

BIOMIMICRY BIOGRAPHIES 2023: Episode 2



Valentina Gomez

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Valentina Gomez was born in Colombia, where her family owned and operated a denim factory. When Valentina was three years old, her family moved to south Florida, except her dad, who stayed behind to continue running the denim factory with his team. Even though she moved when she was young, Valentina remembers many summers visiting Colombia, and recalls a lot of time hanging out with her dad at work.

These fond early childhood experiences drove Valentina's growing passion for the exciting world of textiles. She remembers thinking how cool it was to watch textiles go through the various stages of production inside the factory, which ultimately end up in shopping stores that millions of customers visit.

Valentina recalls the mill as a multi-story building, with each floor dedicated to a step in the overall denim production process. Everything starts on the top floor of the factory where the denim is cut. Later, on the bottom floor, the zippers and buttons are applied and the final product is prepared to leave the mill.

After many hours inside the factory, observing the production of only one garment type within the massive textile industry, Valentina was motivated to better understand every stage of the process. Her interests led her all the way to New York in 2016, where she attended the Fashion Institute of Technology (FIT) and earned her Bachelor's degree in Textile Development and Marketing, with a Minor in Ethics and Sustainability.

It was in 2018, during her sophomore year at FIT, that Valentina and her co-founders first dreamt of the idea that would eventually form the base technology of Werewool. It all began when a molecular florist, Sebastian Cocioba, first introduced Valentina and her co-founders to the proteing and biomolecules that have made Werewool's platform technology for protein-based biodegradable performance fibers possible.

One of the first proteins the team was introduced to was a Red Fluorescent Protein, also known as "RFP." This protein can be found in the Discosoma Coral, and is responsible for providing the Coral with UV protective properties and emits a natural pink color and fluorescent glow. From that moment, Valentina and her team wondered whether it would be possible to take the DNA sequences responsible for RFP's incredible properties and translate them into a biodegradable textile fiber.

It was this idea that encouraged Valentina and her colleagues to enter the 2018 Biodesign Challenge Summit, demonstrating Werewool's first proof of concept using synthetic biology to create cross-linked fibers.

After presenting at the 2018 Biodesign Challenge Summit and winning the award for Outstanding Presentation, Valentina and her co-founders partnered with scientists at Columbia University in the Biomedical and Chemical Engineering department to further develop the platform technology of Werewool fibers.

Werewool officially became a company in 2020 after winning the H&M Foundation's Global Change Award. The team is now in the prototype phase of producing their colorful fibers. Going forward, as they scale-up, Valentina is interested in generating the best product that meets the performance and aesthetic properties that consumers demand, while also creating a fiber that is "backyard compostable." This means that no matter where Werewool fibers wind up, they still readily biodegrade in a microbe-rich environment.

As Valentina describes Werewool, it is clear that she will face any challenge when it comes to bringing this incredible technology to market. She hopes that they future Biomimics of the world will remain curious and open to learning about the ways in which we can emulate the world around us!