

# Catedrático de Física del RUM de la Universidad de Puerto Rico recibe subvención millonaria de la Fundación Gordon and Betty Moore <sup>[1]</sup>

Submitted by Ariadna S. Rubio Lebrón <sup>[2]</sup> on 24 August 2023 - 2:46pm



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El doctor Armando Rúa de la Asunción, catedrático de Física del Recinto Universitario de Mayagüez, recibió una subvención de \$1, 250,000 de la Fundación Gordon and Betty Moore, que

le permitirá ampliar su investigación en la física experimental por los pr

Dr. Armando Rúa de la Asunción, professor in the Department of Physics at the University of Puerto Rico (UPR) Mayagüez Campus (RUM), received a \$1,250,000 grant from the Gordon and Betty Moore Foundation, which will allow him to expand his research in experimental physics for the next five years.

Dr. Rúa de la Asunción, who is the first scientist to win this grant in Puerto Rico, was selected along with 20 other researchers from the first cohort of 2023, who will have these funds to address their innovative ideas in a more creative way, as well as to promote advances in their field.

This was announced today by the Moore Foundation, established in 2000 with an initial \$5 billion endowment by Gordon Moore, co-founder of Intel, and his wife Betty Moore. Among its goals, the Foundation supports scientific research, particularly in emerging fields. The experimental physics researcher initiative is one of the Foundation's most recent, and its goal is to make substantial grants that will have a significant impact.

According to Dr. Rúa de la Asunción: "This distinction recognizes the work done so far, and will significantly facilitate its continuation and extension during the coming years. It is a great achievement to be among those selected by the Moore Foundation for this initiative, as their programs are highly competitive. The project is essentially won on the merit of the proposal and its basis in previous work. This validates our years of effort and, of course, has a positive impact on our students and our university environment. With these funds we will be able to acquire the necessary equipment, as well as finance undergraduate and graduate students so that they can continue to travel, as my students and I are already doing, to Brookhaven National Laboratory in New York to conduct part of the research with advanced equipment that is not available in Puerto Rico.

According to the professor, the grant will make it possible to deepen the study of materials, such as some vanadates, which abruptly change their electrical, optical and mechanical properties when stimulated by changes in temperature, intense electric fields, high pressures or strong pulses of light.

"The physics behind these changes has been studied for many decades, but the mechanisms responsible are complex and not yet well understood. This project will allow us to contribute to the explanation of these phenomena. At the same time, we will explore applications of these materials for new electronic and opto-electronic devices. In particular, we are interested in the possibility of creating neuromorphic devices. These represent an approach to computing inspired by the way the brain works. We expect them to have significant advantages over current technology, including greater capacity for parallel computing and much lower power consumption," he added.



Dr. Armando Rúa de la Asunción, with his research team of students from the University of Mayagüez Campus.

Dr. Rúa de la Asunción holds a bachelor's degree in Mathematics and Physics from the Universidad del Atlántico in Colombia. He earned a master's degree in Physics from the Mayagüez Campus of the UPR, under the supervision of Dr. Félix Fernández and completed his doctorate in Physics at the Graduate Center of the City University of New York (CUNY), under the direction of Dr. Steve Greenbaum. He has been a professor in the Department of Physics at RUM for eight years and has also been a co-author on two patents and more than 60 peer-reviewed articles.

In his teaching career, his work has been sponsored twice by the U.S. Department of Defense and he is currently working on two projects funded by the National Science Foundation (NSF), one of them in collaboration with another physics professor, Dr. Sergiy Lysenko. Professor Rúa de la Asunción has collaborations with several researchers at the Campus, at the Functional Nanomaterials Center at Brookhaven National Laboratory and with colleagues at the Australian National University in Canberra.

For his part, RUM Rector, Dr. Agustín Rullán Toro, congratulated the professor for this prestigious grant that will allow him to contribute to his scientific field and enhance the competitive work he does with impact in the country and worldwide. "Congratulations to Dr. Armando Rúa de la Asunción for being the first scientist in Puerto Rico to receive this prestigious grant, which will undoubtedly make it possible for him and his students to expand their research, obtain greater funding and continue contributing to science as an ambassador of the excellence of our

University," reiterated the Chancellor.

As expanded by the Moore Foundation (moore.org), this initiative selects and supports researchers who are advancing experimental physics research that improves scientific understanding of the natural world. In the selection process, in which only submitted projects are evaluated, without identifying the proposers or the University they represent, special attention is paid to the culture of the research groups to develop and reinforce practices that promote inclusion, equitable access to education, and professional development within the experimental physics community.

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