President's Message

Dear Colleagues:

Following our successful Annual Meeting last February, I initiated my second term as President of the Puerto Rico Physiological Society (PRPS). In preparation for this year, I planned many different activities, considering that this year marked the 10th anniversary of the PRPS. However, what nature imposed on us, the COVID-19 pandemic, took us by surprise. The subsequently extended quarantine forced us to re-structure our plans and evaluate new possibilities for the year.

For this reason, the Executive Committee of the PRPS canceled our regular outreach activities for this year, namely, high school visits and teachers’ workshops, and most importantly, the annual meeting scheduled for February 2021. However, during this time, the Executive Committee has been active in conducting the Chapter’s internal affairs, completing financial reports, and planning future activities consistent with the current pandemic.

In this, the first Newsletter of the PRPS, we discuss the achievements during this year, present successful stories from distinguished members, and provide some of next year’s plans. Now more than ever, our Society remains committed to be an instrument for the promotion of education in science at all levels in the education system.

As in the past, I expect to receive your support for this great Society to continue promoting education and research in the physiological sciences and related areas in Puerto Rico.

Cordially,
Nelson Escobales, Ph.D.
Univ. Puerto Rico-Medical Science Campus

Brief History of PRPS

The PRPS was incorporated in the Puerto Rico State Department on April 28, 2009, and was granted Chapter status of the American Physiological Society later that year. The first official meeting was in February 2011.

During the past 10 years, the Chapter conducted eight annual meetings and several outreach activities for high school students, mostly from underserved economic areas. The Chapter has also impacted teachers from elementary and high schools through workshops to increase science awareness, particularly in physiology. Two annual awards were established to recognize outstanding graduate students: The Peter K. Lauf & Norma Adragna Award and the Pablo I. Altieri Award. Each of these awards covers transportation costs to a national specialty meeting. The Chapter also distinguishes graduate student participation and excellence in research with certificates and cash awards in poster presentations at annual meetings. Similarly, the contributions in education, science, and research by distinguished scientific community members are recognized to help bridge the community and the Chapter’s membership. Continues in right column.

History of PRPS, cont.

The PRPS has also provided a network for potential graduate students and mentors at participating academic institutions (Universidad Central del Caribe Bayamón, PR; Ponce Health Sciences University, Ponce PR; University of Puerto Rico, at Rio Piedras and Carolina campuses; and the Medical Sciences Campus).

For the past ten years, the PRPS has fulfilled its mission to promote the physiological sciences in Puerto Rico, and for networking, research, and education in physiology. The PRPS encourages and welcomes the active participation of interested individuals in the field, including college and graduate students, educators, and scientists.

More info at: http://www.prps-aps.org/

EXEcutive Committee, 2020

President: Nelson Escobales, Ph.D., UPR Medical Sciences Campus, San Juan
President-Elect: José García Colón, Ph.D., UPR Carolina Campus, Carolina
Secretary/Treasurer: Aibencil Del Rio, BS, UPR Medical Sciences Campus, San Juan
Councilor: Miriam Castro, BS, UPR Medical Sciences Campus, San Juan
Councilor: Xavier Chapa-Dubocq, BS, UPR Medical Sciences Campus, San Juan
Councilor: Gladys Chompre, Ph.D., Pontifical Catholic University of Puerto Rico, Ponce
Councilor: Mikhail Inyushin, Ph.D., Central University of the Caribbean, Bayamón
Councilor: Carlos Rivero, BS, UPR Medical Sciences Campus, San Juan
Councilor: Cariluz Santiago, Ph.D., Pontifical Catholic University of Puerto Rico, Ponce
In this section, I would like to summarize the activities that we conducted during the year in progress. Following a request from the American Physiological Society, we developed an organizational chart indicating the Chapter’s members’ functions. More importantly, a Strategic Plan (SP) for 2020 was developed to guide the operations and future development of the Chapter. Strategic planning discussions were carried out on-line by the Executive Committee, as it includes members from all sections of our scientific community and academic centers. The SP was approved by the EC in its meeting of July 23 and is available on the PRPS webpage. Critical areas identified for improvement are the collection system for membership fees and the registration process, both of which are considered inefficient. The SP targeted these areas, and solutions are expected by the end of the academic year. Also, the SP identified the need to improve faculty participation in the activities of the Chapter. In response, this Newsletter and a webpage on Instagram was developed to provide additional exposure to the Society in the community. The Chapter is already present on Facebook. I urge our membership to use these excellent resources.

The Chapter has been working on the appointment of the new Secretary-Treasurer. Miss Aibenitz Del Rio Coreano will replace Dr. Gladys Chompre, who completed 3-years in the position.

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**RECENT REPORTS BY MEMBERS, 2020***


*Source PUBMED*
Dr. Chompre initiated the transfer process at the Department of State. However, due to the pandemic, the process has not evolved as expected, and the issue is still incomplete. The pandemic also forced us to reschedule the visits to schools and academic centers for education, promotion, and marketing for next year. Similarly, we are reprogramming our initiatives to request financial support from the industry (i.e., Pharmaceutical companies, Newspapers, or other potential contributors). We should expect an improved economic environment once the pandemic resolves.

Concerning this Newsletter, we plan to publish it biannually, one in the second trimester and another in the last trimester. It will be the official communication vehicle of the Society. Please send any comment or suggestion on the Newsletter to the PRPS website.

Finally, I want to thank Dr. Sabzali Javadov for his help in maintaining and updating the Chapter’s web page, Dr. Gladys Chompre for her three-year service to the Society, and the members of the Executive Committee for the support throughout the year.

Submitted by:
N. Escobales

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**DISTINGUISHED MEMBER’S CORNER**

Modern research in physiology crosstalk with other disciplines and allows us to understand the detailed molecular and cellular mechanisms of living organisms’ control and regulation. Studies in physiology now typically involve interdisciplinary and applied science, technology, engineering, and mathematics (STEM) approaches. These new integrative approaches help elucidate complex physiological and pathological processes and open new avenues for research and training opportunities for students. For these reasons, I would like to highlight in this section the scientific achievements of PRPS members that, in my opinion, are excellent models of scientists for our students and the community in general. Therefore, the sections aims to recognize those members who have excelled in the scientific mission of our Society. In this issue, we acknowledge a successful scientist and past President of the PRPS, Dr. Sabzali Javadov, Professor of the Department of Physiology, UPR School of Medicine.

Dr. Javadov is an expert in cardiac biochemistry and physiology, focusing on mitochondria’s role in cardiac dysfunction induced by ischemia-reperfusion and heart failure. Since 2009, his laboratory has been working to elucidate the relationship between mitochondrial ROS, permeability transition, and electron transport chain supercomplexes in cell death mechanisms in response to myocardial infarction (ischemia-reperfusion). His studies involve biochemical, physiological, and molecular biology techniques to establish mitochondrial-mediated cardiac dysfunction mechanisms using in vivo/ex-vivo (animal/intact heart) and in vitro (cultured cardiomyocytes and isolated mitochondria) models. Since 2010, Dr. Javadov’s research has been funded by grants from Novartis (1) and NIH (2). The results of these studies have been published in over 50 full and review articles in peer-reviewed journals of the specialty. Indeed, Dr. Javadov recently developed a new hypothesis proposing that excessive swelling of mitochondria in response to oxidative and energetic stresses plays a causative role in mitochondria-mediated cell death. Conversely, that inhibition of the mitochondrial swelling can prevent cell death. This topic’s discussion highlighted the importance of new studies to investigate the transition mechanisms from reversible to irreversible swelling in mitochondria.

In recognition of the merit of his proposal, NSF recently awarded a grant to Dr. Javadov (July 1, 2020, to June 2024) to develop a comprehensive biophysical model of mitochondria swelling. The project will apply a wide range of experimental and modeling approaches to achieve this goal. The model will be based on the kinetics of ions and neutral species transport through the inner mitochondrial membrane and its mechanical characteristics. The Broader impact activities will include the training of students in quantitative analysis and modeling approaches. Let’s celebrate the achievement of our friend, colleague, and fellow member of our Society, who is a role model for our students and illustrates the quality of research conducted in our institutions.

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**USEFUL LINKS**

**APS Graduate & Biomedical Sciences Program**
https://www.physiology.org/career/teaching-learning-resources/graduate-physiology-biomedical-science-catalog?SSO=Y

**PRPS Facebook**
https://es-la.facebook.com/pg/Puerto-Rico-Physiological-Society-1376155335956458/posts/

**PRPS Instagram**: pr.physiological.society

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THE NEWSLETTER WAS PREPARED BY N. ESCOBALES, PH.D. DECEMBER, 2020