



Meet Another NASA “Hidden Figure”: Cynthia Vernón, PhD: Mathematician, Microbiologist, and NASA Trailblazer

Cynthia Vernón grew up in the segregated South of New Orleans, Louisiana. In the 1960s, after graduating from Xavier University, she applied for a job at NASA’s Data Processing Center in Slidell. She became the first Black employee driving programming for Chrysler’s data engineers. She’d never seen a mainframe computer before, but she studied the manual, just like her colleagues in the Academy Award-winning film, “Hidden Figures.” What’s most astonishing about Vernón’s accomplishment is that her family didn’t know about her trailblazing past until recently. Vernón speaks candidly about

her amazing journey and what is owed to those who weren’t afforded the same opportunities. Reported by Juleyka Lantigua.

Pamela Kirkland:

I am Pamela Kirkland, a reporter and producer. The conversation around reparations can seem both overwhelming and contradictory. On one hand, it's hard to imagine how our country could ever fully atone for the centuries of injustice and atrocities committed against Black and brown citizens. On the other hand, there's the belief that reparations are not only achievable, but essential to healing and moving forward. What we know is that reparations are owed to the descendants of the enslaved, and frankly, the bill is past due.

As a Black woman in New Orleans in the 1960s, Dr. Cynthia Vernón thought her degree in mathematics would put her on the path to becoming a teacher. Opportunities for Black women to enter certain professions were limited. After graduating from Xavier University, she did become an educator, but not before playing a critical role in the Apollo space program and American history. [Dr. Vernón's story](#) remained untold until recently when she shared her experiences of working at the NASA Data Center in Chrysler Space Division [with her family](#). Lucky for us, her daughter, [Carla Vernón](#), CEO of The Honest Company, and the first Afro-Latina to lead a publicly traded company in the US helped arrange a conversation with Juleyka Lantigua, the series creator and co-editor.

Dr. Vernón overcame the challenges of growing up in the segregated south and broke barriers in science and education. Although she left an indelible mark on the nation's history, she reflects on her classmates who didn't have the same opportunities simply because of the time. In 1960, the jobs available to Black women were limited to roles such as educator and housewife. NASA mathematician was pretty much unthinkable. In this candid interview, Dr.

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Vernón discusses what those women are owed and the lasting impact she had on American history.

Dr. Vernón: I think in New Orleans we sort of had our own special little microcosm of a cultural group of people who, we believed we were capable, we believed we deserve things. And even though the Jim Crow laws were there, and you'd see signs like, for colored only, for white only, and you couldn't go to theaters. There was a lot of things we could not do because of discrimination, but we had positive outlooks. We were just, as I said, that village that perpetuated positivity.

Lantigua: Do you recall one particular incident that had a special impact on you or one that you've carried with you?

Vernón: Okay. I suppose I was about nine or 10, and every year we used to have to go to this program. It was called a Founder's Day program for this guy. His name was McDonald like McDonald. And so, there were a number of schools in New Orleans that were called McDonald Number, whatever. This money that flowed to the schools came under the condition that annually he would be celebrated even though he was a slave holder. As a young child, we had to go to this celebration, and it always occurred in May. Well, May is very hot in New Orleans, and we had to dress up and bring flowers, et cetera.

And the politicians and the leaders of this program would recognize children, but rarely did they ever recognize a Black child. That made an impact because I never understood why we were honoring this man, okay. And I was young, but something did just not seem right. Our schools were always in theory and terrible books. I mean, hand me down everything okay and poor quality, poor quality in the school. And so it just reminded you of a white supremacy, which you didn't want to be a part of.

Lantigua: When did you know you were smart and how did you know you were smart?

Vernón: I knew I was smart I guess when I got to about sixth grade.

Lantigua: What happened?

Vernón: I was the child who always wanted to go to the board and put up the problems and explain them to everyone. I knew I was smart then. I knew I loved mathematics then. I knew I loved being able to explain it and help my friends learn it.

Lantigua: What a wonderful feeling for a child.

Vernón: And then it just continued on even as I got into high school, that's kind of where I excelled in the mathematics, and I had some very good math teachers in high school and college.

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Lantigua: Tell me about this love of math. Why is math one of your loves?

Vernón: I think it develops a way of thinking. There's always that unit on logic in mathematics.

Lantigua: Yes.

Vernón: But it's always, you start here and you follow a path. You don't memorize formulas; you follow the path and you get to the answer, and you get to the answer in such a way that you have an understanding of the answer.

Lantigua: You go to Xavier, which is a Black Catholic institution. Tell me about coming on campus and being surrounded by smart Black kids like yourself.

Vernón: When I started out, I was one of the very few who started out on a mathematics path, of course, and of course, because of the times, and at that point, all I could see myself, the possibility was getting a degree in education so that you could teach.

Lantigua: To be a teacher.

Vernón: And many of my friends took a path, but became educators as well. I had some very good math professors, most of whom were some of the nuns, some have had PhDs, whatever. And most of my science professors did have PhDs. At the time, there was nothing like a school of engineering or anything of that nature. Your path was either you're going to be a biologist or if you're in the sciences, a chemist. There was a med tech program and there was a pharmacy program at the school at the time, and so those were basically your options.

Lantigua: So let's forward a little bit because in 1963, you, for the first time, make history by becoming the first Black person at NASA's Chrysler Space Division in the data center in Slidell, Louisiana. How did that come to happen?

Vernón: My math professor from the university, Sister Miriam Francis, she would have me do special projects with her. When I graduated, she suggested that I apply. At that point in time, NASA was looking for mathematicians, engineers. I was one of the few to graduate in the math program as a woman in our small class of mathematicians, and that's where I applied and was accepted right away.

Lantigua: Tell me about day one working for NASA.

Vernón: Slidell is a town that's maybe about 40 miles north of New Orleans, so I had to find a place to live. I had another classmate who worked for NASA, and he told me about this family who rented rooms, a Black family, and I could rent a room from them. At that point, I didn't have a car. I think it was maybe after a few

paychecks, I decided to buy a car, which I couldn't drive at the time. I bought a Volkswagen and it was a stick shift. The people I lived with taught me how to drive a stick shift, and after a couple of minor accidents, that's how I got back and forth. When I went to this big, beautiful plant, I mean, the computer facility was very, very nice.

I went to work there under Chrysler Corporation, and at the time, that's how NASA worked. There were various companies that had projects. I had no experience with computers, although computers were on site. We were not human computers like the ladies in Hidden Figures, because we already had the IBM computers at that point. I was hired as a computer assistant to work with the engineers, but you had to put the correct run, stop cards, et cetera, in place, et cetera. So that's what I was hired to do.

Lantigua: So you were basically translating the needs of the engineers so that the computer could make the necessary calculations?

Vernón: Yes.

Lantigua: Okay.

Vernón: Used the manual just like Dorothy Vaughan in Hidden Figures. Sit down and read that manual and learn what you can about computers and how they work and the system of commands.

Lantigua: Right. So how did you progress? How did you grow in this work?

Vernón: We had the plans and the development of the Saturn rockets that would boost the Apollo space rockets. However, my company was not going to get the contracts, and there was going to be a lot of layoffs. All right? And at the time, I had already contemplated, "Well, maybe I need to go back to school." I knew enough people, especially math educators who had gone to school to further their education. Science foundation grants were available for us to go to school easily, but you had to become an educator. So I made up my mind that, "Okay, I'll go to the classroom to apply for the grant," and I got the grant, and I studied more mathematics, and I studied mathematics along with some people who were engineers at the University of Oklahoma, and some classes I did pretty well in. At the same time I got married and my husband and I both went to study at the University of Oklahoma. He, too, was a mathematician. We met in classes together.

Lantigua: Beautiful.

Vernón: I taught in schools there in Oklahoma while my husband finished some of his work, and then he got a job in Buffalo, New York, and so we moved to Buffalo, New York, and we had our family in Buffalo, New York, and he was a professor,

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and he continued his education. I was homemaker for a while, and then after that, he decided to go full-time for his PhD. Then I decided I'd finish and get my PhD degree.

Lantigua: Of course.

Vernón: I decided I'd do something different. I'd get it in microbiology.

Lantigua: What? What? Why microbiology?

Vernón: The opportunities to do anything but teach math-

Lantigua: I see.

Vernón: ...were not available.

Lantigua: The self-determination of you is not happy with the options. Okay, so you get this degree in microbiology with the intent to do what with it?

Vernón: There was a professor who was the head of blood banking, and he met me and he decided that he'd offered me an opportunity to do some research at the blood bank while getting my degree, and he would cover the cost of my degree and give me a monthly stipend.

Lantigua: Wow. Your PhD?

Vernón: So I finished my degree, but I also had opportunities from the university to work with STEM programs with the children because I had been an educator. I was working with teenagers who were developing what they wanted to do and thinking about what they wanted to do and sort of mentoring teenagers. After I got my degree, I continued to work in a program with the University of Buffalo with some STEM programs, as they called them today. At the same time, I did part-time research, so sometimes you make decisions based on-

Lantigua: On the economics of it, of course.

Vernón: ...family needs and benefits, et cetera.

Lantigua: 1959 to basically 1978, '79, were probably the most important years for NASA in terms of establishing it as the phenomenon and the authority that it is. Tell me about the culture of working there as a brilliant Black woman who is a go-getter and ambitious and sure of herself.

Vernón: As far as the culture, it was still the southern culture. I mean, it was still the sixties, and when you were at work, people would give you what you needed to do, but there was never any special attention. "Here's your project, here's the

manual." There was no formal training. I had a female supervisor. She was the supervisor of our office, and she gave us the projects, and she just directed us to read the manual and figure out things that we needed to figure out.

Lantigua: Let's talk a little bit about the machine itself because the way that IBM is portrayed in the film, it's very imposing, it's very daunting for even the quote, unquote, "men" to figure this thing out. How did you bring to bear your math skills?

Vernón: My math came into play with working with the engineers and talking to them to make sure that they could get their run the right way.

Lantigua: Thinking about broadly, not just the contributions that you've made, but also the opportunities that you've had, and from the way you tell the story, you had mentors and teachers and other people who recognized, "Oh, here's a really smart young woman. Let's support her. Let's create opportunities for her." But there are tens of millions of people who didn't have such a similar path, and that is very much due to the Jim Crow and to the institutionalized racial separation of the United States. We are now coming into a conversation in the country about what might be owed and to whom it might be owed. So I'm going to put it very simply to you, as a Black woman growing up in segregated New Orleans, do you feel you are owed anything?

Vernón: Whoa. I think what is owed should be paid forward. It should be paid for opportunities for the young Black scientist and young Black, whatever their profession is. I think that's what should be happened to as far as I see. I think it should be paid forward to the generations as they move along. Opportunities in helping people to develop as they should in their fields of interests with goals and plans and mentors and everything, and the finances, as I was so fortunate during my time of having the finances furnished, available to me by the different group.

Lantigua: If someone proposed, for example, that as a way to repair and repay that today and going forward, for example, school university systems would be free of charge for the Black descendants of the formerly enslaved.

Vernón: That's only a part of a solution because even if tuition is free, there are many other things that go into being a student and reaching your goals and profession that would not be included as just saying, "Okay, all schools are free for enslaved people." It's going to take a lot more thought on my part because I have not considered that, but I think there's just so much more that goes into it than just free tuition.

Lantigua: Okay. So let me ask you a question about your contemporaries. The women who, for lack of other pathways, professional pathways, went into education, but could have been engineers, could have been designers, could have been a

whole range of things. Do you think that they are owed anything for having been somewhat derailed?

Vernón: I think we are all owed something, but as I said earlier, whatever your profession is, it's going to have to be paid forward. It's going to have to be up-to-date to the people who want to be designers, engineers, and paying their tuition is one thing, but also, as I said, people have to live, people have families. There's got to be a way like there was for me.

Lantigua: So for you, this is about creating pathways to opportunity.

Vernón: Yeah.

Lantigua: Well, Dr. Vernón, it has been an absolute honor to talk to you today. Thank you so much.

Vernón: Okay.

Kirkland: Special thanks to Dr. Cynthia Vernón for sharing her incredible story with us. While her journey as a trailblazer for Black women in STEM during the civil rights era is a remarkable one, it's also a reminder of the barriers that aspiring scientists and mathematicians from marginalized groups faced and begs the question of how many descendants of the enslaved didn't have the same success because of those barriers? Limited access to quality education, mentorship, resources, and professional networks made it nearly impossible to achieve the same levels of success as Dr. Vernón. Even today, Black women still make up a small percentage of the STEM workforce. According to a 2017 National Science Foundation report, [Black women made up less than 3% of scientists and engineers in the country](#). Dr. Vernón's accomplishments are even more remarkable when you think about how few have made it to the same ranks she has even 60 years later.

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Thank you for listening.

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