

Advancing Competitive Biomedical Research in Puerto Rico

Note From Our PI

By Dr. José R. Rodríguez-Medina

I am delighted to introduce this special edition of the PR-INBRE Newsletter, dedicated to celebrating the remarkable achievements of our students. This issue highlights their academic, research, and professional accomplishments, showcasing the dedication, talent, and perseverance that define our program. I take great pride in their successes and am excited to share these inspiring stories with our broader community.

During the 2021–2025 grant cycle, PR-INBRE has supported 59 undergraduate students. Of these, 43 are actively working toward their Bachelor's degrees, and 16 have graduated, 11 of whom have gone on to pursue Ph.D. or M.S. programs. At the graduate level, 9 are currently enrolled in advanced degree programs, and 2 have completed their studies.

Our students are already contributing to the biomedical workforce; 50% employed in Puerto Rico, 27% on the U.S. mainland, and 2% in Europe, in fields spanning research, healthcare, and education. These outcomes reflect the growing impact of our program, not only in academic development but also in strengthening the national scientific and professional landscape.

PR-INBRE remains committed to nurturing talent and expanding opportunities. Through this special edition, we celebrate our students' journeys and reaffirm our mission to build a strong pipeline for graduate education and research careers that benefit Puerto Rico and beyond.



4th Undergraduate Summer Internship Program participants (left to right: Edwin Figueroa-Pérez, Edualys Quiñones, Yomilka Molina, Adrián N. Pérez-Lafitte, Alondra Agosto-Sánchez, Naomi Y. Cintrón, Génesis Suárez-Rentas, Juan Figueroa-Pérez) during a lab visit at the UPR Medical Sciences Campus on June 2, 2025.

What's New?

4th Natural Products Symposium

Take a look at highlights from this activity between PR-INBRE and West Virginia-INBRE (WV-INBRE)

4th Undergraduate Summer Internship Program PR-INBRE: Kick-Off Week and 2025 Poster Session

Launching a week of hands-on research, workshops, and mentorship to jumpstart biomedical careers.

Where Are They Now?

Learn about where Dr. Claudia A. Ospina-Millán's students are after completing their undergraduate degrees.

+ MUCH MORE!

2025 PR-INBRE External Advisory Committee Meeting and Annual Retreat

By Christina Vega



Students of the Junior Research Associate (JRA) Fellowships Program pose with Dr. Juan López-Garriga, Dr. Loyda B. Méndez-Torres, Dr. José R. Rodríguez-Medina, and Dr. José F. Rodríguez-Orengo during the 2025 PR-INBRE External Advisory Committee (EAC) Meeting and Annual Retreat on Sunday, March 23, 2025, in Río Grande, Puerto Rico.

The 2025 PR-INBRE External Advisory Committee (EAC) Meeting and Annual Retreat took place from March 21-23, 2025, at the Hyatt Regency Grand Reserve in Río Grande, Puerto Rico. Set against the backdrop of the island's northeastern coast, the 2.5-day meeting brought together 90 participants from across the PR-INBRE Network, including faculty, students, and distinguished guests. The meeting was designed to foster a collaborative environment that emphasized undergraduate and graduate student engagement in cutting-edge research, professional growth, and cross-institutional networking.

Students from multiple institutions across Puerto Rico played a central role in the Retreat. They presented their research findings through both oral presentations and a dynamic poster session. These sessions were critical for students to communicate their research findings to the investigators, program officials, and members of the External Advisory

Committee, which offered valuable feedback and mentorship. The presentations served as a platform for students to refine their scientific communication skills, gain confidence in their work, and receive constructive guidance to further their academic and professional development.

In addition to research presentations, students had the opportunity to attend keynote seminars by distinguished guest speakers, participate in career development discussions, and engage with other members of the PR-INBRE Network. The Retreat offered a unique platform for early-stage investigators and trainees to network with established scientists and explore potential collaborations across institutions.

University of Puerto Rico officials, program administrators, and key stakeholders were also in attendance, demonstrating strong institutional support for the program's mission. Their presence reinforced the collective commitment to strengthening Puerto Rico's research infrastructure, enhancing training programs, and cultivating the next generation of biomedical scientists on the island.



Students meet with Dr. Loyda B. Méndez-Torres, STCE Coordinator, and Sandra W. Charriez-Rivera, STCE Assistant Project Coordinator

Overall, the 2025 PR-INBRE External Advisory Committee Meeting and Annual Retreat was a resounding success, underscoring the vital contributions of student researchers to the network's mission. The event highlighted the importance of mentorship, community-building, and interdisciplinary collaboration in shaping the future of biomedical research in Puerto Rico. It set an optimistic tone for continued growth, innovation, and scientific excellence across the island's academic and research institutions.

We are looking forward to the future accomplishments our students will showcase at the 2026 PR-INBRE EAC Meeting and Annual Retreat.



Daraishka Pérez-Caraballo presents "The PLC- β Inhibitor Edelfosine as a Potential Therapeutic Agent for the Treatment of Epilepsy".

María F. Acevedo-Kury

UPR, Cayey Campus

"Time-Dependent Effects of Tip60 Knockdown on Alcohol Sensitivity and Tolerance in *Drosophila melanogaster*"

Bianca N. Alonso-Cardona

UPR, Río Piedras Campus

"Isolation and Identification of Vaginal Probiotics in Hispanic Women Living in Puerto Rico"

Derik P. Amely-Gavilán

Interamerican UPR, Metropolitan Campus

"Formulation Optimization of Acetylated Inulin Nanoparticles for Drug Delivery"

Adriana Y. Aponte-Ramos

Interamerican UPR, Bayamón Campus

"Elucidation of the Mechanism of Action of Ergosterol Peroxide through Modulation of the ANKZF1/VCP Complex Inhibitor"

Verónica G. Bado-García

UPR, Mayagüez Campus

"Monitoring the Spread of Inclusion Body Disease in Puerto Rico by the Invasive Species *Boa Constrictor*"

Juan E. Figueroa-Hiraldo

UPR, Cayey Campus

"The Impact of Plant Nanosuspensions on Metabolic Pathways and Chemotherapy-Induced Cytotoxicity in NSCLC"

Edwin Figueroa-Pérez

UPR, Cayey Campus

"Anti-metastatic Properties of the Triterpene Diosgenin on Lung Carcinoma Cells"

Mayra Luciano-Torres

Universidad Ana G. Méndez, Cupey Campus

"Anti-cancer Potential of the Novel ABQ-48 in NCI-H460 Lung Cancer Cells"

Alexander Y. Morlá-Sevilla

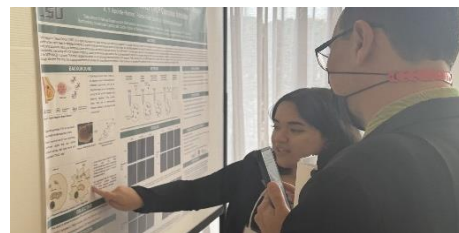
UPR, Río Piedras Campus

"Role of Lipopolysaccharides from *Porphyromonas gingivalis* in Astrocyte Activation and Tumor Progression"

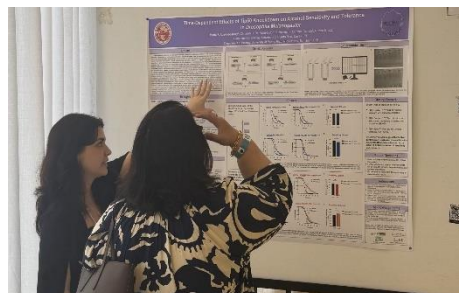
Karina Marín-Hernández

UPR, Río Piedras Campus

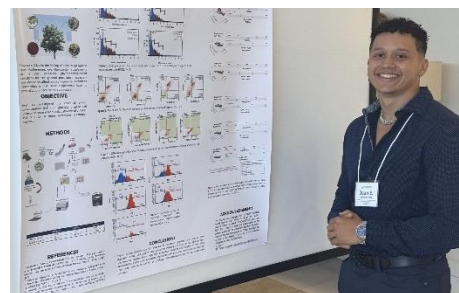
"Metabolomic analysis of environmental contaminant accumulation in *Diadema antillarum* Across Four Puerto Rican Sites"



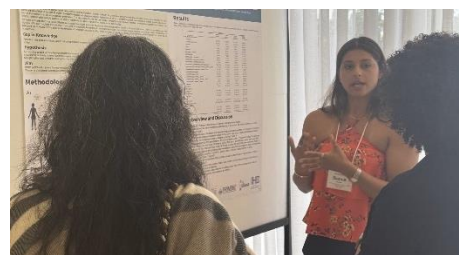
Adriana Y. Aponte-Ramos presents her poster to Dr. Luis E. Vázquez-Quinones, professor at the Interamerican UPR Arecibo Campus.



María F. Acevedo-Kury presents her poster to Dr. Zaira Mateo-Mayol



Juan E. Figueroa-Hiraldo poses next to his poster.



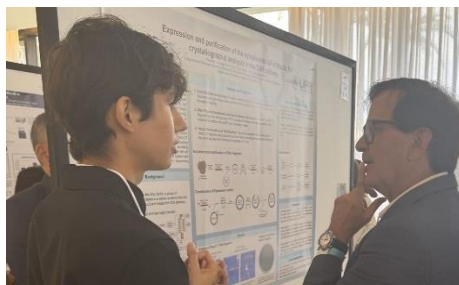
Bianca N. Alonso-Cardona presents her poster to Dr. Maribel Campos-Rivera (left).



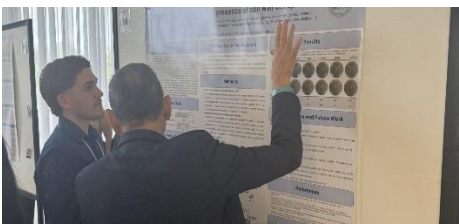
Karina A. Marín-Hernández presents her poster to Dr. Jim R. Brown, EAC Member.



Paula A. Vega-García presents her poster to Dr. Yisel M. Cantres-Rosario.



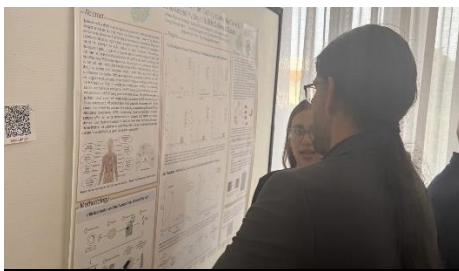
Giancarlo J. Nevado-Cruz presents his poster to Dr. José F. Rodríguez-Orengo, Core Director of the STCE.



Andrés X. Narváez-Mateo presents his poster to Dr. José R. Rodríguez-Medina, Principal Investigator of the PR-INBRE.



Valentina A. Vélez-Vélez presents her poster to Dr. Christian Agosto-Burgos.



Ariana Negroni-Santiago presents her poster to Dr. Rafael Maldonado Hernández, DRPP Researcher.

Andrés X. Narváez-Mateo

UPR, Mayagüez Campus

“Viability Assay of *S. cerevisiae* to AuNP-Peptide Conjugates in the Presence of Cell Wall Disruptors”

Ariana Negroni-Santiago

UPR, Mayagüez Campus

“Recombinant Hemoglobin I from *Lucina pectinata*: The HemeFe^{III}-H₂S Scenario to Assess Hydrogen Sulfide Delivery to Tissues”

Giancarlo J. Nevado-Cruz

UPR, Mayagüez Campus

“Expression and purification of the cytoplasmic tail of Wsc2p for crystallographic analysis in the CWI pathway”

Reydliz Nieves-Acevedo

Interamerican UPR, Bayamón Campus

“Isolation and Characterization of the Novel Quassinoid Tulareydiketone A (TRA) from *Simarouba tulae*”

Joniel Rodríguez-Hernández

Universidad del Sagrado Corazón

“Oxidative DNA Damage in Lungs of Juvenile Mice Exposed to Particulate Matter”

Nathaly M. Román Droz

Interamerican UPR, Metropolitan Campus

“Investigating the Efficacy of Synthetic Unsaturated Fatty Acids in *Bacillus cereus*”

Daniela A. Torres-Oyola

UPR, Humacao Campus

“Investigating the Immunomodulatory and Antitumor Properties of *Kalanchoe Species*”

Paula Vega-García

Interamerican UPR, Bayamón Campus

“Chemical Modification and Evaluation of the Anticancer Properties of Cembrane Diterpenes Isolated from *Nicotiana tabacum*”

Valentina A. Vélez-Vélez

Pontificia Universidad Católica de Puerto Rico

“Optimization of Gene Expression Analysis in *Caenorhabditis elegans*”



(Left to right) Dr. Loyda B. Méndez-Torres (STCE Core Coordinator), Dr. José F. Rodríguez-Orengo (STCE Core Director), Alexander Y. Morla-Sevilla (Undergraduate Student), Dr. Yisel M. Cantres-Rosario (Assistant Professor and Mentor, UPR-MSO), and Dr. José R. Rodríguez-Medina (PR-INBRE Principal Investigator). Morla-Sevilla won first place (tied) for an outstanding poster presentation at the event.



(Left to right) Dr. Loyda B. Méndez-Torres (STCE Core Coordinator), Dr. José F. Rodríguez-Orengo (STCE Core Director), Dr. Yamixa Delgado-Reyes (Associate Professor and Mentor, San Juan Bautista School of Medicine), Edwin Figueroa-Pérez (Undergraduate Student), and Dr. José R. Rodríguez-Medina (PR-INBRE Principal Investigator). Figueroa-Pérez won third place for an outstanding poster presentation at the event.



(Left to right) Dr. Loyda B. Méndez-Torres (STCE Core Coordinator), Dr. José F. Rodríguez-Orengo (STCE Core Director), Ariana Negrón-Santiago (Undergraduate Student), Dr. Juan López-Garriga (Professor and Mentor, UPR-Mayagüez), and Dr. José R. Rodríguez-Medina (PR-INBRE Principal Investigator). Ms. Negrón was selected to participate in the UPR/MDACC Partnership Summer Internship Program at the University of Texas MD Anderson Cancer Center.

Ivette S. Agront-Medina

Universidad Ana G. Méndez, Cupey Campus
 “BQ 108-Induced Cytotoxicity and Apoptosis in Prostate Cancer Cells”

Adneliz G. Cátala-Cátala

Universidad Ana G. Méndez, Cupey Campus
 “Fine particulate matter’s effects on postnatal reproductive development a scoping review”

Neishaliz Cotto-Heredia

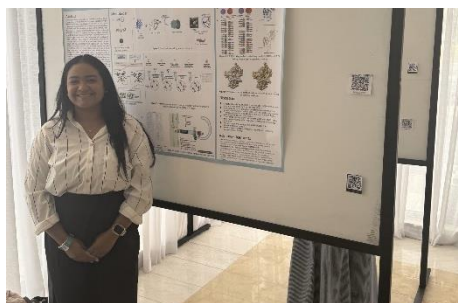
Pontificia Universidad Católica de Puerto Rico
 “Sod1-G92A interaction with Atg32 in *Saccharomyces cerevisiae*”

Daraishka M. Pérez-Caraballo

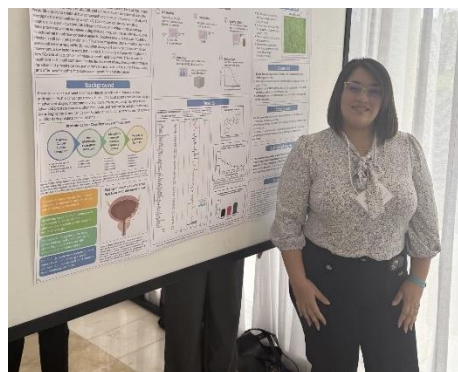
San Juan Bautista School of Medicine
 “The PLC- β Inhibitor Edelfosine as a Potential Therapeutic Agent for the Treatment of Epilepsy”

Alejandra P. Vázquez-Medina

UPR, Medical Sciences Campus
 “Dual-Approach Metabolomics Reveals Conserved Neurogenic Metabolic Signatures Across In Vitro and In Vivo Models”



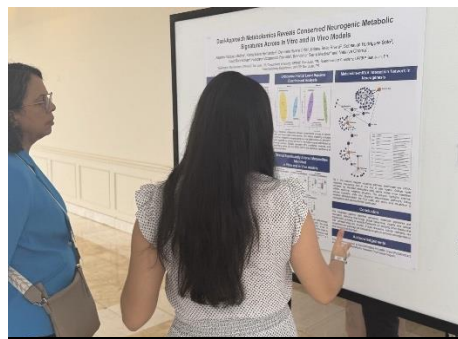
Neishaliz Cotto-Heredia poses next to her poster.



Ivette S. Agront-Medina poses next to her poster.



(Left) Adneliz G. Cátala-Cátala presents her poster to Dr. Maribel Campos-Rivera, Principal Investigator, SEPA.



Alejandra P. Vázquez-Medina presents her poster to Dr. Elsie I. Parés-Matos, DRPP Researcher.



(Left to right) Dr. Layda B. Méndez-Torres (STCE Core Coordinator), Dr. José F. Rodríguez-Orengo (STCE Core Director), Dr. Yamixa Delgado-Reyes (Associate Professor and Mentor, San Juan Bautista School of Medicine), Daraishka M. Pérez-Caraballo (Graduate Student), and Dr. José R. Rodríguez-Medina (PR-INBRE Principal Investigator). Pérez-Caraballo won first place (tied) for an outstanding poster presentation at the event.



Daraishka M. Pérez-Caraballo, a graduate student from the University of San Juan Bautista, delivered her elevator pitch on her research project titled “The PLC- β Inhibitor Edelfosine as a Potential Therapeutic Agent for the Treatment of Epilepsy” to the audience.

4th Natural Products Symposium

By Evelyn Rivera-Colón

On May 13, 2025, at the iconic Caribe Hilton Hotel in San Juan, Puerto Rico, the 4th Natural Products Symposium took place. This significant scientific gathering brought together faculty, researchers, and students from the Puerto Rico IDeA Network of Biomedical Research Excellence (PR-INBRE) and the West Virginia INBRE (WV-INBRE), underscoring a strong commitment to collaborative research across institutions and regions.

The symposium featured a robust agenda that included oral presentations, poster sessions, and interactive discussions. Participants showcased the latest discoveries and methodologies in natural products research, with topics spanning marine and terrestrial biodiversity, pharmacognosy, medicinal chemistry, pharmacology, and early-stage drug development.

Students from both INBRE programs actively contributed by presenting their research, engaging with peers and mentors, and gaining valuable feedback. The cross-pollination of ideas between institutions fostered a rich environment for mentorship and professional growth. The event reaffirmed the vital contributions of INBRE programs in developing the next generation of scientists and in promoting interdisciplinary research efforts.



Chantal J. Arbelo-Mejías presents her poster titled "Harnessing *Kalanchoe laetivirens* to modulate myeloid cells and inhibit cancer proliferation and migration" to Dr. José R. Rodríguez Medina, PI.



Maria Milanés-Russi poses with Dr. Joseph Horzempa of West Liberty University during the 4th Natural Products Symposium in San Juan, Puerto Rico. Milanés-Russi participated in a 2023 summer exchange with West Virginia students and was mentored by Dr. Horzempa.

Event Highlights:

Featuring innovative work across a range of topics and underscoring the strong culture of inquiry and academic engagement at all levels, from Puerto Rico and West Virginia students.

- A total of 15 research posters were presented, including contributions from 14 undergraduate students and one graduate student.

Key Themes Researched by Students:

- Isolation and chemical characterization of novel natural compounds from plants, including *Simarouba tulae*, *Tulareydiketone A*, *Clusia guttifera*, and *Rhus typhina*
- Evaluation of antimicrobial properties of plant extracts, with a focus on activity against resistant bacteria such as MRSA
- Investigation of anticancer effects of natural products and synthetic analogs on ovarian and other cancer cell lines
- Analysis of chemical composition and biological activities of plant species like *Picramnia pentandra* and *Kalanchoe*, emphasizing immunomodulatory and antitumor effects
- Assessment of synthetic unsaturated fatty acids for antibacterial activity against *Bacillus cereus*

UNDERGRADUATE STUDENT ABSTRACTS

Stella Alicea-Ayala

Interamerican UPR, Bayamón Campus
"Isolation, Preparation, and Characterization of SKD"

Reydliz Nieves-Acevedo

Interamerican UPR, Bayamón Campus
"Isolation and Characterization of the Novel Quassinoid Tulareydiketone A (TRA)"

Patricia Romero-Cruz

Interamerican UPR, Bayamón Campus
"Chemical Analysis and Biological Evaluation of *Clusia guttifera*"

Morgan Lesnansky

West Liberty University
"Ethanollic extract of *Clusia guttifera* is Bactericidal Against Methicillin-Resistant *Staphylococcus aureus*"

Paula Vega-García

Interamerican UPR, Bayamón Campus
"Chemical Modification and Evaluation of the Anticancer Properties of Cembrane Diterpenes Isolated from *Nicotiana tabacum*"

Aliana González-Cortés

Interamerican UPR, Bayamón Campus
"Study of the Chemical Composition and Biological Activities of *Picramnia pentandra*"

Ibrahim J. Cruz-Nieves

Interamerican UPR, Bayamón Campus
"Chemical Analysis of Leaf Extracts from *Staghorn sumac*"

Caleb Maxson

West Virginia Wesleyan College
"Effect of Short Chain Capsaicin Analogs on Ovarian Cancer Cells"

Raveena Navalgund

West Virginia Wesleyan College
"Impacts of Long Chain Capsaicin Analog Treatments on A2780cis Ovarian Cancer Cells"

Reagan Gray

West Liberty University
"The Isolation and Characterization of Antimicrobial Compounds Extracted from *Rhus typhina*"



Undergraduate students Patricia Romero-Cruz from the Interamerican UPR, Bayamón Campus, and Morgan Lesnansky from West Liberty University pose at the 4th Natural Products Symposium in San Juan, Puerto Rico.

Megan Brozik

West Virginia Wesleyan College
“The Effect of Reishi Mushroom (*Ganoderma lucidum*) Extract and Ganoderic Acid D on Cell Proliferation and Migration in the Ovarian Cancer Line A2780cis”

Nathaly M. Román-Droz

Interamerican UPR, Metropolitan Campus
“Investigating the Efficacy of Synthetic Unsaturated Fatty Acids in *Bacillus cereus*”

Daniela A. Torres-Oyola

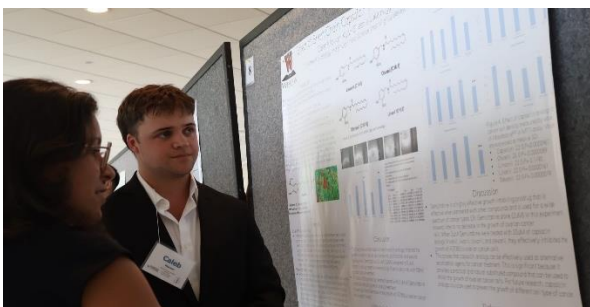
UPR, Humacao Campus
“Investigating the Immunomodulatory and Antitumor Properties of *Kalanchoe* Species”

Chantal J. Arbelo-Mejías

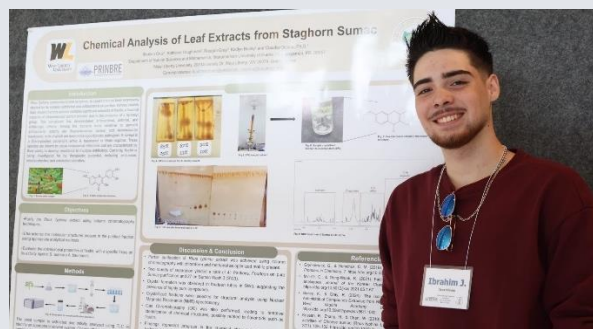
UPR, Humacao Campus
“Harnessing *Kalanchoe laetivirens* to Modulate Myeloid Cells and Inhibit Cancer Proliferation and Migration”



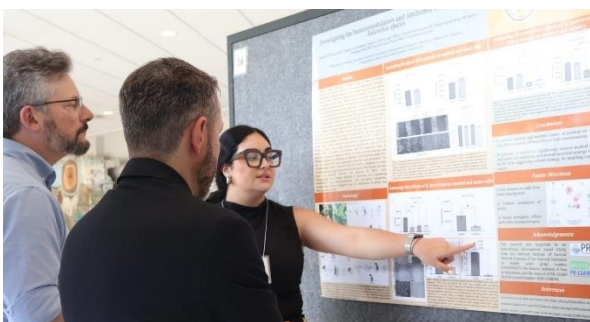
Raveena Navalgund presents her poster titled “Impacts of Long Chain Capsaicin Analog Treatments on A2780cis Ovarian Cancer Cells” to Dr. Shelby Heath of West Liberty University.



Caleb Maxson of West Virginia Wesleyan College presents his poster titled “Effect of Short Chain Capsaicin Analogs on Ovarian Cancer Cells” to Dr. Loyda B. Méndez-Torres, STCE Program Coordinator.



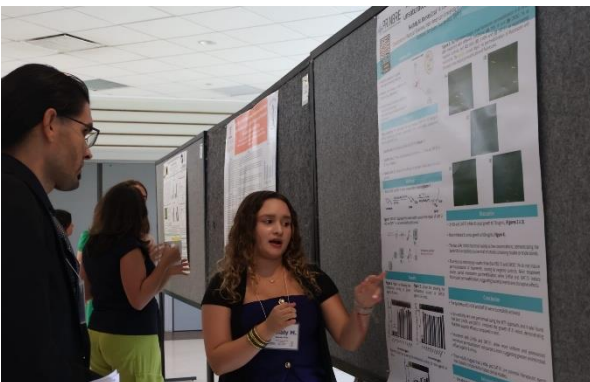
Ibrahim J. Cruz-Nieves poses next to his poster titled “Chemical Analysis of Leaf Extracts from Staghorn sumac”.



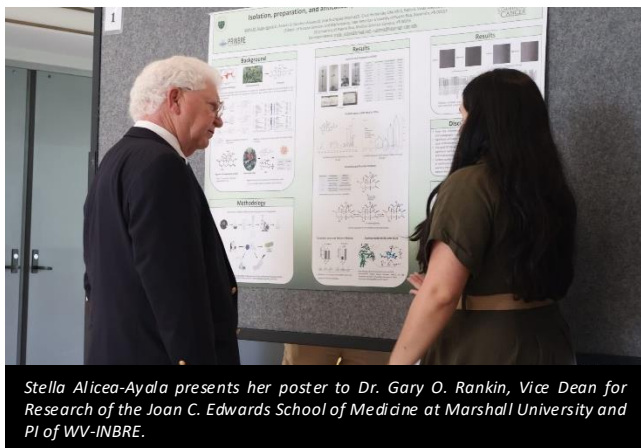
Daniela A. Torres-Oyola presents her poster to Dr. Luke Huggins (left) and Dr. Joseph Horzempa (right).



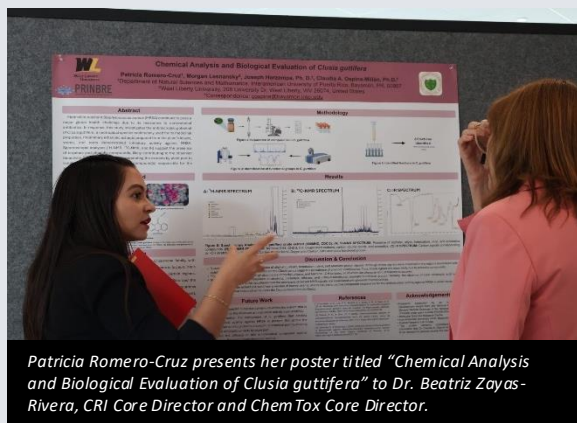
Megan Brozik of West Virginia Wesleyan College presents her poster to Dr. Loyda B. Méndez-Torres.



Nathaly M. Román-Droz presents her poster to Dr. Rafael Maldonado-Hernández.



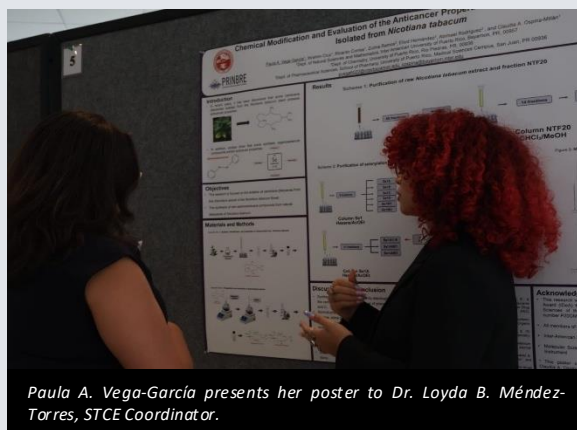
Stella Alicea-Ayala presents her poster to Dr. Gary O. Rankin, Vice Dean for Research of the Joan C. Edwards School of Medicine at Marshall University and PI of WV-INBRE.



Patricia Romero-Cruz presents her poster titled "Chemical Analysis and Biological Evaluation of *Clusia guttifer*" to Dr. Beatriz Zayas-Rivera, CRI Core Director and Chem Tox Core Director.



(Left to right) Ibrahim J. Cruz, Patricia Romero, María Milanés, Aliana González, Dr. Claudia Ospina, Stella Alicea, Reydiliz Nieves, Paula A. Vega and Ricardo Correa. Undergraduate students from Dr. Ospina-Millán's laboratory at the Interamerican University at Bayamón Campus.



Paula A. Vega-García presents her poster to Dr. Loyda B. Méndez-Torres, STCE Coordinator.



(Left to right) Reagan Gray, María Milanés, Dr. Joseph Horzempa, Deanna Schmitt, Shelby Heath, and Morgan Lesnansky. Undergraduate students from Dr. Horzempa's laboratory at West Liberty University.

Natural Products continues to be a field of interest in the discovery of new drugs



GRADUATE STUDENT ABSTRACTS



Laurie Santos presents her poster to Dr. Claudia A. Ospina-Millán.

Laurie Santos

Universidad Central del Caribe, Bayamón
"Plant Extracts from Oregano, Cinnamon and Graviola Induce Metabolic Reprogramming to Non-Small Cell Lung Carcinoma"

4th Undergraduate Summer Internship Program: Kick-Off Week

By Sandra W. Charriez-Rivera

From June 1-7, 2025, the fourth cycle of the Undergraduate Summer Internship Program began with Kick Off Week, sponsored by PR-INBRE and supported by the Science and Technology Competency Education (STCE Core). Below is a comprehensive overview of the key highlights from the week's activities.

Welcome, Integration, and Laboratory Visits:

During the first seven days, the cohort comprising 26 students were selected for the Junior Research Associate (JRA) Students Fellowships Program, alongside 7 additional students from collaborative programs, shared accommodations within the same residence hall. This arrangement was intentionally designed to promote the establishment of professional networks and to foster a spirit of camaraderie among participants. Throughout this period, the group toured various laboratories affiliated with the PR-INBRE network. These visits included in-depth demonstrations of the instrumental capabilities offered by the Centralized Instrumentation Core facilities and facilitated interactions between students and prominent researchers leading scientific efforts across the island.



4th Undergraduate Summer Internship Program participants visit the University of Puerto Rico, Medical Sciences Campus on June 2, 2025.



Students during their visit to the Translational Proteomics Center at the University of Puerto Rico Comprehensive Cancer Center, with technician Ana E. Rodríguez on June 3, 2025.

Training Workshops:

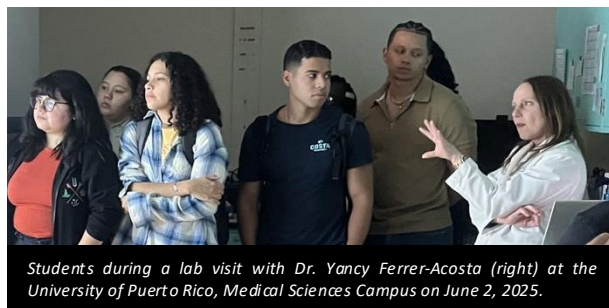
Student participants actively engaged in the following instructional workshops.

- An introductory workshop on data science and statistical analysis was conducted using **Python** and **R**, led by Dr. Judith Rodríguez and Dr. Luis E. Vázquez-Quñones of the Bioinformatics Core.
- A workshop on **community engagement**, led by Dr. Edna Acosta-Pérez of the STCE Core, focused on developing and implementing effective strategies to actively involve local communities in the design, execution, and dissemination of research projects.
- A workshop on **cell culture** techniques was conducted with Dr. Beatriz Zayas-Rivera of the CRI Core, covering the fundamental principles and best practices of cell cultivation, utilizing the specialized equipment available at the CRI Core facilities.

Additional Activities:

Dr. Loyda B. Méndez-Torres, STCE Coordinator, delivered the opening remarks and introduced the PR-INBRE / STCE Core program. Throughout the week and the duration of the internship, she provided ongoing support to the students by offering personalized mentorship and guidance as they advanced their research projects.

- An **Individual Development Plan (IDP)** session with Dr. Juan López-Garriga of the STCE Core was conducted to guide students with scientific career planning and the establishment of professional goals.
- A guided tour of the **UPR-Molecular Sciences Research Center (MSRC)** was conducted with Dr. Mario J. Maura-Pérez and Dr. Martin Montoya-Zavala, highlighting cutting-edge research initiatives in molecular sciences and showcasing the center's advanced technologies and instrumentation.



Students during a lab visit with Dr. Yancy Ferrer-Acosta (right) at the University of Puerto Rico, Medical Sciences Campus on June 2, 2025.

Kick-Off Week Collaborations:

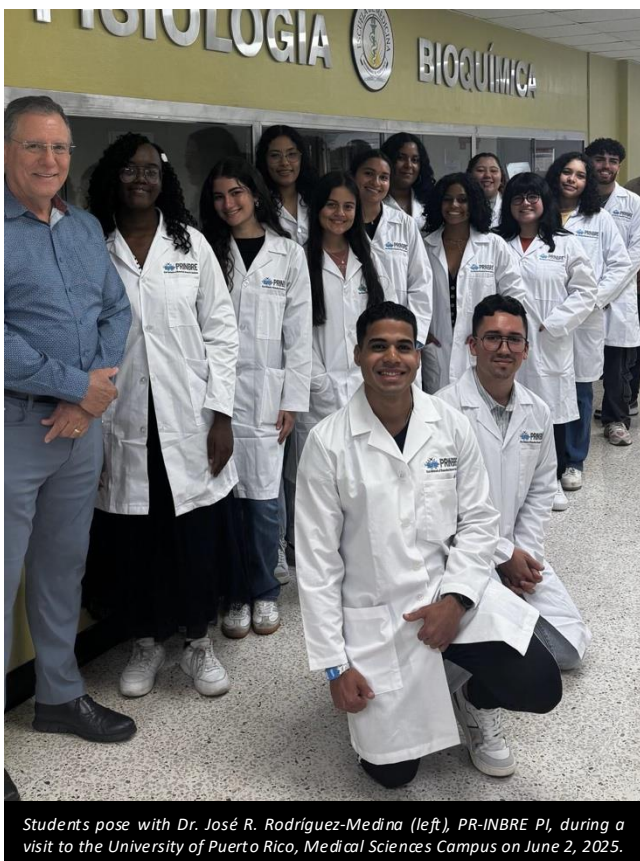
As an inter-institutional collaboration initiative, two students from Primary Undergraduate Institutions (PUIs) in Puerto Rico completed their summer internships at Marshall University through the WV-INBRE Program, while two participants from West Virginia PUIs conducted summer projects at the UPR-MSRC with PR-INBRE sponsorship. This exchange strengthened collaboration between our INBRE networks and provided students with a broader scientific and cultural perspective.

This edition marked the incorporation of the 'Semilla' Program, led by Dr. Maribel Campos-Rivera, and 'Race for Success in STEM,' coordinated by Dr. Zaira Mateo-Mayol. These collaborations expanded mentorship opportunities and access to translational research projects in emerging scientific fields.

Our Kick-Off Week was designed to provide participants with technical training and to inspire them to pursue careers in biomedical research. Emphasizing digital competencies, social responsibility, and collaborative work, the 4th Undergraduate Summer Internship Program advanced its mission to develop the next generation of Puerto Rican scientists and enhanced the research infrastructure of the island.

The Program continued throughout the summer with mentored laboratory projects, progress presentations, and science outreach activities, culminating in an official Summer Student Research symposium.

It is our aspiration that these activities, as well as the dedicated efforts of students, mentors, and scientists across Puerto Rico, be widely recognized and disseminated.



Students pose with Dr. José R. Rodríguez-Medina (left), PR-INBRE PI, during a visit to the University of Puerto Rico, Medical Sciences Campus on June 2, 2025.



Students with Dr. Loyda B. Méndez-Torres (left), STCE Coordinator, at the Caribe Hilton during the Kick-Off Week opening on June 1, 2025, as part of the 4th Undergraduate Summer Internship Program.



Students pose with Dr. Loyda M. Meléndez (right), Director of the Translational Proteomics Center (TPC), during a visit to the University of Puerto Rico Comprehensive Cancer Center on June 3, 2025, as part of the 4th Undergraduate Summer Internship Program: Kick Off Week.



Student exits the Hispanic Alliance for Clinical and Translational Research (The Alliance) headquarters during a visit to the University of Puerto Rico, Medical Sciences Campus on June 3, 2025. Pictured left: Ivette Molina, Administrative Director of The Alliance.



Students pose at the Caribe Hilton hotel during the 4th Undergraduate Summer Internship Program: Kick Off Week with Dr. Loyda B. Méndez-Torres, STCE Coordinator.



Students during a lab visit at the University of Puerto Rico, Medical Sciences Campus on June 2, 2025.



Students during a lab visit with Dr. Carmen L. Cadilla-Vázquez (bottom) at the University of Puerto Rico, Medical Sciences Campus on June 2, 2025.

2025 Summer Student Research Symposium Poster Session

By Yomarie A. Santiago Erazo

At the Amphitheater Jaime Benitez Rexach, Medical Sciences Campus, on August 5, 2025, the STCE Core organized the Summer Student Research Symposium, allowing 40 participants to share their current research projects, interact with other participants, program staff, and faculty from the PR-INBRE Network, and other programs, to gather insights and suggestions.

During the event, Dr. Ari Rosenberg from the University of Wisconsin was the Keynote Speaker, and his presentation topic was "Mechanisms for gaze-tolerant visual perception in three dimensions."

The student Jaden Bender from Davis and Elkins College in West Virginia gave an oral presentation on the "Isolation of Outer Membrane Vesicles as the Potential Method of Transport of the Bacterial Genotoxin Colibactin."

An evaluation process occurred during the poster session, and 6 students received a perfect score.



Dr. Ari Rosenberg, Keynote Speaker



*Left to right: Dr. José Rodríguez Orengo, Dr. José Rodríguez Medina
In the middle, PR-INBRE students awarded: Abriel Rivera, Dara Ortiz,
and Yomilka Molina, Dr. Loyda Méndez, and Dr. Carlos Díaz Osterman.*

Awardees

Puerto Rico INBRE

- Abriel Rivera Rivera
- Dara Ortiz Casilla
- Yomilka Molina

Semilla

- Koralys Ortiz López

Título V de UAGM - Carolina

- Desireé L. Díaz Agosto

UPR/MDACC Partnership for Excellence in Cancer Research

- Luis O. Torres Peña



*Left to right: Dr. José Rodríguez Medina, Dr. Maribel Campos, Koralys Ortiz López
(Awardee), Luis O. Torres Peña (Awardee), Dr. Ilka C. Ríos, Desireé L. Díaz Agosto
and Dr. Loyda Méndez.*

Where Are They Now?

By Claudia A. Ospina-Millán

I am thrilled to share that three outstanding students who have worked and studied under my mentorship recently earned their undergraduate degrees from the Interamerican University of Puerto Rico (IAUPR), Bayamón Campus. I'm incredibly proud of these talented individuals and their dedication to academic and scientific excellence. Each of them represents the next generation of scientists, and it has been an honor to support their growth. Their journeys were backed each in different ways by PR-INBRE, whose contribution has been instrumental in their success.



Left to right: Aliana González-Cortés, Reydiliz Nieves-Acevedo, and Stella Alicea-Ayala at the UIPR graduation ceremony on June 13, 2025.

Reydiliz Nieves-Acevedo

B.S. in Microbiology

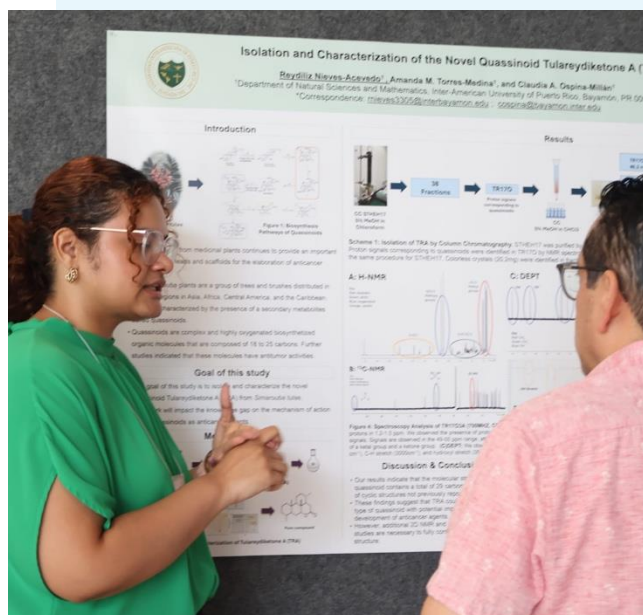
Reydiliz earned a Bachelor of Science in Microbiology, graduating magna cum laude. She received multiple distinctions during her graduation ceremony, including the award for the highest GPA in the Microbiology Program. In recognition of her academic excellence, she was also selected to serve as the program's banner bearer at graduation.

As an undergraduate researcher in my laboratory, Nieves-Acevedo conducted a project titled "Isolation and Structural Elucidation of Tulareydiketone A, a Novel Quassinoid from *Simarouba tulae*".

She was a JRA Student affiliated with the PR-INBRE Program. Currently, she is a Ph. D. student in the Department of Biochemistry at the University of Puerto Rico, School of Medicine, Medical Sciences Campus (MSC), beginning this year.



Nieves-Acevedo, working on fractions after Thin Layer Chromatography (TLC) analysis.



Top: Nieves-Acevedo presents her poster titled "Isolation and Characterization of the Novel Quassinoid Tulareydiketone A (TRA)" to Dr. Pablo E. Vivas-Mejía at the 4th Natural Products Symposium on May 13, 2025, in San Juan, Puerto Rico.



Nieves-Acevedo at the IAUPR graduation ceremony on June 13, 2025.

Stella Alicea-Ayala

B.S. in Forensic Biology

Her undergraduate research project, titled "Isolation and Preparation of Simalikalactone D, a Quassinoid from *Simarouba tulae*," was conducted under my direct supervision and was supported through my PR-INBRE proposal at the IAUPR, Bayamón Campus.



Alicea-Ayala is loading a sample onto the silica gel column.

During her graduation, Stella received multiple academic distinctions, including recognition as an Honors Program student, the highest GPA in the Forensic Biology Program, and the designation of summa cum laude.

Stella recently moved to Florida and intends to apply to graduate programs in Genetics in the U.S. for a doctoral degree.



Alicea-Ayala at the IAUPR graduation ceremony on June 13, 2025.

Aliana González-Cortés
B.S. in Industrial Chemistry

During the recent graduation ceremony, Aliana received the distinction of magna cum laude.

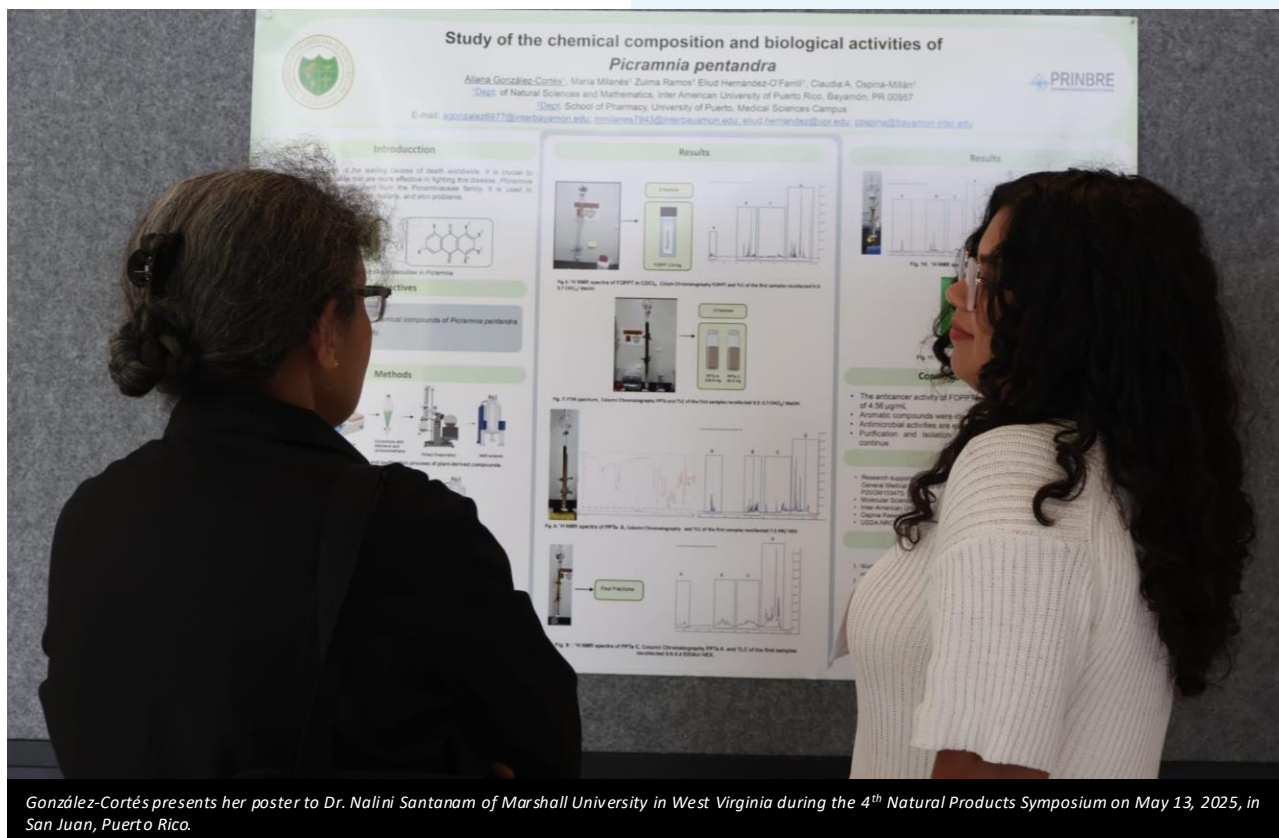
Aliana's undergraduate research focused on the chemical analysis of plant extracts from *Picramnia pentandra* and *Rhus typhina*. These studies were conducted as part of two research initiatives: the *Rhus typhina* project is part of a collaborative effort with Dr. Joseph Horzempa of West Liberty University in West Virginia, while the *Picramnia pentandra* investigation explores a species related to *Simarouba tulae*. Both projects were supported through my INBRE grant at the IAUPR, Bayamón Campus.

She has been admitted to the Ph.D. program in Chemistry at the University of South Carolina, which she has chosen to attend. Notably, Aliana was accepted into all three doctoral programs to which she applied.

I am pleased to share that a manuscript from a collaborative project with Dr. Eliud Hernández-O'Farrill of the UPR-MSC School of Pharmacy has been published in the MDPI journal, *Molecules*. Aliana and I are co-authors on this work, recognized for our contributions to the chemical characterization of organic compounds.



González-Cortés prepares organic extracts.



González-Cortés presents her poster to Dr. Nalini Santanam of Marshall University in West Virginia during the 4th Natural Products Symposium on May 13, 2025, in San Juan, Puerto Rico.



Congratulations to the Class of 2025!

We extend our heartfelt congratulations to all graduates, both undergraduate and graduate, on reaching this important milestone. Completing your degree is a remarkable achievement that reflects your dedication, resilience, and passion for learning.

As you turn the page to begin the next chapter, whether continuing your academic journey, entering the workforce, or pursuing new ventures, we celebrate not only what you have accomplished but also the promise of all you will contribute to the world, especially Puerto Rico.

We are proud of each and every one of you. Your hard work and perseverance have not gone unnoticed, and your success is an inspiration to the entire academic community.

Wishing you continued success, fulfillment, and growth in all that lies ahead.

The images featured in this special issue are provided courtesy of Sandra W. Charriez-Rivera, Claudia S. Pérez-Burgos, Dr. Claudia A. Ospina-Millán, as well as numerous students and researchers who generously contributed their photographs to PR-INBRE.

We extend our sincere appreciation to all contributors.