

Advancing Competitive Biomedical Research in Puerto Rico

## Note From Our PI

By Dr. Jose R. Rodríguez-Medina

The WV/PR/INBRE collaboration in Natural Products Research began with a Virtual Symposium Series on January 29, 2021, supported by Dr. Ming Lei, Director of the Division for Research Capacity Building at NIGMS, and INBRE PIs Drs. Gary Rankin and Jose R. Rodríguez-Medina. Early-career investigators quickly formed partnerships, leading to preliminary studies between institutions in Puerto Rico and West Virginia. Subsequent symposia in 2021 and 2023 expanded the collaboration, solidifying a key partnership between the Interamerican University of Puerto Rico and West Liberty University.

In 2024, the collaboration grew to include a Summer Research Exchange Program, enabling students from both regions to conduct research across labs. These efforts culminated in the Fourth Natural Products Research Symposium held in San Juan on May 13, 2025, featuring faculty presentations, 17 student posters, and a keynote by Dr. Christopher R. McCurdy of the University of Florida.

This milestone event highlights the collaboration's success, with plans underway for next year's symposium in West Virginia. Updates will follow in future newsletters.

## 4<sup>th</sup> Natural Products Symposium

By Christina Vega

A dynamic collaboration between the West Virginia IDeA Network of Biomedical Research Excellence (WV-INBRE) and the Puerto Rico IDeA Network of Biomedical Research Excellence (PR-INBRE) brought together scientists, faculty, and students for two days of scientific exchange and networking centered around the field of natural products research. Held in the vibrant setting of San Juan, the 2025 symposium featured a rich program of keynote talks, faculty presentations, and poster sessions, all designed to promote interdisciplinary collaboration and showcase emerging biomedical research.



Participants from West Virginia and Puerto Rico INBREs. This symposium provided a platform for young researchers to engage in dialogue, receive feedback, and build connections with established experts.

## WHAT'S NEW

### RESEARCH ROADMAP

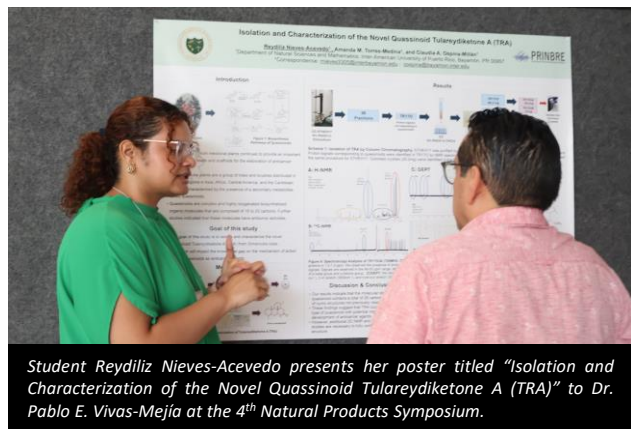
Learn about  
Dr. Claudia A. Ospina-Millán's  
path towards research excellence

### NEW TECHNOLOGIES

The PR-INBRE CRI boasts highly  
acclaimed instruments in Single-Cell  
sequencing

### CONGRATULATIONS

Join us in congratulating PR-INBRE  
students for their achievements



Student Reydliz Nieves-Acevedo presents her poster titled "Isolation and Characterization of the Novel Quassinoid Tulareydiketone A (TRA)" to Dr. Pablo E. Vivas-Mejía at the 4<sup>th</sup> Natural Products Symposium.

## A Shared Vision for the Future

The 4th Natural Products Symposium exemplified the shared commitment of PR-INBRE and WV-INBRE to promote innovative, inclusive, and impactful biomedical research. Through scientific exchange and cross-institutional mentorship, the symposium continues to build bridges between researchers and communities, setting the stage for future discoveries in natural products and beyond.

Stay connected for future updates and opportunities from the WV-INBRE and PR-INBRE networks as they continue to support the next generation of biomedical scientists.

# Research Roadmap

By Dr. Claudia A. Ospina-Millán

My passion for chemistry and research on natural products began as an undergraduate college student in Colombia. My inspiration was my organic chemistry professor, who connected the topics to everyday life and invited me to join his research group on natural products.

I completed a PhD degree in the isolation and chemical elucidation of marine natural products at the University of Puerto Rico. The discovery of new molecules, their purification, and the elucidation of their chemical structure is exciting. Identifying a known substance in an instrument's database is not the same as purifying complex molecules, characterizing them if they are unknown, and holding the purified compound in your hands. We can also assign a name to a newly identified substance when reporting our scientific work. It is truly challenging and exciting work.

I began my journey toward creating my research group as soon as I completed my PhD and began teaching at the university. Today, I am a faculty member at the Bayamón Campus of the Interamerican University of Puerto Rico (IAUPR). I have a research group of highly talented undergraduate students from diverse disciplines who share my passion for chemistry, notably the isolation and discovery of natural products from tropical plants with potential anticancer and antimicrobial properties.

I consistently received support from the PR-INBRE program, essential for establishing my laboratory, conducting independent research, and overcoming the challenges I encountered. In the future, I plan to continue strengthening undergraduate research in Puerto Rico in the field of drug discovery through the isolation and structural elucidation of new natural products isolated from plants with medicinal properties.



Dr. Claudia A. Ospina-Millán (fifth from left to right) with students from her research laboratory at the PR-INBRE/West Virginia-INBRE 4th Natural Products Symposium on May 13, 2025, in San Juan, Puerto Rico.

## Congratulations PR-INBRE students!

We're proud to celebrate four of Dr. Ospina-Millán's students who recently completed their undergraduate degrees: *Reydiliz Nieves-Acevedo* (Junior Research Associate or JRA Student), *Stella Alicea-Ayala*, *Aliana González-Cortés*, and *Paula A. Vega-García* (JRA Student). These outstanding students earned a Bachelor of Science from the IAUPR and received various high honors for their hard work and dedication. Stay tuned for an upcoming issue where we'll share more about their achievements and plans.

## New Technologies

By Dr. Beatriz Zayas-Rivera

The Centralized Research Instrumentation (CRI) Core boasts highly acclaimed instruments. The Sequencing Genomic Facility (SGF), located at the Molecular Science Research Center (MSRC) and directed by Dr. Riccardo Papa, has the most advanced technology for single-cell sequencing. The Chromium Controller system from 10x Genomics, coupled with the Illumina NextSeq 2000, can be applied to single-cell RNA sequencing, single-cell ATAC-seq, Visium Spatial Gene Expression, profiling gene expression, profiling surface protein expression, profiling CRISPR edits, characterizing transcriptomic profiles, and many other applications. For service inquiries, please contact Silvia Planas, Core Manager, at [silvia.planas@upr.edu](mailto:silvia.planas@upr.edu) or [sgf.upr@gmail.com](mailto:sgf.upr@gmail.com).



Left to right: Aliana González, Reydiliz Nieves, and Stella Alicea at the IAUPR graduation ceremony on June 13, 2025.