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AHA AWARDS DIVERSITY GRANT SUPPLEMENT TO MASONIC MEDICAL RESEARCH INSTITUTE

Dr. Luana Nunes Santos Receives Diversity Grant for Autism and Heart Research

UTICA, NY — Does a connection exist between the development of heart disease and autism? That's a question Dr. Maria Kontaridis, Executive Director and Gordon K. Moe Professor at the Masonic Medical Research Institute (MMRI), and her team have been actively investigating thanks to a grant from the American Heart Association (AHA). Now, with the help of an AHA supplement award, the ongoing project will continue to propel forward. The grant, which promotes diversity and excellence in science, was awarded to Dr. Luana Nunes Santos, a postdoctoral fellow in the Kontaridis Laboratory. "I am honored to have been awarded this grant and given the opportunity to continue working towards my dream. As a woman in science who is also from South America, it means a lot to have this support. It is the first check on the list to one day becoming an independent scientist and have my own lab," said Dr. Santos.

This achievement comes on the heels of a \$300,000 Transformational Project award from the AHA to Dr. Kontaridis in November of 2020. The supplement, whose focus is to "support research experiences for predoctoral and postdoctoral fellows from underrepresented racial and ethnic groups in science under the mentorship of current AHA awardees" (AHA), will span a period of two years, totaling \$133,480. "This project would not have been possible without the support from the AHA. I am immensely proud to have Dr. Santos on my team, to be her mentor and to witness her success trajectory and growth as a scientist. This grant is well-deserved, and a testament to Dr. Santos' skills, dedication, and ambition," said Dr. Kontaridis.

The project focuses on a specific mutation within the *PTPN11* gene. Up to now, experiments have been centered around the use of inducible pluripotent stem cells (iPSCs), cells that can be differentiated into any tissue type of interest and are derived from patients with autism-causing mutations. The iPSCs have been converted into both heart muscle cells and brain organoid cells, to study the effects of these novel *PTPN11* mutations on heart disease and brain development. Thanks to the supplement, Dr. Santos will also now be able to study these mutations in genetic-modified mouse models, which will allow for determination of the effects of these mutations in a mammalian system, and not just specific cells in a tissue culture dish.

Dr. Santos' work will center around conducting the heart study experiments of this project. Dr. Gulahn Ercan-Sencicek, an Instructor in the Kontaridis laboratory at the MMRI, will be focusing on the brain organoids portion of the study. Together, the group hopes to identify novel

mechanisms of disease and identify potential therapeutics that can be used to treat patients with autism-associated cardiac disease.

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