to help support her family and facing many personal challenges throughout college, she obtained her Mechanical Engineering Bachelor's Degree and established a career within General Motors in Detroit.

Guadalupe is currently a Computer-Aided Engineer for team Body Structures. She strives to be an engineer at the forefront of more fuel-efficient vehicle technology.

Interview:

Armando F Sanchez: As we're usually, we are very honored to have our wonderful guests. They're very busy, yet they're here today to give us an insight into their lives, especially as a role model for Latinas and women worldwide who dream of being space scientists and space engineers and going into the world of engineering and exploring all its options. And today, I'm just very, very happy. I'm just very thrilled to have Guadalupe Bañales in our program.

Hola Lupe, how are you doing?

Guadalupe Bañales: I am delighted to be here to share my story.

Sanchez: Thank you, I'm in Los Angeles, and you are in Detroit. How does it feel to be a Southern California girl in Detroit right now?

Bañales: Not bad because we don’t have enough water here. That's the one thing. We have that at least by the California sun and the beaches.

Sanchez: Are there any Mexican restaurants out there?

Bañales: We have a Mexican town in Detroit. And there are a few good restaurants, and I'm just like amazed that comes close to my mom's food, and we've been hunting for him like me my fiancee we've been looking for all the Mexican food and, and there are more Mexican people than I expected out here. I was surprised. At work, I hear Spanish and people from all over the world and different kinds of dialects from Peru or Argentina. That's pretty cool. There are Latinos out here.

Sanchez: Well, they say that the second-largest concentration is in Chicago, and that's not that far away from Detroit or something like that.

Guadalupe: Oh, yes. I got an aunt over there. Not too far away.

Sanchez: Oh, that's cool. That's cool. It's about a five-hour drive from there, and by the way, I love your rainbow (wall painting) in the background.

Bañales: That has to be pretty. I'm just too lazy to paint over it.

Sanchez: You must also be busy. Let's start with your story. I’m trying to get back and read your account here. You were an intern at the Jet Propulsion Laboratory (JPL) in NASA in Pasadena, California. You were raised here in Southern California. And then now you're working for General Motors in Detroit. We're going to start to go from your past to your present and tell us how you achieved that remarkable feat, but let me take you back. I like your story but tell us about you and your experience getting your Bachelor’s degree.

Bañales: Oh, it was a long struggle. I didn't take the easy route. I took the long kind of complicated route. Just because I didn't understand the concept of college well. I didn't understand what a major meant or what is it called? What were my options for college as well? So for me, it was a struggle to figure out how do I get through this because I knew I kept hearing, “Get your bachelor's degree, and you're going to be able to get a career out of it.” And my parents didn't finish elementary school, so that they couldn't guide me at all. And so what I ended up just doing was talking to people like when I

worked at a fast-food restaurant, a man used to come there and eat and then I would always ask them questions and like, what, what do you do and how did you get there? And just learning from them. Tell me what it's like if you're interested in getting a career, go to college. So actually, when I started college, I didn't know that I needed to pick a major, so I ended up taking a bunch of random classes and they kept telling me I had enough time, and I thought, “Okay, I'm young.” I have enough time. And before I know it, I'm thinking, all right, four years have passed, and I'm like, wait, are we supposed to have a career out of this? So I started kind of, finally figured out I need to have a major, and then you have a goal to transfer to the university because that's where I'm going to get my degree. And the way I finally decided on a major was when just things that were going on around, I was being involved with some of the groups were trying to get cleaner air and pass like policies to have kind of at the Port of Los Angeles, get greener cars trucks in the city. And so that kind of motivated me to think about more green energy like hybrid technology. And then my first car was breaking down all the time, and it was very frustrating because I remember that my savings were all going into that car. But the good thing about it was that I got such a good education and was able to bond with my dad while learning about repairing cars. And from that experience, I was constantly asking all these questions. I would ask why it is this way? Why is it that way? My dad couldn't answer those questions.

And so, for me, it took me probably almost eight years to get my bachelor's degree. So I took a longer way. So we were like, what is it called when? When does one get their Bachelor’s degree? They get theirs in four years, and I'm thinking, “Oh my God, this is like a lifetime.” I want to tell people out there that sometimes your path is not the same as the traditional way, but don't give up along the way. Because you just got to make sure you stay on the path and keep your mind focused, and you'll be able to do it.

Sanchez: I have some questions about some of the things you mentioned in your past. You must have been good in math because you entered this scientific field, and it's constant. It's math. I mean, you must have been good at it.

Bañales: Yes, I was pretty good. I struggled with some subjects because they just didn't come naturally**.** So I had to study a little bit longer than other people because sometimes, I don't know, maybe I have ADD or something in the lectures like, I would sit there and they would the professor would be talking, and I couldn't get what they're trying to get to explain. But I would go home, look at the book and study and do examples, and then get it. So it took a little bit of extra work for me. So it doesn't come naturally. Yet, it doesn't mean that you can't get it.

Sanchez: And the idea of studying math in your high school, I don't know what high school you went to. So you could mention it. What was the attitude of your teachers of your surrounding peers about you being in the math class and doing well?

Bañales: Well, this is interesting. I did poorly in high school. I would leave school sometimes because I was involved in many other groups like feeding the homeless, and I would be part of different events. I graduated or left my school for an independent study program because I wanted to graduate early. And it enabled me to leave school early and get my diploma. And I was able to focus more on social work because I thought that was the path I wanted to take. And when I found that just doing social work was kind of, I couldn't help others if I couldn't help myself first. And so then that's when I was like, I need to make a career because I could be out here trying to advocate these things, but sometimes money talks, and you don't have the finances to fund certain things, and you can't help others. So I was not like a typical student.

Sanchez: No, you're not. When you said you were taking advice from the customers you were serving, what did they share that specifically turned you on to the idea of engineering?

When did you think, “You know, this is something I want to look at?”

Bañales: I did like math a lot even though I didn't participate in class, and it came a lot more naturally, I think, and in that sense, there were certain subjects like trigonometry sometimes, even though, how do I explain it? It is something that I enjoy.

Sanchez: And was it the mystery of trying to figure it out to you? Did you think like a detective and have this problem and try to work it out?

Bañales: Yes. Additionally, I don't know if you've ever worked on a problem where you're so focused on it and just keep working and working at it. Suddenly, the time goes by, and you finally arrive at the solution, and you're just realizing “Eureka!” You think, “Oh my God, I solved it.” It's a good feeling. You get into this mental sphere of being able to solve something. I liked that feeling. Sometimes I love the probe of the problems that took me pages to solve just because I got so involved in it. I did enjoy that part. When I talked to the customers, they told me about what they were doing at work. They shared that they were building planes, which I found very interesting. I was asking, “What do you like? What are you supposed to do to get there to that point? What's your background?” I slowly started focusing on my community college program and building my strength in these areas.

Sanchez: That’s fantastic. How did you decide to go to work at the Jet Propulsion Laboratory?

Bañales: Well, I love space exploration as well. One of my favorite movies is Contact. I know they were watching with Jodie Foster. And that movie fascinated me and the idea of possible life out there or humans being able to explore more and even extending to other planets. And so when I heard about JPL, it was part of NASA and the type of work that they did. I thought that this was something I might be interested in doing as a career. I thought it would be pretty cool to work on a spaceship taking people up to explore the moon or something similar. I was fortunate with the Jet Propulsion Laboratory because of the way I was able to get an internship there. I went to a Woman in Engineering event that they held there. They invited many different schools. I was very shy, and they had some of their HR people at the event. They were talking to people and other students that came to visit. I was very bold that day, and I had my resume with me. I came all dressed up. I brought my resume and a nice little folder, and I went up to one of the HR ladies after everybody was gone. I asked her, “Would you look at my resume and give me advice?” I asked,” Tell me what it takes to become an engineer here?” She looked at my resume. She just smiled, and she said, “Okay, I'll get back to you.” I turned around to leave and thought that my resume would end up in the trash. I ended up going home, and then about a few days later, this same lady contacted me and offered me some advice about my resume. She said she liked it. She also said, “Okay, you need just to fix this grammar here and elaborate more on this.”.I listened and followed her advice. And added, “Send me your updated resume when you fix it so that I can take another look at it.” Once I made the changes, I sent it to her. Then a few weeks later, I got a phone call and informed that one of the engineers at JPL said that he wanted to have me in his department as his intern. And I was just in shock. I kept thinking, “Wait, what just happened?” I thought, “What do I have to do?”

I remembered that I had not completed an official application, but they used that to consider me since he found my resume. I guess all the work I had, some of it involved being part of the Solar Eagle car I worked on at California State University Los Angeles. They exposed me to real-world experiences. We worked with tools like CAD software, which was very useful for them. And kind of rare to have

somebody at the undergraduate level know that software. So that's how I was able to work for that position.

I participated in a new concept for a future telescope in Chile for my first internship. So that was fun because I was able to work with astrophysicists from Caltech. And then, I was able to work with other engineers and learn more about how GPS (Global Positioning System) works, and that's when I met Dr. Alfonso Feria because he sat in the office across from me. I remember that I kept hearing him speaking Spanish every so often when I was sitting at my desk, and I realized that another Latino must be working there. A few days before ending my internship, I went up to him and asked him if he was Mexican by chance. He informed me that he was from Mexico City.

We started to talk. We started chit-chatting and became good friends. He was just kind, and he took on a mentor role for me. He gave me a great deal of good advice and informed me on how to navigate my career. This was a significant turning point in my life.

He was an excellent mentor, and I also thank the Latino Association Group at JPL, among other area forums. They are just an outstanding group. I can't say enough great things about them. Now that I think about it, I quickly jumped a little bit, and I missed explaining the Cal State LA eco-car idea; if I can back up a little bit and go back to that.

Sanchez: How did you end up selecting California State University, Los Angeles, and then the idea of joining that particular engineering group?

Bañales: Well, I wanted to be closer to home because, at the time, I should when I went to the California University of Merced, I had just started a relationship with my fiancé, and he was still in Los Angeles. We both wanted to be together, and he's also an engineer. We applied to the same university in Los Angeles, and I said, if I got accepted, it was meant to prevent me from coming back to the University of California Merced. Because I applied for a summer session, I thought it would be challenging when I applied to transfer colleges again. So but I was fortunate. I got accepted, so it's meant to be. I'm going back to Los Angeles. I miss my family. Additionally, I knew that California State University Los Angeles (CSULA) had been an established program and that they had a network with NASA. Their program also was affiliated with SAE (The Society of Automotive Engineering) groups that worked as teams. I decided that that was where I wanted to be. I wanted to be in an established school and work on different engineering projects. I had looked online for what would make me a desirable candidate in the job market, and this program kept popping up.

Given what I have learned, my advice is, “Make sure you become part of different groups that are part of engineering projects, and make sure you get internships.” Don't just hide behind the books. Focus on your studies, be part of an active network and get these hands-on experiences. So, for me, CSULA was perfect for that.

Sanchez: you mentioned now about connecting the dots. So your experience in high school, working on social groups and helping those groups that allow and help you acquire those skills and transferred over when you were in engineering?

Bañales: Is this case? A little bit. I mean, I'm still kind of shy every so often. But every once in a while, I get this feeling inside and remind myself that I had to be brave. Then you have to go for it when you want something. That was one of the things that I had liked at Cal State LA when I applied for that program for Eagle Solar Car Program. It was the first class that I enrolled in at Cal State LA. My professor announced this new program regarding hybrid vehicles. He was recruiting, so you had to apply to it. I decided to visit the campus Career Center and ask them to help me work on my resume. I

had them look at my resume. I submitted it, and two days later, I found out I was on the team. It was a surprise to me to also learn that I would be the project leader. I accepted, but I did think that it was kind of being thrown into the fire.

Sanchez: Well, so much for you bringing all this experience with you. You're the team leader, yet you haven't even seen the car.

Bañales: Well, I wasn't the lead for the overall group. But I was the leader of the mechanical team. And I thought to myself, “Oh great! This is going to be just great.” I was being sarcastic. I kept thinking, “This will be terrible for the team.” I still didn't have enough self-confidence. I thought it would be one of the people that was going to be directed others to “go do this, and now go work on that.” But it was not going to be that way. I was now responsible for putting together the project plan for our team and making sure when they were doing things. I did it but all the while thinking, “Oh, my God, I can't believe I'm doing this!”

Sanchez: That’s hilarious. To think that you believed that you would slowly go and work up the ladder. And next thing you know, “BAM,” and suddenly, here you are.

Bañales: And it was a struggle for a team because, at first, our school didn't want to support us because it was a new project. So there were eight of us, and we were constantly trying to get more funding. So we were constantly, what is it called? We felt like the underdogs in a sense. Many other schools were established in the program as they had done in the program's previous versions. Some programs already had 40 to 50 students committed to the project. We were struggling. Sometimes we would be at the lab until five in the morning writing papers. We were dedicated to the project throughout that time, and I finally got an offer from General Motors to work there. At that moment, I felt that all our efforts had paid off. I recall that we wanted to complain and ask, “Why am I working so hard?” It ends up paying off, and even though it's not right away, it happened because stick it out.

Sanchez: Okay, so I'm trying to put some dates together. You were in the eco-car project at California State University Los Angeles (CSULA). Then somewhere in there, you applied to go to Jet Propulsion Laboratory for the summertime internships.

Bañales: Yes.

Sanchez: So you were in both programs simultaneously?

Bañales: Yes. And then I was also working at Trader Joe's as well. I have this terrible habit of probably putting too much on my plate. But even right now that I'm working, I sometimes feel restless because I feel like I need more stuff on my plate. So right now, I'm in the process of applying for my Master's. Just because you constantly don't know you have that drive and you realize that your time isn't filled up.

You don't want to lose contact with people because you need to be busy. You have many ideas; you realize all this potential inside of you.

Sanchez: When you were in the program at Cal State LA, you were on this team. Did you have other women in the group? How did that impact you as a dedicated Latina in the engineering program?

Bañales: There weren't as many, and I found it hard sometimes, especially in engineering. I noticed there in my classes that there weren't that many females, and it's not that there's not good sometimes. It isn't a challenging major, and it's also not easy. I don't think there was a good support group for females. I know I struggled with it sometimes when I felt out of place because of some jokes about us

being around. You didn't have other females to relate to, and I think sometimes you even felt like you were competing against each other. Even if you don't want to, you would feel like, well, there's another female. And I don't know, I felt like an unhealthy working environment. I could see how some females didn't want to be involved in the projects, and if they tried to join, I don't know what would discourage them. As for me, I stayed through it because I had earned their respect and was able to work with my colleagues. I wondered how much preparation you had to be in a male-dominated environment.

Sanchez: What helped you was having worked along with your father?

Bañales: Oh, it was great once I was older. When I was little, I would always try to go with my dad and get him to let me help him, but he would always push me away. And he'd say, “Shoo, go over there; you're bothering me.” Then once I was older and a little bit more rebellious in a sense to him, I’d say, “No, I'm not going away!” I wanted to learn and noticed my dad's personality change from someone having that “machismo” to being more appreciative. He started seeing and saying, “You're picking up stuff fast.” And he started noticing that I was doing things contrary to his belief that no women should be doing specific roles in the household. I noticed that between him and me, our bond has become a lot greater since I went into engineering and followed the sense with his first footsteps by learning more about cars. It wasn't easy, trust me.

Sanchez: I want to ask you. I've been asking myself if I should ask, but I decided to ask you and throw it in there. You mentioned that you had this car and were having much trouble with it. Was it a General Motors car?

Bañales: No.

Sanchez: Let's say I couldn't let that one go. But how did your family respond to the idea that you were going up to the University of California Merced?

Bañales: They weren’t sad; they were happy for me. At first, they weren't sure what I was doing. They just knew that I would disappear for part of the day and shared when others asked, “Oh, she’s still at school doing something.” And then, later on, they started to understand what I was doing when I received my internship at NASA. My mom started looking up NASA. I remember her words, “Oh my God, my God. She is working in NASA.” She wanted all our family in Mexico to know. They saw that I was working on items for the Mars Lander.

Sanchez: What’s the connection between learning about cars and being in exploratory spacecraft? It's not like it's going to crash toward another spaceship. So at first, I couldn't see the connection. But it sounds to me the idea was that you're just a mechanical engineer. So it gives you exposure to many areas.

Bañales: Yes, I love both areas. I could quit GM today and work at JPL. I would be happy. Is it something that when I was there, I felt pleased. I loved the amount of knowledge that was going around. But I also do like being at GM. The more work here, the more I'm fascinated by how the vehicle development process works and all the new, great technologies that we're coming out with in the future, and how we're trying to reduce emissions. So it's, I would be happy in both spheres.

Sanchez: Wow, that's wonderful. Do you see yourself as a career long-term career at General Motors, and granted, no one knows the future, but it is a general question?

Bañales: It has possible at first. I wasn't sure because I was coming from California to Michigan. My family is in California. I'm coming out here, and I realize that I didn't know anybody, plus it was a whole new environment. I wasn't sure what to expect working in the auto industry. But the more I'm

here, the more I'm learning about it; there are many friendly people here. You create your new communities and your new friends out here. We have a women's group here that we meet every other Wednesday for dinner, and we talk about what goes on in our lives. And that's a terrific support group that I wish I also had in college. But I see that GM is bringing in all these new people because a lot of the old knowledge is about to retire. And so they're trying to groom the new people to take on these roles that will be left when people plan to retire.

Sanchez: And there is much old knowledge retiring very quickly. Isn't the top Administration of General Motors a female?

Bañales: Yes, I got to meet her once. She was nice,

Sanchez: Did she come up through the engineering or the financial side? I don't know her background.

Bañales: Yes, I understand that she came up through the electrical engineering side. And then later on, after a few years, the company saw great potential in her, and they invested in her to get her MBA. So she earned her MBA from Stanford, I believe. That's one good thing about GM, they see potential in you, and they'll invest in you. They'll pay for your education; the program I'm doing for my Master's will pay for it. So it's great because I don't have to pay then $50,000 out of my pocket.

Sanchez: What college are you planning to attend for your Master's?

Bañales: The University of Michigan.

Sanchez: Okay, so you're going to have to be cheering for the Spartans? (correction: the Wolverine)

Bañales: I guess. Oh, I don't know. They're Spartans, I think, or something else? I don't know.

Sanchez: What do you say to women, you know, about what they are thinking in high school or even middle school? What if they think, "I believe I like math, or I think I want to use math for a career." What's your advice to them?

Bañales: I guess to make sure you invest in your time in those classes if you like them and don't say, "I'm going to do my homework later!" Go out there and constantly do your homework. You will get the best grades you can in those classes. Start searching through Google and explore as to what are the different careers that involve math. Once you do that, you'll notice that many great jobs are associated with what you're studying in class. At first, you might be looking at it and asking, "Well, what do I care? What's the meaning of X in this equation?" Yet the more you work to understand and try to do work-related problems, then you will eventually understand. Keep at it, and you will see the connection to the real world. You learn how to be able to solve problems. I would encourage them to keep trying to find the connections between math in the real world.

Sanchez: Can you give an example of something that may be in high school where you are doing algebra and trigonometry and related mathematical fields and search for how I benefit in the real world by learning and using them?

Bañales: Using an example of high school math? One personal experience, given the math I learned in high school. I took trigonometry. It was what to use at JPL to calculate certain angles for the telescope. And so, what would be a simplified version? I can't come up with one right now.

Sanchez: I know it's a bit hard. But yet, the idea Is that what you're sharing is that it is essential to have both and not just one without the other or the strength in each other if they're able to be put together.

Bañales: Yes, and I think some people go into theoretical math, which is like way out there. That's what you're in to go for it. But for me, I like more real-world math that I could apply to like, the speed of the vehicle and how much force it would take if you were to hit another car.

Sanchez: Being somewhat specific, but if you can start to give me a little bit of background in your current position, are you in the crash, structural part of the car or development, or more into the green portion of it? What section do you work for right now?

Bañales: I am currently working on body structures. So coming, it's kind of safety. So, what I currently work on is making sure that the body and the frames are strong enough to be able to specific loads on the vehicle and torsional (condition of being twisted and turned), what is also known as loads on the car, to make sure that the car is stiff enough so that the ride and handling are great. And you know, people, you hit that speed bump, you don’t, you're not going to feel it. But there are a bunch of different loads that I work on. I'm not sure how much I could share about all this. (sharing proprietary information).

Sanchez: No, I don't need specifics, but I'm just saying you're in that area. So do you find yourself constantly in a room sort of working with other engineers up on the boards, or are you working in the field looking at the cars as they're being tested?

Bañales: A little bit of there's a lot of it; most of the time I'm spending on the computer modeling, setting up the model with the different loads, and running the analysis. And then does any of my research along with engineers in the program team, and we discuss the results if they're not favorable. We hope we'll test and try to figure out solutions. And what is it called? If they're favorable, then you look workable and hopefully, what you analyze on the computer comes out good because they also test the vehicles. So you'll have your laptop testing your simulations, but then they test the car to make sure that what you said was going to come out is true. Because there's only there's a particular disparity that just a small one between like a computer and the real world.

Sanchez: Wow. I could go on for days asking you questions about this. I love the aerodynamic side. So you know I have a little bit of background in that. I'm curious about this, especially when there are so many different kinds of cars and there are so many conditions under so many very markets, East Coast west coast, different climates. So it's something that is not easy to figure out. I can. I'll take that into account as well.

Bañales: Yes. And then, I'm currently part of this rotation program at General Motors. And so which is great, because, for a lot of the new engineers, they don't want you to feel like you're stuck. They want you to feel exposed to many different areas before committing somewhere. So I have the opportunity to rotate into a different position. My next appointment is going to be in hybrid vehicles. So we're only going to be able to help select the architectures for the hybrid cars. So I'm looking forward to that. That'll be sometime around February. If all goes as planned.

Sanchez: Being that General Motors Company is worldwide. Is all the work always done in Detroit, and would you see having to go to different countries for work in your future?

Bañales: My work, that one that I'm currently doing, is in North America, and that is enough for me. I know of my friends that you have to travel a little bit to different plants within the US, or they do have

opportunities for you to do positions outside of the United States. So you could work in Mexico. You could work in South Korea. I think they have plants in China. So you get an opportunity to travel to different parts of the world. And usually, they recommend you try to do one of these positions if you want to move on to the company.

Sanchez: Yes, it's a global company, and it's just going to get larger. There's no way around that. It sounds like you're thrilled that even though it took you eight years to get your Bachelor's degree, you're glad you did it, despite all the work you did.

Bañales: Yes, it wasn't an easy route. But I'm so happy. I remember when I think back and realize, "Finally, I got it."

And now, one of the things that I would do for a long time was I had a journal, and I would set up my goals. So I would set my goals for the next three years and the following five years and then revisit them. I think it's healthy for you to have something that you're striving for and that reminder there, and so like I was telling my fiancee, "Okay, I already accomplished all these goals that I set five years ago, now what do I do? What am I? What are my next goals?" Now it's buying a house and other goals that I want to accomplish.

Sanchez: That's outstanding. I applaud your work. As you said, it was not easy. I can only imagine how many nights you stayed up. Doing your math and trying to break your head, how often did you just want to throw the pencil on the other side of the room. It says enough is enough. Why am I doing this?

Bañales: It's hard work, the physics and some of the strength of materials classes you're taking. They're very involved. The homework and support work is hard.

Sanchez: Where can our readers and viewers follow you in your developments? Do you maintain a social media page?

Bañales: You can follow my LinkedIn, and you can email me. I don't know about my Facebook because I think I have it on private, so I don't know if people can see my information there. There's nothing personal on there. There are just a lot of posts ad pictures of cats.

Sanchez: But that's cool. I want you to know that I applaud your success. Thank you for taking the time and sharing with women. You've given me so many pearls of wisdom for any woman who wants to get into the engineering world. I'm trying to pull one more out of you. Would you like to share one more point of interest with our readers and viewers?

Bañales: If they're trying to pursue their dreams, and this even gives me certain circumstances, kind of try to instead of looking at yourself as the victim or think, "Well, I didn't have these parents that could pay for this or pay for that or that they didn't push me enough." Thus, take responsibility and initiative to change your circumstances around and be able to do your homework. If you don't have money for books, go to the library. There are a lot of free resources out there. Look for mentors. I was fortunate to have people that wanted to share their stories with me. They tried to give me advice, like Dr. Alfonso Feria at JPL, plus several of my professors who have the power to influence you to change your life around. Yes, there were times when I was only eating a cup of noodles. I kept asking, "What else can you do besides serving in restaurants? You know, you just have to fight through it. And don't give up because definitely, it's worth it once you get that degree and you will have your offer for the job. It pays off because you're feeling like, "Wow, I did this!"

Sanchez: It didn't come from luck. It came from challenging work.

Bañales: It was hard work, and also being a good person like making sure that when you are talking to other people being polite as well, you don't want to what is it called push people away. You want to make friends and network and be honest with them.

If I start reviewing my notes,

Sanchez: It also sounds like you were willing to ask people for their help.

Bañales: Yes! I was willing to ask them, especially those I saw doing well. I know I have this one friend. I know she's watching. Alejandra and I grew up together in the same neighborhood, and I remember she came up with a very tough life. She had her problems in her home. And now she's a very successful physiologist; she studies diseases and their effects on the body. She received the opportunity to present in Africa. She is very successful. She would get many awards when we were in school and did well. She would turn to me and ask, “Why don't you do it?” You know, I would ask her for advice. So don't be afraid to ask somebody that you see they're doing well. You know what motivates you. It’s okay to look up to somebody and ask for their advice.

Sanchez: That’s true if that's the advice not commonly given out to individuals. Don't be afraid to ask your peers.

Bañales: And be able to ask persons that are doing better than you and ask them, “How did you get there? Can you please help me, and how can I assist you?”

Sanchez: Good advice! Well, we've kept you already long enough. And I wanted to thank you again for your valuable time. I wish you continued success with every company you're in. And I think they're also very fortunate to have you because you seem like you do things out of passion, not work. So that's something I've seen through you. We've had this remarkable dialogue.

Ladies and gentlemen, we've been talking to Guadalupe Bañales, and we wish her continued success. Her family for supporting her and Dr. Alfonso Feria and the Latino group at the Jet Propulsion Laboratory and NASA helped us put this together. They kept telling me you got to talk to her. You got to talk to her. I said, then let's do it.

Bañales: I am very honored, and thank you so much for having me. Thank you.

Sanchez: And we'll continue to follow you and your successes in the future. And with that, we say adios and thank you, family, for all their support because I know that they also struggled to support you through the tough times.

Bañales: Yes! They were there to listen to me vent. Definitely!

Sanchez: Okay. Take care of yourself, and we will follow you and your successes and take care.

Ladies and gentlemen, I'm Armando F. Sanchez. I've been your host. I'm also the CEO producer of Armando F. Sanchez Productions, and it's just a thrill to do the shows because I get to meet all these wonderful individuals.

You can contact me at afsanchez66@gmail.com and find me on Facebook or LinkedIn under Armando F Sanchez.

Thank you, and look at us.