

## GUEST SPEAKER

Maribella Domenech, PhD



On September 7, 2022, we received the visit of Dr. Maribella Domenech to our institution. Dr. Domenech is an engineer trained in cancer biology with a broad background in biomedical engineering. Currently, she is a professor of chemical engineering at the University of Puerto Rico in Mayaguez. Also, she is the principal investigator of a project to determine the contribution of mesenchymal cell niches in the therapeutic potential of the hedgehog pathway in triple-negative breast cancer, funded by the NIH. During Maribella's visit, she gave the G-RISE students a seminar on the proliferative role of collagen on breast tumor cells in the absence of hormones. She showed that integrins regulate tumor behavior in response to changes to the collagen matrix structure. Her discovery opens new approaches to understanding the role of integrins in modulating cell behavior. Dr. Domenech's seminar was very valuable and exciting for all G-RISE students and the PHSU community.

 By: Sheila Valle-Cortés  
(4<sup>th</sup> year RISE trainee)

## GSABS INDUCTION CEREMONY 2022

 (By Yadiel A. Rivera-López, 2<sup>nd</sup> year G-RISE trainee & GSABS President)

On Wednesday, September 7, the Graduate Student Association of Biomedical Sciences (GSABS) hosted the Annual Induction Ceremony for first-year PhDs. During this activity, they had the opportunity to recognize the success of Jessalyn Pla-Tenorio and Elliott R. Rodríguez-López; they were awarded the Dr. Iván González and Dr. Ibrahim Ali Fellowships, respectively. First-year students Luinet L. Meléndez and Joel Orenco were inducted and received their ceremonial white coats, marking the beginning of their Ph.D. careers. The Induction Ceremony was dedicated to Myrella Cruz-Rentas (Laboratory supervisor for Dr. Appleyard and Dr. Noel) for her excellent work and compromise with the research at Ponce Health Sciences University. Finally, as part of the ceremony, we had the honor to receive a most inspiring talk from Dr. Maribella Domenech (UPR-M) about her career path and how passion was the key to being a great scientist.



(L-R) Dr. G. Armaiz, Elvin Hernández, Nelly Arroyo, Paola Flores, Sheila Valle &amp; Yadiel Rivera)



Luinet Meléndez &amp; Joel Orenco



Jessalyn Pla &amp; Elliott Rodríguez

## G-RISE LAB WORKSHOP: Immunofluorescence: Techniques and troubleshooting

By: Ivelisse Rivera, MS



On Friday September 9, the G-RISE Lab held the workshop, Immunofluorescence: Techniques and Troubleshooting by Luis A. Rivera, PhD candidate. The workshop was conducted as a discussion session with all RISE mentees to update and refresh their knowledge on this technique. Some of the topics that were discussed included: basics of Immunofluorescence, how to identify antibodies for experiments, what variables can affect the staining procedure, and the importance of using DAPI and controls. Attendees had the opportunity to ask questions and shared their lab experiences performing the technique.

## PUBLICATIONS

Chompre G, **Sambolín-Escobales L**, Sanchez R, Rodriguez Y, Rodriguez-Santiago RE, Yamamura Y, Appleyard CB. A One Month High Fat Diet Disrupts the Gut Microbiome and Integrity of the Colon Inducing Adiposity and Behavioral Despair in Male Sprague Dawley Rats *Heliyon*

*Congrats to our former RISE trainee, Dr. Lubriel Sambolin, as well as to all authors!*



## DATA BLITZ



(L-R) Yesenia Rivera, Nelly Arroyo, Sheila Valle & Jonathan López

Congratulations to our RISE trainees for their excellent presentations at our data blitz that was held on October 14, 2022.

The works presented were:

“The expression of phospho-Rb-S249, N-cadherin, E-cadherin, and  $\beta$ -catenin as a prostate proteomic score for the risk classification of PCa tumors” by Sheila Valle (4<sup>th</sup> year RISE trainee)

“The functional role of promoter germline variants in Breast cancer susceptibility genes” by Nelly Arroyo (4<sup>th</sup> year RISE trainee)

“Infralimbic cortex-hypothalamic circuit in fear and anxiety-related behaviors” by Yesenia Rivera-Escobales (4<sup>th</sup> year RISE trainee)

“Optimization of trinitrobenzene sulfonic acid mouse colitis model” by Jonathan López (4<sup>th</sup> year RISE trainee)

## PD: How to use social media to develop your career: A focus on IDP and networking

By: Jonathan López (4<sup>th</sup> year RISE trainee)



On September 6, 2022, Dr. Annelyn Torres-Reveron, Sur180 Therapeutics CEO and Adjunct professor at PHSU gave a Professional Development session titled “How to use social media to develop your career: A focus on IDP and networking”. For the benefit of RISE trainees, Dr. Torres explained what an Individual Development Plan is, and the relevance of having one as a career map. Students had the opportunity to develop and establish

short and long-term goals that will be worked upon with their mentors. In addition, trainees had the opportunity to learn about social media platforms such as LinkedIn and ResearchGate as tools to promote their research and professional development.

## PD: STEP BY STEP F31 SUBMISSION

By: Joel A. Orengo Orengo (1<sup>st</sup>-year RISE trainee)



On October 7, 2022, Dr. Claudia Colón Echevarria, process of applying for an F31 grant. Currently, Dr. Colón works as a Scientific Development Administrator at Moffitt Cancer Center, where she manages multi-project grants. During the workshop, she explained the purpose, benefits, and steps to follow when applying for an F-31. She also shared useful tips for making the process less stressful while assembling a competitive application. The purpose of an F-31 is to allow predoctoral students to obtain

mentored research training during the development of a research dissertation in scientific health-related fields that align with the missions of the National Institutes of Health (NIH). One of the most important first steps when applying for this grant is to discuss your intention of applying with your mentor. As an applicant, it is also crucial that you contact the Ponce Research Institute Office of Research Development, select the referees who will provide support letters, ask the Program Dean for information and an eligibility letter, and read the application guide thoroughly. In addition, applicants should plan ahead and set deadlines to write the required documents such as: a cover letter, background and goals for fellowship training, biosketch, specific aims, research strategy, respective contributions, selection of sponsor and institution, training in the responsible conduct research, project abstract and narrative, bibliography and references cited, facilities, equipment, and resource sharing plan. Moreover, Dr. Colón emphasized the importance of starting early and organizing yourself. Having a checklist of all the application requirements, tasks, and deadlines will help you complete the application and submit it in advance. Also, providing your biosketch to your referees with enough time and with the necessary details will help them write stronger letters. Additionally, communicating with your mentor will help complement each other's sections and build a stronger application. Other useful tips include asking faculty and students for feedback on your documents and creating a project workflow or figure that summarizes your work in a realistic and comprehensive manner. These tips will help your application stand out. Many thanks to Dr. Colón for this relevant workshop, which provided RISE trainees with a better understanding of the F-31 application process and advice on how to prepare for a successful submission.





## STUDENT UPDATES!



**Jailene Pérez Morales, PhD**

Congratulations to our former RISE trainee, Dr. Jaileene Pérez Morales on her new position as NTRO/TCC Staff Scientist at Cancer Moffitt Center, Tampa, Fl. Well deserved!

## WELCOME TO OUR NEW G-RISE LAB INSTRUCTOR!

Ivelisse Rivera, MS, the RISE Laboratory Instructor for the past ten years, accepted a faculty position at the University of Puerto Rico in Ponce. We wish Ivelisse the best!

Dr. Grissell Tirado is the current RISE lab Instructor. She has a background in molecular biology, immunology, and virology. Dr. Tirado completed an MS in Biology at the University of Puerto Rico in Mayagüez. In 2005, she completed a Ph.D. in Biomedical Sciences at Ponce Health Sciences University (PHSU). From 2011 to 2016, she was an Assistant Professor in the Biology Department at the Pontifical Catholic University, where she taught Biology, Immunology, and Genetics. In 2019, she returned to PHSU as part of the RCMC Center for Research Resources. Dr. Tirado has presented her research at multiple national and international conferences and has published over twelve peer-reviewed articles. Contact information: [gtirado@psm.edu](mailto:gtirado@psm.edu) 787-840-2575 ext. 2133.

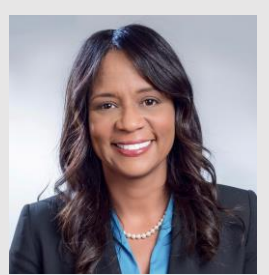
## OUTREACH

In an effort to motivate students and encourage their interest in science, our PhD students and G-RISE trainees conducted an outreach activity on Thursday, October 6, 2022, at the Thomas Armstrong Toro School in Ponce. This is a public high school (grades 9th – 12th) which specializes in an advanced science, math and technology curriculum. Through short presentations, interactive activities and demonstrations, students learned about our PhD Program and ongoing research activities at Ponce Health Sciences University. Congratulations on this excellent initiative!



## PD: Careers in Drug Development for Physicians and Scientists: How Do I Get There?

By: Luinet Meléndez, 1<sup>st</sup> year RISE trainee



On Friday, October 21, Dr. Ivonne Bruno gave a professional development seminar titled: “Careers in Drug Development for Physicians and Scientists”. Dr. Bruno provided the trainees with valuable information regarding the immense career opportunities for scientists in the drug development industry combined with her own experiences to make an engaging and motivating session. The trainees learned about the different stages of drug development, from basic science research to FDA approval and post-market monitoring and the importance of scientists in each of the stages. In addition, Dr. Bruno talked about the growing opportunities in the drug development industry in Puerto Rico and how she and her team are working on coordinated immunotherapy solutions for cancer patients at Cytolimmune Therapeutics in Toa Baja. Finally, Dr. Bruno shared tips on how to combine one’s passion with their work and to find the path that resonates with each one of us.

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## OUTREACH

So proud of our PhD students and G-RISE trainees for communicating scientific knowledge to the community! On Saturday, October 29, 2022, PhD students- Alexandra Aquino & Elliott Rodríguez as well as G-RISE trainees, Nelly Arroyo, Yadiel Rivera, Elvin Hernández & Luinet Meléndez participated in the activity titled *Weird Sciences* at El Centro Criollo de Ciencia y Tecnología del Caribe (C3Tec), in Caguas, PR. They were able to conduct interactive activities as well as organs and DNA extraction demonstrations, providing an unforgettable and exciting experience to elementary and middle school students. Great job!





## STUDENT UPDATES!



Omar Soler PhD

Big shout out to our former RISE trainee, Dr. Omar Soler-Cedeño, Postdoctoral Fellow (CRTA/IRTA) NIDA Neuroscience, who received the Fellows Award for Research Excellence (FARE) for the fiscal year 2023!

The Fellows Award for Research Excellence (FARE) recognizes the outstanding scientific research performed by intramural postdoctoral fellows. This is sponsored by the NIH Fellows Committee, the Scientific Directors, and the NIH Office of Intramural Training & Education, and is funded by the Scientific Directors. Fellows submit an abstract of their research, which is peer reviewed in a blind study section competition. Dr. Soler was recognized as a FARE winner for his research project abstract titled "Dissecting the functional roles of GABAergic vs. glutamatergic neurons in opioid action". His project aims to dissect the cell-type-specific functional role of mu-opioid receptors on opioid systemic action. The findings obtained from his study will reshape the understanding of the mechanisms underlying opioid action and may lead to the development of new medications to treat opioid use disorders.

Congratulations Omar, so very well deserved!

## PRPS MEETING 2022

By: Yobet Pérez (3<sup>rd</sup> year RISE trainee)

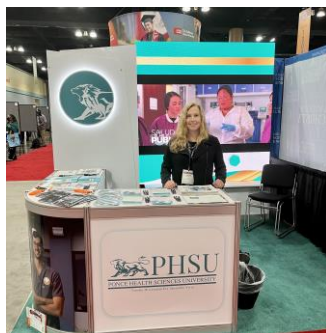


During the 10th annual Puerto Rico Physiological Society (PRPS) meeting, hosted by the Pontifical Catholic University of Puerto Rico, Ponce campus, G-RISE students had the opportunity to attend Dr. Steven Romero's seminar on "Cardiovascular Adjustments following Acute Heat Exposure: Mechanisms and Clinical Implications". Dr. Romero is a Chicano scientist serving as the Director of the Human Vascular Physiology Laboratory, and an assistant professor at the University of North Texas Science center.

His research focuses on home-based heat therapy to improve function and vasculature health, as well as chronic lower leg heating application as a treatment for hypertension in elderly women. During his talk, Dr. Romero stressed the importance of finding alternative treatments for hypertension in this population due to the poor effectiveness of pharmacological treatments. Currently, he is carrying out a clinical trial to implement heat therapy as an alternative treatment of hypertension in elderly women, with hopes of improving their quality of life. We are grateful for Dr. Romero's visit to Puerto Rico and his interest in sharing his science and experiences with us. We congratulate former RISE trainee, Luis A. Rivera-Arce on obtaining first place for his oral presentation. Well done, Luis!

## PHSU AT SACNAS 2022!

SACNAS (Society for Advancement of Chicanos/Hispanics & Native Americans in Science) is an inclusive organization dedicated to fostering the success of Chicanos/Hispanics and Native Americans, from college students to professionals, in attaining advanced degrees, careers, and positions of leadership in STEM. The organization serves 8K+ members and has 133 student and professional chapters throughout the United States and Puerto Rico. SACNAS hosts the largest diversity in STEM conference in the country, bringing inspiration and opportunity to over 3,800 attendees each year. Its annual conference took place from October 27-29, in San Juan, Puerto Rico, and we were represented by our G-RISE Program Director, Dr. Caroline Appleyard. She was very excited to attend this important meeting and be part of the Exhibit Hall at booth #1139, from where she gave information on our school's programs and offerings to attendees. Our 4<sup>th</sup> year RISE trainee, Yesenia Rivera Escobales also attended as one of the ambassadors of STEAM100x35, an initiative which objective is to empower Puerto Rican women around the world working in STEAM fields.



Dr. Caroline B. Appleyard



Dr. C. Appleyard, Savannah Pérez, & PRI President, Dr. Kenira Thompson.



Yesenia Rivera (4<sup>th</sup> year RISE trainee)



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