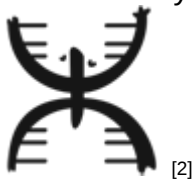


From Mayaguez to Madison ^[1]

Submitted by [Kasie Coogan](#) ^[2] on 29 June 2017 - 5:36pm







Although this summer wasn't exactly what I was expecting, I am extremely grateful for the opportunities presented to me. The summer took a surprising start as I was relocated to Madison, but the experiences I have had so far have made it all worthwhile. I have the chance to benefit from the expertise of both the UPRM and UW Madison. My situation is particularly unique because I have continued to work of Dr. Cordova at UPRM and am also a part of Dr. Abbott's lab at UW. Working with both labs has allowed me to gain a greater breadth of knowledge than I otherwise would have.

As a member of Dr. Cordova's lab, I have been introduced to a field in which I had no prior knowledge. Our work focuses on understanding the behavior of active matter in a nematic liquid crystal. To do so, we perform Brownian dynamics simulations, manipulating the parameters to vary the conditions the system is subject to. In the past, my experience has been limited to strictly laboratory experiments. This summer has exposed me to the value of being able to use simulations to isolate certain conditions and study a specific aspect of a system. In my case, I will be varying the Péclet number applied to a particle and analyzing the effect it has on the microstructure of the liquid crystal. Although there will be slight variation from simulation to simulation, I can eliminate outside factors effecting the system and will be able to study the relationship between the Péclet number and deformation of microstructure. Not only have I been exposed to the importance of the simulations, I have also learned how to use the High Throughput Computer system. I have no prior computer experience, so the opportunity to expand

my abilities has been a welcome challenge. This program has allowed me to develop new skills that I can utilize in future research.

A benefit to also being a part of Dr. Abbott's lab is that I can gain insight into the experimental study of liquid crystals. Fellow REU students in the lab are conducting various experiments to understand a certain mechanism for inducing active motion. Participating in lab meetings and being shown certain aspects of the lab work has allowed me to make connections, as well as identify important differences, between my work and theirs. In addition to these meetings, we have weekly lab meetings in which two members of the lab will present their current work. It is valuable for me to be able to see the many different projects being conducted just in this one lab.

One of the most valuable things I have gained so far from this experience is exposure to a wide range of research topics that are currently being explored. Each week I listen to speakers from various fields discussing their research, both from the UW program as well as the UPRM program. In hearing these speakers, I can critically consider what research areas are of most interest to me to potentially pursue in my future undergraduate and graduate years. Participating in both programs has really been such a unique opportunity and I am excited for what the next month has in store.

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