



THE GRADUATE STUDENT PORTFOLIO REVIEW SESSION

In our effort to enhance our trainees' communications skills, they are requested to have a career portfolio, which is submitted twice a year. This helps them organize, track and store professional and personal documents relevant to their graduate studies and career and assist with RISE annual evaluations and discussions of their progress with their research mentors.

Our Program Coordinator, Jean M. Schmidt, gave the annual session on portfolio on August 2, 2024. After the presentation, the students were divided into two groups to receive feedback and tips from their senior peers on how to compile and organize their portfolio. They also shared suggestions given by their mentors to improve this.

We received very positive feedback from the students who found the session highly informative!



WELCOME TO THE NEW ACADEMIC YEAR 2024-2025

Welcome to the start of the new academic year! We hope you share our enthusiasm for the year ahead. Under our new grant, our RISE Program (now G-RISE Program) is entering the 17th year of support to selected students pursuing a PhD in Biomedical Sciences at Ponce Health Sciences University.



We are incredibly pleased with what we have accomplished. Our trainees for the current year are Paola Flores, Yadiel Rivera, Luinet Meléndez, Joel Orenge, James Torres, Lourdes Caro, Gretchen Albarrán, Dorca Marcano, Adrián Márquez, Vivanka Ramos, Axel Ufarry and Ana Vargas. The students attended a G-RISE orientation session on July 26 to review G-RISE requirements and assign mentoring teams. We encourage them to remain focused on their classes and research, to comply with the G-RISE Program criteria and achieve their goals. We look forward to a happy and productive year!

MEET OUR NEW TRAINEES!

The beginning of a new academic year brings new students to the PhD and G-RISE Programs! We wish them much success in this new journey and we thank current and new student (peer) mentors for their participation and willingness to help a fellow graduate in his/her personal and professional development. Join us in welcoming our new trainees, Ana Vargas, Adrián Márquez, Axel Ufarry & Vivianka Ramos!



Ana S. Vargas-Virella grew up in Salinas. She earned a bachelor's degree in biomedical sciences from the Pontifical Catholic (PUCPR) University of Puerto Rico. As an undergraduate student, she conducted research under the Puerto Rico Louis Stokes Alliance for Minority Participation (PR-LSAMP) program. Additionally, she participated in the Massachusetts Institute of Technology's Summer Research Program, where she studied mechanisms of synaptic plasticity in the primary visual cortex. Her hobbies include baking, building Lego sets, listening to rock music, and playing video games.

Adrián Márquez is originally from Comerío. He completed a bachelor's degree in biology at the UPR Cayey. During his bachelor's degree he had several research experiences which helped him discover his passion for genetics. His hobbies include watching professional sports, sitcoms, or anime.

Axel Ufarry was born in Ponce but lives in Yauco. He completed a Bachelor of Science in Biology at the University of Puerto Rico, Mayaguez Campus, and a master's degree in Neuroscience from the Pontifical Catholic University of Puerto Rico. Communicating weather conditions is a hobby for him. Also, he dedicates time to writing short stories and scripts that convey a message to people or for entertainment.

Vivianka Ramos was born in Fort Lauderdale, Florida, but grew up in Adjuntas. She earned a bachelor's degree in biology with a concentration in Biomedicine from UPR, Ponce. She also completed a master's degree in biotechnology from the PUCPR in Ponce. Her hobbies include reading and immersing herself in various forms of interactive and narrative media.



RISE UP

Improving Writing and Communication for Career Growth: Emphasizing Publishing in Your Development Plan (IDP).

On August 16, 2024, Dr. Annelyn Torres conducted the annual professional development session (Virtually) on the Individual Development Plan (IDP). The focus was on the critical elements of IDPs, emphasizing their importance in career growth. Key takeaways included understanding the unique blend of skills and values each trainee brings and the vital role of scientific communication. The session highlighted how clear communication can boost effectiveness, foster professional relationships, enhance problem-solving, and support diversity and inclusion.

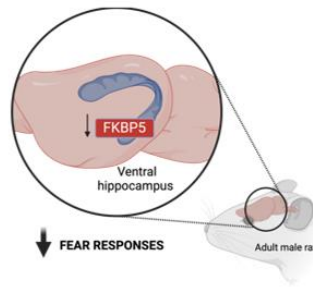


RECENT PUBLICATIONS

Congratulations to our former G-RISE trainees, Nashaly Irizarry, Sheila Valle, Roberto Morales, and the co-authors for their recent publications!



Irizarry-Méndez N, Criado-Marrero M, Hernandez A, Colón M, Porter JT. Reducing FKBP51 Expression in the Ventral Hippocampus Decreases Auditory Fear Conditioning in Male Rats. *Int J Mol Sci.* 2024 Jun 28;25(13):7097.



In this study, they found that reducing a specific protein (FKBP51) in the brain region called the ventral hippocampus made rats less fearful, without affecting their general behavior or stress hormone levels, suggesting that this protein plays a key role in how fear memories are formed and how animals respond to stress.

Link to the article:

<https://doi.org/10.3390/ijms25137097>

Sheila M. Valle Cortés, Jaileene Pérez Morales, Mariely Nieves Plaza, Darielys Maldonado, Swizel M. Tevenal Baez, Marc A. Negrón Blas, Cayetana Lazcano Etchebarne, José Feliciano, Gilberto Ruiz Deyá, Juan C. Santa Rosario, Pedro Santiago Cardona Integrating Proteomic Analysis and Machine Learning to Predict Prostate Cancer Aggressiveness. *Stats* 2024, 7(3), 875-893; <https://doi.org/10.3390/stats7030053>.

This study investigates biomarkers (Phospho-Rb S249, N-cadherin, β -catenin, and E-cadherin) to identify aggressive prostate cancer (PCa) cases, utilizing machine learning models as effective tools for the early detection and monitoring of high-risk patients.

Link to the article: <https://www.mdpi.com/2571-905X/7/3/53>



Morales-Silva RJ, Perez-Perez Y, Alvarado-Torres J, Rivera-Aviles N, Rodriguez-Torres G, Gelpi-Dominguez U, Dominguez-Padovani B, Amador-Maldonado A, Sepulveda-Orengo MT. Sex-specific effects of chronic stress prior to cocaine exposure on cue- vs drug-induced relapse after prolonged abstinence *Behav Brain Res.* 2024 Aug 14;474:115197.

This study looks at how chronic stress affects cocaine cravings in male and female rats. It found that after a long period without cocaine, stressed female rats were more likely to crave cocaine when they saw drug-related cues, while stressed male rats were more likely to crave the drug itself. These differences suggest that stress impacts drug cravings differently in males and females, highlighting the need for treatments that take these differences into account.

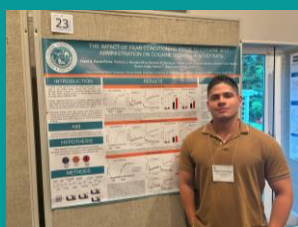
Link to the article: <https://pubmed.ncbi.nlm.nih.gov/38292056/>

We are beyond excited to share that Sheila and Roberto have officially completed all their degree requirements. Please join us in congratulating Dr. Sheila Valle Cortés and Dr. Roberto J. Morales on this incredible milestone! We could not be prouder of their accomplishments and look forward to seeing all the great things they will achieve in the future. **Congratulations!**

F-31 FELLOWSHIP AWARD

Big congratulations to our former G-RISE trainee, Yobet A. Perez-Perez (5th year), who was granted the Ruth L. Kirschstein F31 NRSA Fellowship Award (1F31DA060039-01). Under the mentorship of Dr. Marian Sepúlveda, he successfully submitted his application titled "Influence of fear conditioning prior to cocaine self-administration on cocaine seeking in adult rats: assessing the role of the frontostriatal circuits in trauma and cocaine use co-occurrence." Yobet's project seeks to elucidate neurophysiological mechanisms present in substance use disorder and trauma-related disorder comorbidity, concerning drug-seeking behavior in a rat model. His outcomes might help us understand how trauma-related disorders and SUD comorbidity alter the communication within brain circuits and may provide a basis for developing new pharmacological interventions that could reduce cocaine relapse. The F31 predoctoral fellowships from NIH support promising doctoral candidates who will perform dissertation research and training for a PhD degree in a scientific health-related field relevant to the mission of the NIH.

Congratulations, Yobet, keep up the amazing work!



DR. GARCÍA RINALDI FOUNDATION SUMMER PROGRAM 2024

Dr. García Rinaldi Foundation is a non-profit organization that has been serving the Puerto Rican health, education, and community since 1993. It promotes education to encourage high school and undergraduate students to pursue a health career. As part of the research component of its annual Summer Program, our 4th year G-RISE trainee, Yadiel Rivera, mentored a group of participants for the third consecutive year. This was held from May 16-August 2, 2024. His mentees were able to do written work and a presentation about his research project titled "The Role of Chronic Stress on Myeloid-Derived Suppressor Cells in the Ovarian Cancer Tumor Microenvironment". In addition, on Sunday, July 22, he participated in a "Boot Camp" that the program held as part of the Wellness component incorporated into its educational model for the summer program. The activity took place at "El Morro" in San Juan.

Congrats, Yadiel! Your commitment is truly inspiring!



BIOMEDICAL TRAINING PROGRAM DIRECTORS CONFERENCE



Our Program's Coordinator, Jean Marie Schmidt, attended the Biomedical Training Program Directors' Conference hosted by FASEB from July 8-10, 2024, in Bethesda, MD. This conference was a fantastic opportunity to engage in discussions on inclusive excellence in recruiting, advancing research mentoring, and promoting positive research laboratory culture. We were proud to be part of such an impactful event that focuses on trainee and faculty wellness, and we are eager to implement the insights and strategies gained from this experience to further enhance our program.

GRATITUDE AND TRANSITION IN ADVISORY COMMITTEE LEADERSHIP

A heartfelt thank you to Dr. Marian Sepúlveda and Dr. Roberto Morales for their dedicated service as members on the advisory committee for our G-RISE Program over the past years. Your feedback and commitment have been invaluable to our program. We warmly welcome Dr. Marcos Ramos as the new faculty member and look forward to the fresh insights and expertise he will bring to this role. Welcome to Yobet Pérez as the new student member!



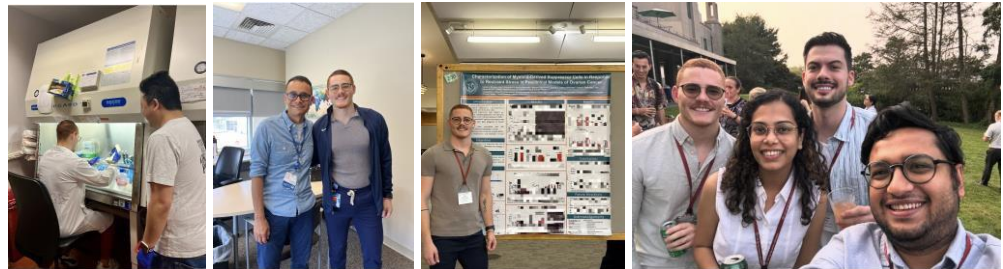
PRACTICAL APPROACH TO MOLECULAR BIOLOGY (PAMB) COURSE 2024

During August, the G-RISE Lab welcomed six new graduate students, four of them G-RISE trainees. They participated in the research course: Practical Approach to Molecular Biology. This 2-credit course provides first-year graduate students with specific technical skills. Throughout the month, students learn how to make clear written laboratory reports, interpreting relevant scientific papers, and predicting experimental outcomes. Students performed multiple techniques in a laboratory setting while gaining an understanding of the theories behind those techniques—including technical limitations. In this way this research course furthers the goals of the G-RISE program and complements the existing Ph.D. curriculum assisting the trainees with faster adaptation to the research labs.



U-54 PHSU/MCC PARTNERSHIP GRADUATE CAREER DEVELOPMENT DIVERSITY SCHOLARSHIP AWARDEE

Big congrats to our 4th-year G-RISE trainee, Yadiel Rivera, for his incredible journey! Thanks to the U-54 PHSU/MCC Partnership Graduate Career Development Diversity Scholarship, Yadiel completed a rotation in Dr. Paulo Rodríguez’s lab at Moffitt Cancer Center and presented his poster ‘Characterization of Myeloid-Derived Suppressor Cells in Response to Restraint Stress in Preclinical Models of Ovarian Cancer’ at the Mechanisms and Models of Cancer 2024 Meeting at Cold Spring Harbor Laboratory. Reflecting on the conference, Yadiel shared, “The conference was an incredible experience, providing an invaluable opportunity to connect with and learn from leading cancer research experts worldwide. Cold Spring Harbor Laboratory was a beautiful and inspiring setting that fostered peace and motivation for scientific inquiry.” We are thrilled to see Yadiel shine—wishing him many more achievements ahead!



The SuRE R16 CONFERENCE

The SuRE Resource Center, in cooperation with the National Institute of General Medical Sciences (NIGMS), celebrated its inaugural scientific conference for SuRE R16 participants on July 23-24, 2024, at the NIH Campus in Bethesda, MD. This event provided an excellent opportunity to share science with like-minded colleagues and to network with fellow R16 faculty, students, and research administrative staff.

We are proud to acknowledge our Program Director, Dr. Caroline Appleyard, and her mentee, James Torres (second-year G-RISE trainee), for their participation in this important meeting. Dr. Appleyard delivered an oral presentation titled ‘Impact of Endometriosis on Colonic Inflammation and Reactive Gliosis in an Animal Model.’ James presented his work on ‘Impact of Exercise on Uncoupling Protein 1 and Macrophage Phenotype in Mesenteric Adipose Tissue in an Animal Model of Endometriosis’. Congratulations to Dr. Appleyard and James for their outstanding contributions and representation of our program!



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