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Genetic Interaction Influenced by Fluvastatin and TGFb

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by Rebekah Rifareal,
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Name: Tamara Haque

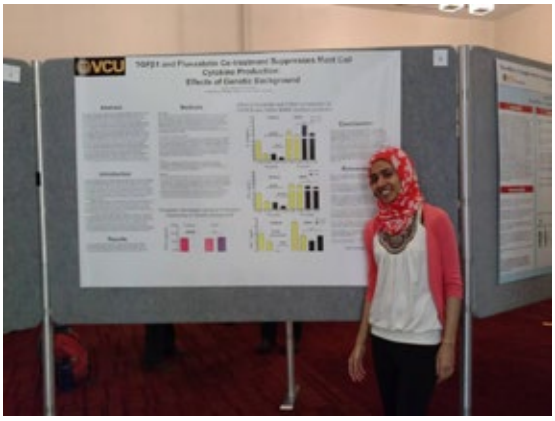
Project: "Regulating Mast Cell Functions in Asthma, Autoimmune Disease, and Cancer."

Program: Health Education Research Opportunities Program (HERO) from the Division for Health Sciences Diversity

Mentor: Dr. John Ryan

Year: Junior

Major: Clinical Laboratory Sciences



What was your motivation behind first applying to HERO?

I was looking for an opportunity to network with researchers at VCU and found this program that would provide the perfect atmosphere to do so. The added benefit of HERO was that I also got the opportunity to network with other undergraduates interested in research from VCU as well as other institutions.

Why did you choose HERO over other research programs?

I chose HERO over other programs because I've heard good things about the program from past participants. HERO met my needs by providing a stepping stone for me to enter into the research world with support and encouragement from experienced and successful researchers. It helped to build my confidence as a researcher.

Can you explain your project?

My lab found that Fluvastatin and TGFb separately have suppressive effects on mast cell cytokine production in a genetic dependent manner.

This is important because mast cells have been linked to atopic diseases such as asthma. Pro-inflammatory cytokines induce the symptoms of asthma. Fluvastatin, which is a common drug taken by many to reduce cholesterol, has been shown by Dr. Ryan's lab to lower the production of these cytokines in vitro. My project is focusing on how the co-treatment of Fluvastatin and TGFb affects cytokine production and how these effects differ based on the genetic background of bone-marrow-derived mouse mast cells.

What is a typical day in the lab like for you?

My time in the lab is spent working on my project which may include mast tissue cultures, ELISA's or migration chambers. In between experiments I chat with the graduate students in the lab to learn more about them and their projects. It's difficult to elaborate on a "typical day in the lab" because every day is different and exciting.

How do you feel your research can benefit others?

I hope that it will benefits others by giving rise to an alternative treatment to steroid- resistant asthma patients, although this would be further down the road.

How has your mentor best helped you?

My mentor, Dr. John Ryan, has been very supportive and encouraging. He has helped to build my confidence as a researcher and has provided amazing guidance throughout the summer.

How have you grown through your time doing research?

Research has made me a more open-minded person and shown me a possible career path that I would not have considered prior to this research experience.