



THE UPR-PRISE PROGRAM NEWSLETTER

The PRISE Post



Welcoming Future Scientists = Science in Action!

by Wendy I. Pacheco-Rodriguez



In an effort to promote and foster interest in science at an early stage, PRISE hosts a one-day community learning and outreach event called Welcoming Future Scientists (WFS). Every year, we reach out to the local community to increase their knowledge and awareness of

scientific research, the role of the biomedical scientist, and to inspire the professional development of young scientists by encouraging college-level studies in science. Now in its 5th year, WFS brings together high school students and their teachers from local public and private high schools to participate in a full day of interactive, hands-on scientific experiments, live demonstrations and workshops from different science fields. They also get to hear about student life on the UPR Ponce campus and learn about STEM academic offerings and science as a career.

On Saturday, March 18, 2017, 147 high school students and 16 teachers from 14 local high schools (of 5 municipalities)

attended WFS, which was entirely organized and offered by PRISE students, adjuncts and student volunteers, mostly from the student association Med-Life. WFS also provided PRISE and volunteer students service learning, community outreach and leadership development opportunities. High school participants rotated through different concurrent scientific sessions: chemistry, microbiology, agrobiolology, physics, micro-pipetting and gel electrophoresis, DNA extraction and microscopy, neuroscience and the brain, human anatomy, and bioengineering and smart materials.

According to data obtained from post-surveys, we can determine that this activity had a very positive impact on the high school participants. Following WFS, there was a significant increase in the number of correct responses on the science workshop post-test questions. In addition, 99% (+73%) of the participants reported having gained a better understanding of STEM and 93% (+37%) of the participants reported having gained a better understanding the role of a scientist. WFS 2017 influenced the decision of selecting a professional career in 75% of the participants (+46%). Participants ranked English oral communication, quantitative methods and scientific literature review as the top three skills that need improvement. Students were visibly excited and enthusiastic and responded as such on

the evaluations: 90% of the participants would highly recommend the activity to others, 85% highly agreed that the event addressed topics and workshops of interest and relevance, and 93% agreed it met their expectations. They also praised the knowledge and service of our students and their commitment to science. As a result of WFS, we can conclude that introducing science and research topics to high school students through interactive hands-on activities helped to improve learning and increase interest in science careers.

Thanks to the support of the UPRP administration and the sponsorship of VWR, Eppendorf, Bioanalytical-Instruments, Amgen, Suiza Dairy, Rovira and The Scripps Research Institute, we were able to provide breakfast, lunch, snacks and gifts to all participants, volunteers and staff. We also acknowledge Ponce Health Sciences University - Graduate Student Association in Biomedical Sciences who offered two of the workshops.

Welcoming Future Scientists contributes to the main objective of the UPR-PRISE Program of developing and increasing the participation of minority students in order to complete their baccalaureate degrees, obtain doctoral degrees and eventually enter the biomedical workforce.

WFS 2017 Participants

Colegio Santísimo Rosario, Yauco	Ponce High
Esc. Lysander Borrero Terry, Villalba	Upward Bound Program PUCPR, Ponce
Esc. Superior Vocacional, Villalba	Colegio San Conrado, Ponce
Esc. Ramon Jose Davila, Coamo	Esc. Juan Seralles, Ponce
Esc. Jose Felipe Zayas, Coamo	Colegio Ponceño, Ponce
Esc. Carmen Belen Vega, Juana Diaz	Esc. Vocacional Bernardino Cordero, Ponce
Esc. Luis Llorens Torres, Juana Diaz	Colegio La Milagrosa, Ponce
Caribbean School Ponce	Esc. Lila Mayoral, Ponce





PRISE Represents!

If there is a scientific conference or symposium on the Island, PRISE is there!

Scientific conferences are excellent opportunities for researchers and students to present and discuss their work. They are also ideal venues to learn about new developments in science, gain experience making presentations, obtain feedback on projects, and build a network of contacts.

This semester, UPR-PRISE co-sponsored the **4th Puerto Rico Cell Signaling Meeting**, a joint-effort with Universidad Central del Caribe and Ponce Health Sciences University. Held in the Ponce Plaza on March 10 - 11, 2017, the meeting was open to basic and clinical investigators, graduate and undergraduate students and other members of the scientific community. This year's theme focused on HIV/AIDS and aging with a line-up of prominent investigators in the field as guest speakers.

Our PRISE students and adjunct members attended professional development and scientific sessions on both days with the following presenting posters of their work:

Abdon Lopez- Torres The Fungicidal Potential of Dimethyloxaglycine (DMOG) in Infected Bone Marrow Macrophages of C57 BL6-J mice

Faviola Bernard Vazquez The role of DNA Polymerase Nu and Zeta in the repair of DNA-Interstrand crosslinks.

Nicole de la Rosa González Effects of deceased mitochondrial Ca²⁺ uptake in an in vitro model of Parkinson's disease

Cesar Torres-Gutierrez Dissecting the TORC1 Gene Interaction Network by Perturbing Different Subunits

Ralphdy Vergne Montes (*pictured below*) Changes in DNA Damage Response Proteins during Tamoxifen Treatment and resistance



Gerardo Arroyo-Martinez (*pictured below*) Molecular genotyping of Transposable Element Insertions in a Population of Uniform Mu Events



CONGRATULATIONS!

★ **Dr. Edu B. Suarez-Martinez**, Professor of Biology and UPR-PRISE Director received a grant from the Small Research Grants Program of the Puerto Rico Science, Technology and Research Trust. Dr. Suarez is one of nine local scientists (pictured below) whose research was funded in order to strengthen their proposals and increase their chances of obtaining future federal funds for the development of their projects. In this third edition, six of the winning proposals were projects in the area of biotechnology and natural sciences, two were in environmental sciences and one in renewable energy.

Dr. Suarez will study the protease activated receptor-2 (PAR-2) which acts as an allergen and is expressed in cells and tissues that are involved in the activation, development, clinical manifestation, and severity of asthma. By evaluating the effects of these genetic variants on the pathology and severity of asthma Dr. Suarez expects to contribute towards advancements in genetics-based individualized medicine.

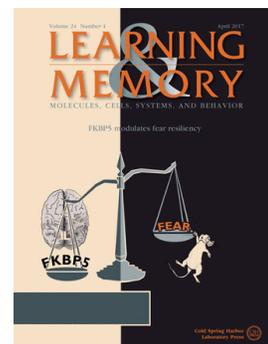


★ **Francisco-Gomez Rivera**, former UPR-PRISE student and current M.S. student at University of Texas-San Antonio, received the 2017 American Association of Immunologists Trainee Poster Award for his exceptional poster presentation at the Immunology 2017 meeting held in Washington D.C.

★ The following PRISE students made the UPR-Ponce 2017 honor roll. We acknowledge their achievements and are proud to be a part of their academic, professional and scientific development. We wish them continued success during the rest of the academic year.

Acevedo Román, Daniel
 Arroyo Martínez, Gerardo
 Bernard Vázquez, Faviola
 Camacho, Hernández, Elaine
 Cruz Rosa, Pedro
 Figueroa Ríos, Lysmarie
 González Torres, Mayra
 López Torres, Abdón
 Maldonado López, Alexandra
 Ortiz Cintrón, Jesús
 Rivera Rodríguez, Dormarie
 Rodríguez López, Eric
 Torres Gutiérrez, Cesar
 Velázquez González, Yoheilly

★ **Roberto Morales Silva**, senior PRISE student, along with members of Dr. James Porter's Neuroscience lab at Ponce Health Sciences University recently published the paper *Dynamic expression of FKBP5 in the medial prefrontal cortex regulates resiliency to conditioned fear* in the journal Learning and Memory (PubMed PMID: 28298552).



The journal's April cover illustration shows that FKBP5 expression in the infralimbic cortex (IL) enhances conditioned fear. Knocking down IL FKBP5 reduces acquisition and enhances extinction of conditioned fear to produce a phenotype of resiliency.

PRISE Outreach



To promote interest in science and awareness of local research, our PRISE students continually participate in several community outreach activities throughout the year. Activities include science fairs and judging, experiment demonstrations,

career presentations and lectures/reviews. From August 2016 to March 2017, our PRISE students have impacted 547 students from junior high and high school.

In January, senior PRISE student Ralphdy Vergne (pictured) served as a judge at the Cabo Rojo district Science Fair. Ralphdy also gave a lab techniques workshop to students at Lysander Borrero Terry High School in Villalba, PR. In February, Gerardo Arroyo offered a biology review lecture to students at Juan Serralles High School in Ponce. Meanwhile Dr. Edu B Suarez, PRISE Program Director, was a judge at the Ponce Regional Science Fair held at Caribbean University on February 17-18, 2017. For her commitment, dedication and service to the development and training of future young scientists, the awards ceremony this year was dedicated to Dr. Edu Suárez. Congratulations!

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Please send questions, suggestions or contributions for The PRISE Post to Wendy Pacheco at rise.ponce@upr.edu or call 787-8444-8181 ext 3086, 2652. For more information about the PRISE program, please visit our website at <http://prise.upr.edu/>.

What is a journal club and why is it important?

A journal club is a group of individuals who meet regularly to critically evaluate recent articles in academic literature generally in a specific field of science. Journal club is a valuable experience for scientists at all levels; it gives us opportunities to learn about papers that we may not have identified in our literature searches and to broaden the scope of our research by discussing ideas with others. Can we find fault in the logic that reviewers have overlooked? Can we find new interpretations of the data? Can we go beyond what the authors wanted to say in the paper?

To make journal club a productive and engaging experience for all, here a few tips.

For the presenter:

- 1) Announce your paper in advance, so that people have sufficient time to read it. If you selected the paper, in 1-2 sentences briefly describe the reason why you chose the paper.
- 2) Introduce the background and important points of the paper in 10 minutes or less. Do not try to cover all data, but rather focus on essential points.
- 3) Prepare a topic that you would like to "discuss" with everyone, and use the rest of the time to lead the discussion.
- 4) Do not worry about studying all the background material; it's ok to not know everything. As the leader, you have the option and responsibility to direct the discussion. This does not mean that you should limit the scope of the discussion. If something interesting comes up, you are more than welcome to explore the topic.

For other participants:

- 1) Read the paper *before* coming to the journal club.
- 2) Do not worry about not knowing everything about the topic. Ignorance is a key to creative ideas.
- 3) Ask questions.
- 4) Contribute to discussions.

Journal clubs develop two very important skills: **critical thinking** and **communication**. Having these skills has surprisingly strong effects on your career development. Although good results are necessary, they do not substitute good ideas that require critical thinking, an analytical mind, a functional understanding of the literature and the ability to debate ideas. Another benefit of journal clubs is **writing**. Reading improves your writing. The more you read, the more you are able to recognize and emulate good writing.

Think about this in your next journal club.

From: http://www.nig.ac.jp/labs/DevGen/JC_Guidelines.html