

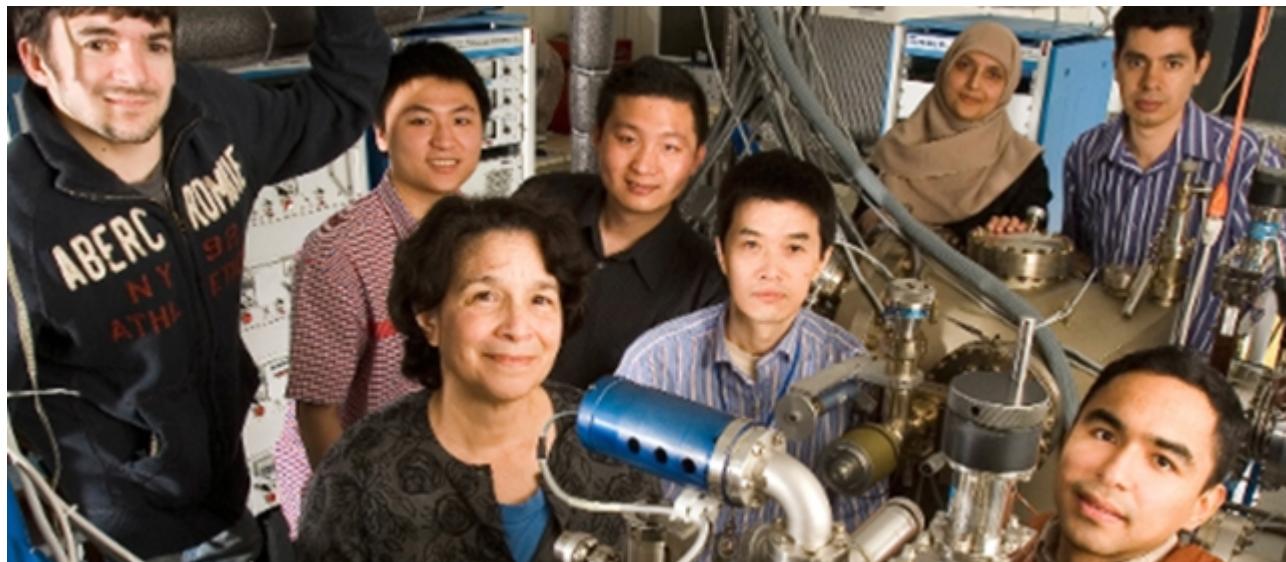
María Tamargo: a scientist passionate about the intersection of mentoring, teaching and research

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Submitted by [Gabriella Sanguineti Lozada](#) [\[2\]](#) on 8 June 2015 - 8:10pm



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Dr. Tamargo with her research group. Photo courtesy of Dr. Tamargo.

Dr. María Tamargo's interest in science began as a young woman. She was first exposed to chemistry as a high school student, where she had the opportunity to study in Spain for a year. This opportunity sparked her desire to become a scientist and therefore, she decided to major in chemistry. For her undergraduate degree, María attended the [Interamerican University of Puerto Rico](#) [\[4\]](#), where her parents were also professors. At the time, the Interamerican University of Puerto Rico did not offer a bachelor's degree in chemistry. Recognizing her scientific talent, one of her professors encouraged María to transfer to the [University of Puerto Rico at Río Piedras](#) [\[5\]](#), where she completed her B.S. in Chemistry.

Having witnessed first-hand the joys of research, María aspired to be a university professor, and was accepted to the doctoral program at [Johns Hopkins University](#) [6] in Maryland. She described her first year there as challenging, as she wondered whether she was as prepared as her classmates. However, with perseverance and the support of graduate peers and mentors, María finished her PhD and had three postdoctoral offers, including a faculty job offer in Puerto Rico, and another as research scientist at the renowned [AT&T Bell labs](#) [7]. While her initial intention was to become a chemistry professor, she could not refuse the opportunity offered by Bell labs to be part of their cutting edge research, and decided to work in industry.

Dr. Tamargo describes her experience at Bell Labs as “very positive”. Even though she was the only Latina in her team, her coworkers were very inclusive, making it easy for her to feel like part of the team. María candidly shares that the hardest point of her career at Bell labs was ensuring that she was still recognized as an ambitious scientist that took her career seriously after having children—a common worry still for many of us women in science, technology, engineering and mathematics (STEM) fields. Having a supportive husband who was as involved as she was in raising their family was a great resource, as was her drive to continue to do great work. She says that she is very proud of being able to show people that you can have a family and be a successful scientist.



Dr. Tamargo with members of her research group. Photo courtesy Dr. Tamargo.

In 1992, BellCore closed operations, and she saw this as an opportunity to find new ways to continue doing great science. Finally, it was time to bring back her original dream and give academia a chance. She took a faculty job at the City College ([CCNY](#) [8]) of [City University of New York](#) [9] (CUNY).

Her transition to CCNY was, in part, facilitated by equipment donation from BellCore. BellCore’s donation allowed her to establish the CCNY Molecular Beam Epitaxy Laboratory and continue her research in the semiconductor field. Furthermore, teaching at CCNY allowed Dr. Tamargo to find a new source of professional satisfaction, inspiring students and helping them become the best version of themselves. However, her main goal still was to continue doing cutting-edge research, because she loved the idea of breaking new ground in the development of novel semiconductor materials.

After having established herself as a professor in chemistry, she was recommended to become the interim Dean of Science at CCNY in 2001. Motivated by the challenge of becoming a catalyst for change, she accepted the position, which became permanent two years later. As the Dean of

Science, and with a limited budget, she worked alongside her colleagues to obtain funds to hire new faculty and to build a new science building. She also mentored students and professors, worked in fundraising, and allocated resources wherever they were needed. Serving as the Dean of Science was a unique opportunity for advancing her career, but she found it very difficult to continue working as Dean while also keeping up with her research and her own students. As a result, she left the position after six years to focus on her research and on mentoring graduate students.



Dr. Tamargo and her student in the laboratory. Photo courtesy of Dr. Tamargo.

Today, Prof. Tamargo continues to be truly dedicated to advancing science. She works at the interphase of chemistry, materials science, engineering, and physics, developing semiconductor materials that can be used to make new technologies and to study fundamental physics. The Tamargo Lab [10] is one of the leading groups in the world that uses molecular beam epitaxy (MBE) to study the different applications of semiconductors. MBE is a technique used to grow crystals, to make II-IV semiconductor materials that contain near-perfect lattices. II-IV semiconductors can be used as light emitting diodes (LEDs), photovoltaic devices (solar cells), and topological insulators (materials that exhibit conducting and insulating properties). The wide array of research areas in the Tamargo Lab has led to several patents and collaborations with various institutions, including Princeton University [11], Columbia University [12], the Physics and Electrical Engineering departments at CCNY, and Queens College of CUNY [13]. Her work is funded by the National Science Foundation [14] and Department of Energy [15]. She has published over 250 publications in journals such as Applied Physics Letters, Journal of Applied Physics, Journal of the American Chemical Society, Journal of Crystal Growth, Applied Optics, and Journal of Physical Chemistry.

One of Dr. Tamargo's goals is to help improve recruitment and retention of students from underrepresented minorities by writing grants that will entice faculty members in the CUNY's Graduate Center [16] and Engineering School [17] to increase the number of students and faculty of color in their departments. She hopes that these financial incentives will help faculty members continue to keep diversity numbers up and help underrepresented students realize that they belong in graduate school and deserve to aspire to top positions in academia and industry.

Dr. Tamargo has had a very rewarding and distinguished trajectory as a scientist in her field. However, she recognized that one of the efforts that makes her proud is the opportunity she's had to help the students that come through her lab become the best scientists they can be. After a

long, successful career as a research scientist, she is also thinking about her legacy and hopes that the CCNY Molecular Beam Epitaxy Laboratory can help attract new faculty to City College and allow them to carry out cutting-edge research. Dr. Tamargo encourages everyone “to do what they really like and to do it well. This way, they will be as good as they want to be,” she concluded.

If you would like to learn more about Dr. Tamargo visit her [profile](#) [18] on our website.

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