

# Nelson Colón Vargas: First Boricua to Become Presidential Innovation Fellow <sup>[1]</sup>

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## El Dr. Nelson Colón Vargas

For many, studying mathematics is synonymous with difficulties and frustration. However, numbers has opened many doors for Dr. Nelson Colón Vargas. The most recent were the doors of the federal government. In February 2019, Dr. Colón Vargas became the first Puerto Rican to receive the "Presidential Innovation Fellowship" of the White House of the United States.

Born and raised in Canovanas, Puerto Rico, it is safe to say that Nelson is passionate about numbers. He has a baccalaureate, two masters' and a Ph.D. in mathematics. His interest in this field began in elementary school. He had excellent teachers growing up. For him, his passion for mathematics is matched only by his curiosity to understand the world.

"I entertain myself easily by finding out how things work. When I was little, I loved to open the electronic devices of the house to try and understand how they functioned. That got me in trouble with my family on several occasions," he said. He laughed as he recalled that he wasn't always able to put things back together.

Dr. Colón Vargas completed a doctoral thesis in Quantum Topology, a relatively new field with few experts worldwide. To explain what Quantum Topology is, Nelson gave us this example. Think of a public bus in a big city. By taking into account all of the road intersections that go north-south, east-west and diagonal, Quantum Topology could help find the minimum number of routes that can cover all the points where people want to go, maximizing results while reducing efforts.

Seeking new challenges to continue learning, Nelson applied and was accepted to the distinguished "Presidential Innovation Fellowship" program of the White House in Washington, DC. In this program, professionals at the forefront of their respective fields work in federal agencies, where they create innovative projects for the benefit of citizens.

Recipients of this prestigious fellowship include entrepreneurs, military, scientists, engineers, computer system designers and more. The program lasts one year, but many decide to extend it to acquire more experience and develop projects of greater impact. Throughout the fellowship, the "Presidential Innovation Fellows", also called PIFs, are exposed to a number of professional growth opportunities with leaders from government agencies and private industry. After completing this program, PIFs continue their careers in the public or private sector.

In the case of our Dr. Colón Vargas, his role as PIF will be at the Office of the Chief Technology Officer in the Department of Veterans Affairs. He will be using his expertise to improve the data quality, automation and fraud-prevention within the agency. His work could drastically change efficiency within the organization, leading to better services for veterans.

Nelson's extensive preparation in mathematics was not the only thing that helped him get this opportunity. In the short years since completing his Ph.D. (in 2016), he has refined his skills working for titans in the computer science industry, such as Microsoft. In the well-known software company, he worked finding electronic fraud and protecting the intellectual rights of the company. In addition, he was part of a startup company that develops models to detect identity theft emails.

As if that were not enough, he also completed a certificate in "The Data Incubator," a highly selective 8-week program for doctors who want to enter the private sector.

While we talked, Dr. Colón Vargas emphasized the importance of leaving our comfort zone. He advises the next generation of Puerto Rican professionals to follow multiple passions, since he has benefited from multidisciplinary experiences, and now sees them as an important element to understand and solve complex problems.

"Do not miss opportunities because you think you're not ready . . . with a little more effort you will be able to do it," Nelson told us as we closed the interview. While one might never feel fully prepared to do something new in any professional field, he reiterated that the most important thing is to be willing to work hard and have good mentors to guide you throughout the process.

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