POSTDOC APPRECIATION WEEK 2021: RESEARCH SPOTLIGHT

Katrina Celis
Postdoctoral Associate

Field of Study
Human Genomics

What impact do you want your research to have?
My research provides the first look at comparing genetic expression and chromatin accessibility profiles of Alzheimer Disease brains from individuals with European and African ancestry, which have large differences in their genetic risk for Alzheimer Disease by the APOE4 gene. Expanding our knowledge and understanding the genetic architecture and regulatory mechanism involved in the development of Alzheimer Disease can identify the protective mechanism in the African ancestry and provide new therapeutic targets for Alzheimer Disease, which currently has no significant treatment options.

What inspired you to pursue your area of research?
I think that investigating the underlying pathology of a disease that affects millions worldwide is inspirational by itself. However, I believe that my true inspiration comes from understanding how this disease affects individuals from minority populations and the impact it generates in their community.

What is most exciting about your research?
My research is exciting as we are using state-of-the-art technology available in genetic research, such as single nuclei RNA and single nuclei ATAC sequencing, to understand the differences in Alzheimer Disease risk from brains of APOE4 gene carriers with European and African ancestry. This has never been done before!

What makes your research unique?
Most efforts have been at globally comparing brain samples from cognitive intact and Alzheimer Disease individuals; however, my study is unique as we are comparing gene expression and chromatin accessibility profiles from Alzheimer Disease individuals from different ancestries focused on a single risk gene, in this case, the one carrying the highest genetic risk factor for Alzheimer Disease, the APOE4 gene.

What are your plans after finishing your postdoc at the University?
My plan is to become an independent investigator, working on research focused on elucidating problems in human genetics, particularly those involving underrepresented and underserved populations, such as Hispanic/Latino populations in the U.S. Being of Hispanic descent, I would like to increase the inclusion of diverse population in genetic research as this has been identified as a high priority by the National Institutes of Health.

UNIVERSITY OF MIAMI
GRADUATE SCHOOL
POSTDOCTORAL
PROGRAMS OFFICE