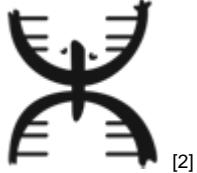


# A summer with toads and nano-bubbles!!! [1]

Submitted by [Hilary Marrero](#) [2] on 1 August 2015 - 12:05am



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This summer 2015 has been one like no other. Having the opportunity to work on a summer research program in a good university like the UPRM and contribute to the scientific knowledge in my island is something great that has no price. During 10 weeks I worked in a mechanical engineering laboratory on the “Permeability measurements of nano-bubbles through the urinary bladder of *Bufo marinus* toad”. The goal of the research was to detect and determine if air nano-bubbles diffuse through the urinary bladder from a donor chamber to a receiver one. Some recent studies have indicated that air and oxygen nano-bubbles enhance the growth of fishes, plants and mice. If it's true that air nano-bubbles diffuse through a living tissue, maybe these ones can have some effect on living organisms. For this, the urinary bladder of *Bufo marinus* toad was used as membrane.

Having the opportunity to work in a research like this was something great. The part of working with animals (TOADS!!!) in the laboratory was a challenge for me and something completely new; is something that I would not change. To be working in the lab so many hours was something that helped me to be more patient and dedicated with every single task I do in my life. To be called by my REU undergraduate partners as “SUPER COQUITA” or by some people as “LA CHICA DEL SAPO” is something that I would never forget.

I had the opportunity to know a great professor and mentor that helped me to go through all this process and taught me a lot about my research. I knew so many graduate students from different countries and I make new good friends with the REU undergraduate students like me. We went to some social activities and without any doubt; my favorite was the visit to “Isla Magueyes” where we enjoy the beauty of coral reefs, mangroves and sea. Also, at the end of the program I had the opportunity to do a poster presentation about my research project that gave me the chance to show this new research to the academic community in the UPRM.

This REU 2015 will be a memory for a lifetime.

**Tags:** • [UPR-Mayagüez REU RMSM Blog](#) [3]

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