Home Laboratory: Laboratory of Cellular Neurobiology, Federal Fluminense University, Niterói, RJ, Brazil.

Home advisor: Dr. Roberto Paes de Carvalho

Host laboratory: Laboratory of Molecular and Cellular Neurobiology (LMCN), National Institutes of Health (NIH), Bethesda, MD, EUA.

Host advisor: Dr. Susan G. Amara

Contemplated: Ivan C L D Gallo

Funding category: ISN-CAEN Fellowship Category 1A / August 2016

Report:

I was contemplated with the ISN-CAEN Fellowship category 1A, which helped to fund my visit in the Dr. Susan G. Amara's lab, located in National Institutes of Health (NIH), Bethesda, MD, EUA from January 2017 to June 2017. It was an excellent opportunity and I would like to thank ISN-CAEN Committee's members and Dr. Susan G. Amara for the remarkable opportunity.

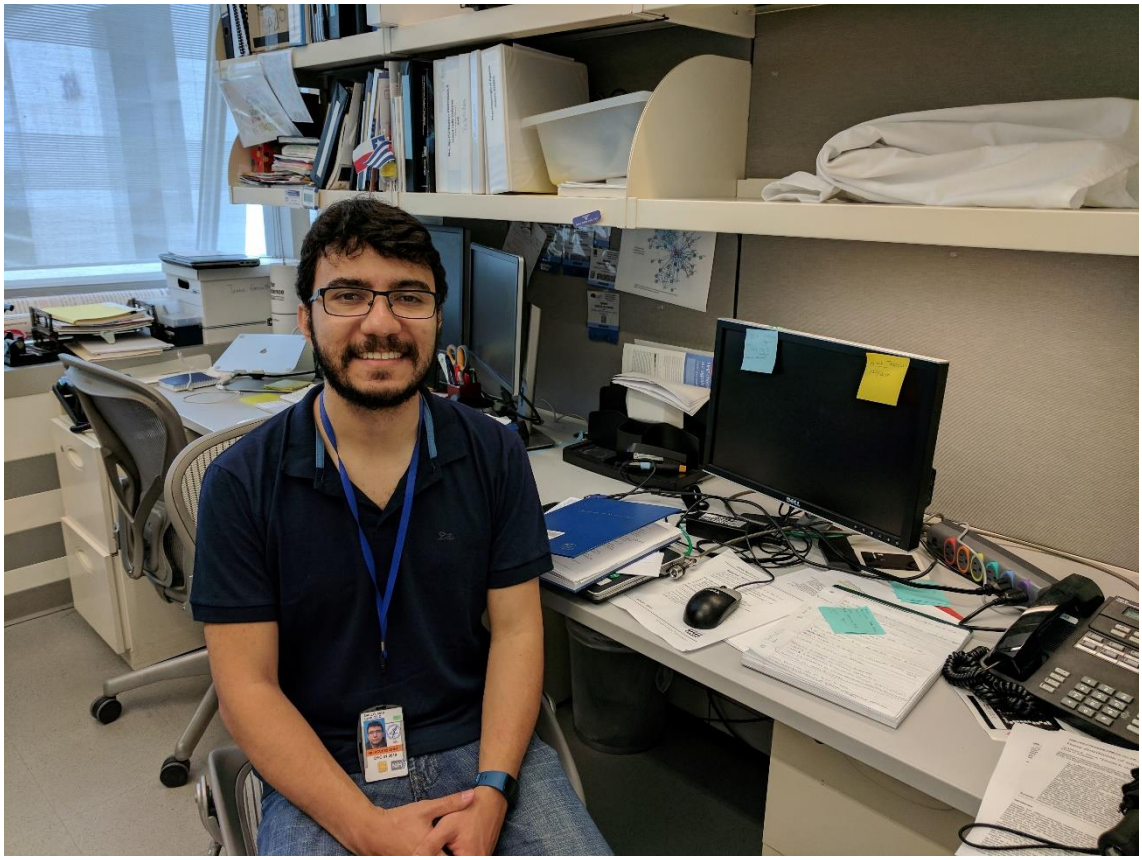
Upon my arrival, I received training courses destined to all new students at the NIH, for instance Radiation Safety in the Laboratory. After this, I started my project involving ascorbic acid and excitatory amino acid transporters (EAAT). The main objective of my visit was to learn techniques that I could use and teach other students when I went back to my lab in Brazil.

I was very well received by all members of the Laboratory, specially Dr. Suzanne Underhill who instructed me how to handle different cell lineages, cortex primary cell culture, biotinylation assay and total internal reflection fluorescence (TIRF) microscopy. Carla Glasser, who is the lab manager, also contributed to my professional enrichment in the Dr. Amara's lab. She was very patient to teach me molecular biology. Prior to my stay at NIH I had little knowledge in the field of molecular biology, but now I am able to execute assays involving plasmids and PCR.

Regarding my experiments conducted at NIH, I was succeeded in the proposed assays, acquiring important and unexpected data. One of the results I obtained was in HEK293 cells transfected with hEAAT2-pEGFP. It was performed a TIRF microscopy assay and was observed differences in fluorescence intensity after treatment with ascorbate. To verify this data through another technique, it was made a cell-surface biotinylation assay. Indeed, ascorbate alters EAAT2 surface expression. I performed other analyzes on the effects of vitamin C and the EAATs in the central nervous system and I intend to continue investigating in this field.

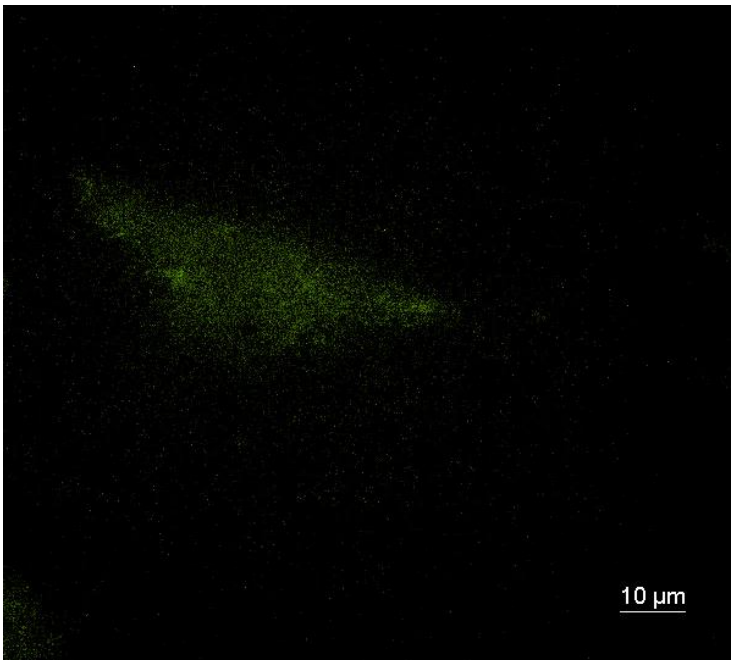
Dr Amara is an admirable and outstanding person. Although I have been following her work for almost 10 years, I had never met her in person before. It was very gratifying and important for me to be able to work in her science group.

In addition to learning the techniques related to my area of research, I had the opportunity to be in contact with people in the laboratory with different expertise. We had weekly meetings to discuss data from the laboratory members, which helped me to have a basic understanding of subjects that I had never being in contact with before, such as computational biology.



Ivan Domith (ISN-CAEN awardee) at the Laboratory of Molecular and Cellular Neurobiology

Ivan Domith’s farewell from the Laboratory of Molecular and Cellular Neurobiology.



HEK 293 cells, transfected with plasmids driving expression of EAAT2 were analyzed under TIRF microscopy.