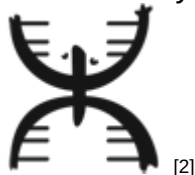


Reconfigurable and Multifunctional Soft Materials REU– UPRM ^[1]

Submitted by [Hilary Marrero](#) ^[2] on 27 June 2015 - 8:27pm



Nano-bubbles are air or other gas bubbles immersed in water with a diameter of approximately 150-200 nm. During the last years, they have been studied due to their great number of applications in the areas of Alzheimer disease, cancer, cleaning agents, drug delivery and gene delivery. In the same way, bubbles are the cause of decompression sickness (DCS). This sickness is related to persons working on submarines, high altitude works and more commonly, divers. When a person is diving deep and then goes up suddenly to the surface, bubbles are formed in their tissues due to the change from high pressure to low pressure. These ones can block the flow of blood in the vessels and produce a gas embolism. During this summer, I am working in Dr. Silvina Cancelos laboratory with graduate student Pablo Filoni in a research whose main goal is to take permeance measurements of nano-bubbles through living tissue. Our goal is to determine and analyze if nano-bubbles can diffuse or pass through a living tissue.

Besides being a great educational experience, this research experience for undergraduates has giving me the opportunity to know so many students from different United States universities and different countries. I am having the opportunity to share with all of them this new experience and make some new good friends. Also, we are enjoying tourist places and the beautiful nature of my country Puerto Rico. I hope this could be a great and valuable experience for all the other undergraduate students and me and help us to grow as human beings and professionals.

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