

A portrait of Dr. Cipriano Santos, a middle-aged man with short, graying hair, smiling slightly. He is wearing a light-colored collared shirt under a dark jacket. The background is a soft-focus outdoor scene with greenery.

The professor who found wings in mathematics

*“God took my legs, but he gave me wings. I consider **polio** a blessing. I realized that I was going through something. Ever since then, I felt like I had a mission.”*

With time, [Dr. Cipriano Santos](#) would discover that that **mission was to try to make the world a better place**, which he would do via **mathematics**, inspired by his 2 greatest examples: **Albert Einstein** and **Jesus**.

The **polio** he contracted **aged three** caused **paralysis of his legs**, but far from discouraging him, it gave **him further impetus** to achieve his mission.

Dr. Santos managed to become proficient in math and forge a career as a technologist, during which he was granted 18 patents. He is now a **distinguished professor at [Tec de Monterrey](#)** through the [Faculty of Excellence](#) program.



Taking flight on the “wings” of mathematics

Dr. Santos, who holds a PhD in **Operations Research** and uses a **wheelchair** to get around and walking sticks to stand up, says not being able to **walk** at such a young age made him reflect upon his **mission in life**.

*“I knew I had a mission that was going to take me far. Albert Einstein is one of my role models. The other is **Jesus**, who, as a mentor, is my guide, the example that **provides me with empathy**.”*

*“The interesting thing about **Operations Research**, which is my passion and what I do, is **creating the Kingdom of God**. That’s the purpose for which we’re here, that’s what we live for, and **if I have a mission in life, it is to transform and improve the world**,” he said.*

As far as Dr. Cipriano is concerned, **science doesn’t move without math**. He defines his relationship with them as something mystical, since he sees them as the “**official language**” of science, nature, and God.

*“I never saw my experience with polio as negative, but rather it was **mystical**, knowing that I can **develop into something that benefits more people**,”* he says.

Polio is a contagious disease caused by a virus, which in **1 out of 200 cases** destroys parts of the nervous system, causing **permanent paralysis in the legs or arms**.

So, **when he takes flight on the “wings” of mathematics**, Dr. Santos **feels like he’s changing the world** by infusing his skills in technology applications **for the optimization and management** of human resources.

*“**God took my legs, but he gave me wings. I consider polio a blessing.**”*

As a child, he wasn’t good at math

Dr. Cipriano remembers that during a trip with his parents, he experienced a **moment that left a mark on him**.

*“I was gazing at the stars, and I suddenly had a moment of **catharsis** and I said to myself: **‘I want to be a scientist.’**”*

*“**Einstein was my first role model**. The other kids had football players or artists, but I **wanted to understand the universe**, and that’s how I became interested in science.”*

With Einstein as one of his role models, he realized that if he wanted to be like him, **he had to be good at math**, but he wasn’t that good at it as a child.

However, **fate** led him to have his spine operated on at the age of 13, during which he spent **three months in bed** recovering.

*“So, they gave me a teacher who was going to **teach me math.**”*

That **teacher** was the one who **helped him to first understand the subject and then become passionate** about it, a passion that led him to studying Actuarial Science at the National Autonomous University of Mexico.

Later, over time, he did a master’s degree and a PhD in **Operations Research** at the [University of Waterloo](#), in Canada.

*“**If I have a mission in life, it is to transform and improve the world.**”*



Working with one of the most renowned computer scientists

Dr. Santos worked for almost **30 years** at [Hewlett-Packard \(HP\)](#), from which he retired with honors. There, he was granted **18 patents**, and collaborated with [Robert Tarjan](#), one of the **most renowned computer scientists in the world**.

*“(Tarjan) would come and say to me: ‘Ah, you have a math problem. Now, I’ll bring my people and we’re going to fix it.’ That happens to a lot of mathematicians, who don’t know **how to translate a real problem into a mathematical one, and that’s my virtue.**”*

After spending **23 years at HP Laboratories**, he moved to **Global IT Services** to implement a technology project to manage the **IT portfolios** at HP.

The project, known as **“Project Portfolio Optimization,”** consisted of an application that helped decide **which projects were going to be developed** over the year, in which part of the world, and with which personnel, based on budgets and seeking to minimize costs.

*“Before they used our technology, it took them three months to generate a protocol. When we finished our implementation, the system ran in **two or three minutes** and produced the output. That’s why **they named me Mr. Optimizer.**”*



One of the most influential Hispanic people in technology

While working as a researcher at HP Laboratories, Dr. Santos wondered whether he could have **research assistants, just like professors at universities**, and he raised his

concern with his directors.

That vision of adding **talented young people from Mexico and Latin America** to HP research led Dr. Cipriano to becoming one of the creators of an **internship program** for engineering students called ***University Relations***.

*“We **connected with every university in Mexico and Latin America**, and we began to generate talent that could join HP Laboratories.*

*“Our interviews were very hard. We gave the young people problems to solve in three days. We knew they weren’t going to be able to do it, but what **we wanted to know is how they thought**,” he said.*

This initiative resulted in the **GUAPO (Guadalajara Prototyping Organization) program** which the Mexican scientist implemented along with his colleague, Francisco Andrade, and in which **more than 100 students from leading universities participated, including Tec students**.

Today, over 80% of the program participants hold leadership roles in Data Science at companies such as **Microsoft, Google, Meta, eBay, DHL, and LinkedIn**.

In 2005, this endeavor led to him being distinguished as **one of the 50 most influential Hispanic people in technology and business in the United States** by the [Hispanic Engineer & Information Technology](#) journal.

Arriving at the Tec as a distinguished professor

Santos recalled that **his connection with the Tec dates back to the start of the century**, when the institution joined the research stay program for engineering students.

*“Back then, **David Garza** was the Rector for Higher Education, and we explained the program to him, so **they started inviting me to give tutorials** to identify more of these students.*

*“Now, as a **distinguished professor at the Tec, the most important thing is going to be research and outreach**. The strong point is going to be creating research centers with this idea that the faculty of excellence start to **push technology**,” he explained.*

The **Advanced Logistics and Mathematical Modelling** professor at the **School of Engineering and Sciences** is looking to replicate the research stay model to **link students and professors with tech companies** and contacts he’s made throughout his

career as a technologist.

*“Being part of the **Faculty of Excellence** is a privilege, an honor, and an opportunity to interact with front-line people to solve complex problems in a multidisciplinary way,”* said the distinguished professor.

He will lead the **Operations Artificial Intelligence** program, which aims to steer students to specialize and carry out stays as research assistants in computer science, artificial intelligence, machine learning, and optimization.

*“The Tec has access to the best technology and excellent professors, so I feel that **I’m at the top of my career** and I can achieve things here that I’ve always wanted to.”*

Reflecting upon his life, Dr. Cipriano pauses to answer what **his professional career has meant to him**.

*“I feel like God blessed me through polio because it made me think differently. I feel like I grew up, I got strong, and in the good sense of the word. I think **I’ve managed to bridge the gap between the spiritual human part and science**,”* he concluded.

*“**I’m at the top of my career (at Tec) and I can achieve things here that I’ve always wanted to.**”*

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