

Sol V. Perez Martir, PhD
Research Scientist II

Address: 11 Urb. Villa Nevarez # 1044, Rio Piedras, Puerto Rico 00927

Email: solveronica12@gmail.com Phone:(787) 390-6289

LinkedIn: www.linkedin.com/in/sol-v-pérez-mártir-ph-d-176602263

Professional Experience

Research Scientist II, 2023-Present

Comprehensive Cancer Center of the University of Puerto Rico, San Juan, P.R.

- To develop new research projects, prepare protocols, perform experiments and data analysis, and participate in manuscripts preparation.

NIGMS-RISE Program Trainee 2018-2022

Department of Pharmacology at Medical Sciences Campus, Rio Piedras, P.R.

- To participate in scientific conferences, conduct scientific experiments in molecular biology, present my thesis work and receive training to develop new scientific skills.

Teacher Assistant, 2017

Mitochondrial Biochemistry, Genetics and Molecular Biology Workshop at Medical Sciences Campus, Rio Piedras, P.R,

- To set laboratory stations and help in the development of experiments. Prepare certificates and keep participants informed of daily activities.

Conference Professor, 2014- 2016

School of Technical Studies, Turabo University, Gurabo, P.R.

- Courses taught: Introduction to pharmacy, Pharmacognosy, Pharmacotherapy and Pharmaceutical Chemistry
- Prepare conferences, exams and evaluate the students' performance.

Teacher Assistant, 2014-2016

JLM Professional Services, Quebradillas, P.R.

- Assist in development of workshops about technology, time management, evaluation methods among others that were offered to public school teachers. Evaluate and summarize the results of those workshops.

UPR MDACC Partnership in Cancer Research Trainee Program, 2013-2014

Department of Pharmaceutical Sciences at Medical Sciences Campus, Rio Piedras, P.R.

- Assist in the maintenance of a research laboratory and in the development of scientific studies related to breast cancer therapy resistance.

Education

Ph.D. in Pharmacology and Toxicology, 2022

University of Puerto Rico, Medical Sciences Campus, San Juan, PR

Advisor: Dr. Sylvette Ayala Pena

Thesis: Role of APE-1 on mitochondrial DNA damage in Huntington's disease age of onset.

Master in Pharmaceutical Sciences, 2014

University of Puerto Rico, Medical Sciences Campus, San Juan, PR

Advisor: Dr. Marianela Pérez Torres

Thesis: Role of Neuregulin 1 β in Resistance of Breast Cancer Cells to ErbB Therapies.

B.S. in Chemistry, 2011

University of Puerto Rico, Mayagüez Campus, Mayagüez, PR.

Relevant Courses

- Biochemistry
- Biopharmaceutical Process and Manufacture
- Cancer Genetics
- Cancer Prevention and Control
- Desing and Management of Cancer Clinical Trials
- Pharmacodynamics
- Pharmacognosy and Natural Products
- Pharmacology
- Physiology
- Principles of Research Design
- Medicinal Cannabis
- Medicinal Chemistry
- Molecular Techniques of Pharmacological Research
- Rigor and Reproducibility
- Science Development Communication Skills
- Scientists Teaching Science
- Statistics

Research Experience

Cancer Comprehensive Center of University of Puerto Rico, 2023-Present

Advisor: Dr. Julie Dutil

- Cancer biology and genetics

- Role of ancestry and genetics in breast cancer development.
- Techniques: Cell culture, DNA Isolation, Site Directed Mutagenesis, Transfection, Transformation, Protein Isolation, RNA Isolation, Quantitative PCR, Reverse Transcriptase- quantitative Polymerase Chain Reaction, SDS-PAGE, Western Blot, DNA Sequencing, RNA Sequencing, Global Diversity Array, 10 X Single-cell genomics, Data Entry

University of Puerto Rico-Medical Sciences Campus, Department of Pharmacology and Toxicology, 2017-2022

Advisor: Dr. Sylvette Ayala

- Research project in Molecular Pharmacology
- Role of Mitochondrial DNA damage in Huntington's disease
- Techniques: Cell culture, Dose-Response Assays, DNA Isolation, Protein Isolation, Quantitative-Polymerase Chain Reaction, SDS-PAGE, Western Blot, APE-1 endonuclease assay, Seahorse Extracellular Flux Assay, Determination of mitochondrial number and reactive oxygen species production using MitoSox and MitoTracker, Data analysis and interpretation, Troubleshooting, Report Writing, Statistical analysis using Graph pad prism

University of Puerto Rico-Medical Sciences Campus, Department of Pharmaceutical Sciences, 2011-2014

Advisor: Dr. Marianela Pérez Torres

- Research project in Molecular Biology
- Breast Cancer Resistance to ErbB therapies
- Techniques: Cell culture, Dose-Response Assays, RNA Isolation, Protein Isolation, Reverse Transcriptase- quantitative Polymerase Chain Reaction, SDS-PAGE, Western Blot, Cell Viability Assays (MTT and XTT), Data analysis and interpretation

University of Puerto Rico-Mayaguez Campus, Department of Chemistry, 2009-2011

Advisor: Dr. Nilka Rivera Portalatín

- Research project in Molecular Biology and Organic Chemistry
- Hormonal Replacement Therapy and Natural Compounds
- Techniques: Cell culture, Compounds Isolation from Plants, Column Chromatography, Thin Layer Chromatography, Report Writing, Rotary-Evaporator, Data analysis and interpretation

Presentations

“Mitochondrial energy metabolism differs between juvenile, average and late onset Huntington's disease skin fibroblasts”-2021.

16th Annual HD Therapeutic Conference, poster presentation

“Mitochondrial energy metabolism differs between juvenile, average and late onset Huntington's disease skin fibroblasts”- 2021.

41th Annual Research and Education Forum at University of Puerto Rico-Rico, Medical Sciences Campus, San Juan, P.R., oral presentation

“Dysregulated endonuclease activity of human and mouse apurinic/aprimidinic endonuclease 1 is associated with mitochondrial DNA damage in Huntington’s disease”-2020.

PR Physiological society’s 9th Annual meeting at University of Puerto Rico-Rico, Medical Sciences Campus, San Juan, P.R., poster presentation

“Regulation of APE1 endonuclease activity in Huntington’s disease by ROS-dependent and ROS independent mechanisms”- 2019

NHLBI Mitochondrial Biology Symposium on Mitochondrial Networks and Energetics at NIH, Bethesda, Maryland, US, poster presentation

“Mitochondria generated reactive oxygen species and APE-1 are associated with mitochondrial dysfunction in Huntington’s disease”-2019.

39th Annual Research and Education Forum at University of Puerto Rico Medical Sciences Campus, San Juan, P.R., poster presentation

“Mitochondria generated reactive oxygen species and APE-1 are associated with mitochondrial dysfunction in an in vitro model of Huntington’s disease” – 2019.

PR Physiological society’s 8th Annual meeting at University of Puerto Rico-Rio Piedras, Rio Piedras, P.R., poster presentation

“Role of Neuregulin 1 β and Epidermal Growth Factor in Resistance to ErbB Therapies”-2014.

34th Annual Research and Education Forum at University of Puerto Rico-Medical Sciences Campus, San Juan, P.R., poster presentation

“The “Hormone Replacement Therapy” Effects of Black Cohosh”- 2010.

Puerto Rico Interdisciplinary Scientific Meeting, Junior Technical Meeting at Mayaguez P.R, oral presentation

Publications

Ingrid M. Montes-Rodríguez PhD, Hilmaris Centeno-Girona MS, Sol V. Pérez-Mártir PhD, Noridza Rivera MD, Marcia Cruz-Correa MD, PhD. Actionable Genes and Carcinogenic pathways for Gastric Cancer in Latinos. (Recently submitted to Cancer Medicine Journal)

Sol V. Pérez-Mártir, María del Rocio Castro, Jaime Pérez-Lizardi, Ashley M. Jiménez Valentín, Javier Rivera Hernández, María M. López-Llegus, Isabel Vallecillo Viejo, Carlos A. Torres-Ramos and Sylvette Ayala-Peña. Dysregulated endonuclease activity of human and mouse apurinic/aprimidinic endonuclease 1 is associated with mitochondrial DNA damage in Huntington’s disease, Neuroscience Letters, (Manuscript Submitted)

Pérez-Mártir, S. V. (2022). Role of APE-1 on Mitochondrial DNA Damage in Huntington's Disease Age of Onset (Order No. 30241209). Available from ProQuest Dissertations & Theses Global. (2748266658).

<https://www.proquest.com/dissertations-theses/role-ape-1-on-mitochondrial-dna-damage/docview/2748266658/se-2>

Professional Development

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| 2025 | Abstracts evaluator at 45th Annual Research and Education Forum. |
| 2024 | Abstract Evaluator at “Puerto Rico en Datos” |
| 2024 | Career Planning for Early Career Scientist/iBiology YCA |
| 2024 | Grant Writing Webinar Series |
| 2024 | Mentor of the Dr. Garcia Rinaldi Foundation Summer Program |
| 2024 | Abstract and Poster Evaluator at 2nd UPRCCC Scientific Congress |
| 2024 | Antibody Basics Course /Abcam |
| 2024 | Flow cytometry Course /Abcam |
| 2024 | Fluorescent Imaging Course /Abcam |
| 2024 | Immunohistochemistry (IHC) Course /Abcam |
| 2024 | Western Blot Course /Abcam |
| 2024 | Fundamentals of RT-qPCR Course 1: Introduction to RT-qPCR and Gene Expression/Bio-Rad |
| 2024 | Fundamentals of RT-qPCR Course 2: RNA Sample Preparation Considerations/ Bio-Rad |
| 2024 | Fundamentals of RT-qPCR Course 3: Experimental Design for Gene Expression by RT-qPCR/ Bio-Rad |
| 2024 | Fundamentals of RT-qPCR Course 4: Assay Optimization for RT-qPCR/ Bio-Rad |
| 2024 | Fundamentals of RT-qPCR Course 5: Gene Expression Analysis by RT-qPCR/ Bio-Rad |
| 2024 | R Basics and Data Visualization Workshop Series/CCC-UPR |

2024 Shipping Infectious Substance and Related Materials /Online Training

2023 Bloodborne Pathogens Training/ CCC-UPR

2023 Biosafety Complete Training/CCC-UPR

2023 CITI Good Clinical Practice/CCC-UPR

2023 CITI Health and Information Privacy Security/CCC-UPR

2023 Human Research Biomedical research/CCC-UPR

2023 EHS training Module 1/CCC-UPR

2023 Covid 19 Training/CCC-UPR

2023 Gene Sequencing Training /Ponce Health Science University

2023 Next Sequencing Training/CCC-UPR

2023 Single Cell Genomics /UPR-Molecular Sciences Building

2023 Global Diversity Array training-/CCC-UPR

2021 Western Blotting Techniques/Bio-Rad

2021 CHDI Annual meeting

2020 Writing in the Sciences/Coursera

2020 Share your Research/Coursera

2020 HSG meeting 2020 “HD in Focus”

2020 Pharmacology Retreat/ UPR-Medical Sciences Campus

2020 PR Physiological society’s 9th Annual meeting/ San Juan, Puerto Rico

2019 Scientists Teaching Science/Online Course

2019 Communications Workshop/UPR-Medical Sciences Campus

2019 Let's Experiment: A Guide for Scientists Working at the Bench/iBiology

2019 PR Physiological society’s 8th Annual meeting/ San Juan, Puerto Rico

2018 Congress: 2nd International Conference on Global Challenges in Neglected Tropical Diseases / San Juan, Puerto Rico

Professional Affiliations

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| 2023 | Member of American Society for Biochemistry and Molecular Biology |
| 2023 | Member of Graduate Women in Science |
| 2021-present | Member of Society for Advancement of Chicanos/Hispanics and Native Americans in Science |
| 2019 | Member Puerto Rico Physiological Society |
| 2018 | Associated Member of European Huntington's Disease Network |
| 2018-present | Member of New York Academy of Sciences. |
| 2016-2022 | Member of Biomedical Graduate Students Association of the University of Puerto Rico, Medical Science Campus. |
| 2016-2022 | Member of Puerto Rico Huntington Foundation. |
| 2012-2014 | Graduate Studies Representative, General Student Council at Medical Sciences Campus |
| 2012 | Member Rho Chi Honor Society |

Fellowships, Awards and Honors

- Training Award: 2025 Microbiome, Immunology and Cancer Bioinformatics Short Course offered by Duke Department of Biostatistics and Bioinformatics
- NIGMS-RISE Program Fellowship, 2018-2022
- Second Award: In Poster Presentation – “Annual Meeting of the Puerto Rico Physiological Society”, 2020
- Fellowship, “Becas Stanley & Georgene Pasarell, Fundación Comunitaria de Puerto Rico”, 2015-2018.
- UPRAA Ford Motor Company Fund Stem Scholarship, 2015
- Academic Excellence Award, 2014
- Honor Student Award, 2014
- Student Leader Award, 2014

- UPR MDACC Partnership in Cancer Research Trainee Program, 2013-2014