

PR-INBRE

# EVALUATION REPORT

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Puerto Rico IDeA Network of Biomedical Research Excellence  
Annual Productivity Report  
July 2022 - June 2023

<http://inbre.hpcf.upr.edu>

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# EVALUATION METHODS

A process and outcome evaluation was designed for the *Puerto Rico IDeA Networks of Biomedical Research Excellence*. Process evaluations document whether a program has been implemented as intended. While outcome evaluation helps answer the basic question “Is this program or project working?” Outcome evaluations are important to assure funders that the programs they support deliver what they promise. They are also useful to learn where the project is working well and what changes may need to be made in order to optimize results.

In order to design and implement the process and outcome evaluation several methodologies and activities were used/conducted as follows:

- ▶ Document review- This included a review of NIGMS guidelines and relevant documents (i.e. NOA, Performance Measures Guideline, Scientific Information Reporting System) annual reports (APR), relevant literature on biomedical research programs, mentoring, scientific productivity and career development of underrepresented students.
- ▶ Work Plan-The main purpose is tracking information regarding the progress of the core activities and outcomes. The Eval team collaborated with the PR-INBRE leadership to develop annual work plans for each of the program cores. The work plans ensure the information and data collection of program cores outcomes occurs.
- ▶ Student, Faculty and Institutions Tracking System (Productivity)- Eval team developed and implemented a tracking system to measure program outcomes.
  - Junior Research Associates (students)- An annual online survey was implemented in order to track current students’ research skills development, mentoring experiences and career development. Students also completed an annual progress report.
  - DRPP Projects Investigators- An annual progress report was conducted and information about scientific productivity collected.

## CONT. EVALUATION METHODS

- ▶ Institutions (PR-INBRE network)- An institutional profile survey was designed and implemented. The Eval team in collaboration with the program Steering Committee collected data of the PR-INBRE network institutions. The profile instrument gather data about new instrumentation, research environment (ie. new faculty, research space, number of undergraduates/graduate in science careers), research productivity (*i.e. grants submitted and awarded*), among others.
- ▶ Database searches- The evaluation team conducted searches in several databases (*i.e. NIH Reporting, PubMedCentral, NSF Awards Search*) and webpages to supplement the productivity data.

### Program Experience & Impact

- ▶ Workshops and Conferences Evaluation- Activities sponsored by the PR-INBRE program were documented. An evaluation survey was administered at the end of the activities. The survey collected the following data: participant profile, knowledge self-assessment, satisfaction, relevance/utility and recommendations.
- ▶ DRPP Investigators Program Experience Evaluation- The investigators completed and evaluation of their experience participating in the DRPP full and pilot program during the 2022-2023 academic year.
- ▶ JRAs Students & Mentors Program Experience Evaluation- The students and mentors evaluated their experience with the PR-INBRE program at the end of the academic year.
- ▶ Local Summer Internship Evaluation (students & mentors)- Students in the local summer program evaluated their experience. An online survey was administered at the beginning and end of the program. Mentors also evaluated their mentee skills improvements and performance at their labs.
- ▶ WV & PR Summer Internship Evaluation (students & mentors)- The students experience was evaluated with a pre/post survey. Mentors also completed an evaluation of their mentee research skills improvement and performance at the lab.

# CONT. EVALUATION METHODS

Need Assessment- An online survey to collect data about the network institutions needs was implemented at the end of may 2023. The steering committee members were invited to participate and also to share the survey within their colleagues. The need assessment was also sent to current and past DRPP investigators, JRAs students, and Faculty at the network institutions.

A mix methods approach was used in the evaluation. The mixed-method evaluations blend various designs and data collection strategies (Pole, 2007). The mixed methods design combines qualitative and quantitative method to provide a more comprehensive and convincing evidence (Creswell and Clark, 2011). Moreover, this design encourages multidisciplinary collaboration and the use of multiple paradigms (Guest, Namey, Mitchel, 2013).

Data was analyzed using a combination of technologies. Quantitative data was analyzed using various software applications including: Excel, SPSS and Survey Monkey analyzer. Semantic and content analysis was

used to summarize findings of the qualitative data.

**This evaluation report presents the results of the productivity data collected during the year 2022-2023.** The evaluation findings were subdivided in four sections: network institutions, DRPP investigators, JRA students and overall (program cores).

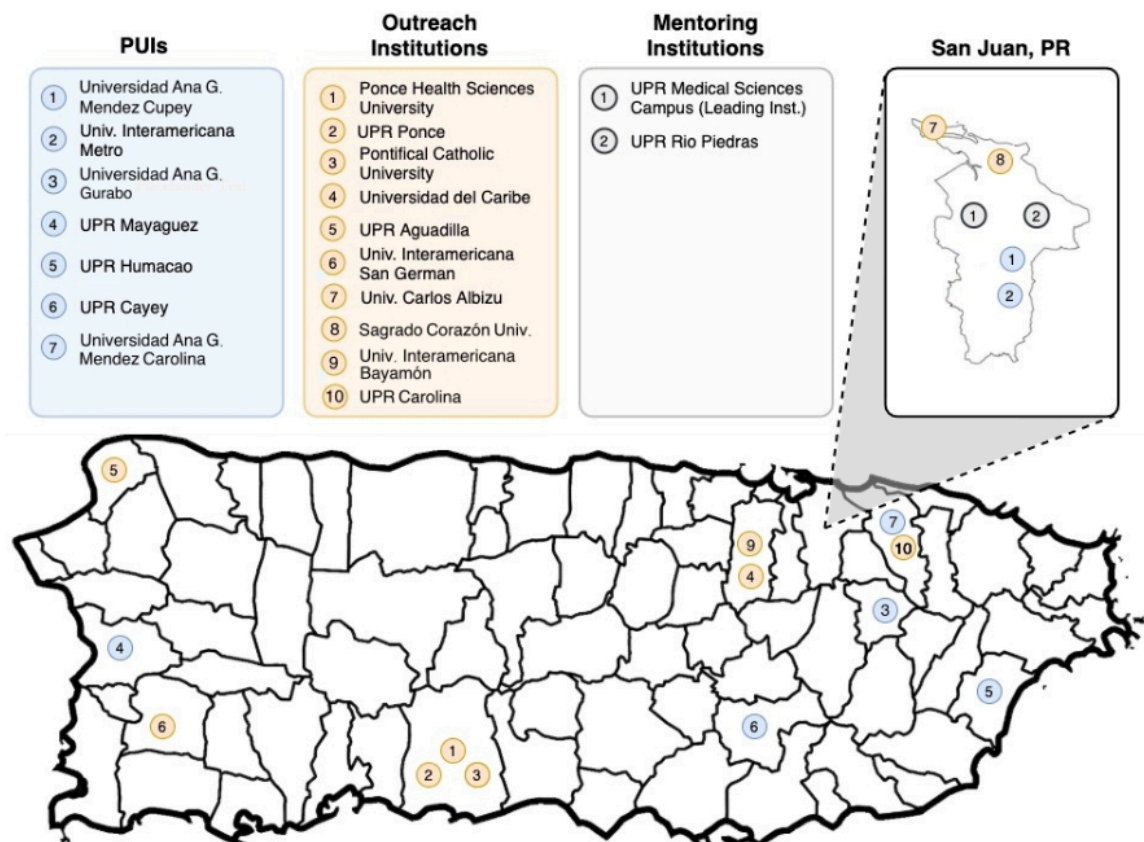
## PRODUCTIVITY INDICATORS

- ▶ New research collaborations
- ▶ Publications
- ▶ Proposals submitted
- ▶ Grants awarded
- ▶ New equipment
- ▶ Mentored students
- ▶ Awards & recognitions
- ▶ New faculty recruited
- ▶ STEM students enrolled
- ▶ STEM degrees awarded
- ▶ New STEM courses
- ▶ Service in peer review panels
- ▶ Poster and oral presentations

# NETWORK INSTITUTIONS

Puerto Rico IDeA Network of Biomedical Research Excellence (PR-INBRE) is a program whose efforts are to promote the continued development of biomedical research infrastructure in Puerto Rico. Since establishment in 2001, PR-INBRE is supported by the National Institute of General Medical Science of the National Institutes of Health (NIGMS-NIH).

The PR-INBRE program is led by an administrative team at the UPR-Medical Sciences Campus (UPR-MSC), under Dr. José Rodríguez Medina, Program Director. Currently, the **PR-INBRE program support 19 institutions across the Island** (see Figure below)



# NETWORK INSTITUTIONS

**Goal 1:** Expand the established multi-disciplinary research network by strengthening the Lead and partner institutions' biomedical research expertise and research infrastructure.

**Goal 2:** Build and augment the research base and capacity by providing support for research to faculty and staff development at the participating institutions.

46

New **FACULTY** recruited at the Network

26

New **COURSES** offered at the Network

38

New **EQUIPMENT** at the Network

65

New **GRANTS AWARDED** at the Network

# NEW RESEARCH SPACE

A new laboratory was added to the PR-INBRE Network Institutions.

## Lead Institution

University of Puerto Rico-Medical  
Sciences Campus

Research Laboratory

Main Building Dr. Guillermo

Arbona Irizarry

Total space: 423 ft<sup>2</sup>

Last Report  
(yr. 2021-2022)

Four **(4)**





# NEW FACULTY

Forty six (46) new faculty were recruited at the Network Institutions during this reporting period 2022-2023.

## 5 Mentoring Institution

Lisandro Cunci	UPR-Rio Piedras
Sasha Rivera	UPR-Rio Piedras
Kariluz Dávila	UPR-Rio Piedras
María Lluberés	UPR-Rio Piedras
David Flores	UPR-Rio Piedras



Last Report  
(yr. 2021-2022)  
62 new Faculty

## 35 Primary Undergraduate Institutions

Ivelisse Irizarry	Inter Metro	Zilkia Rivera	UPR.Cayey
María de los A. Rivera	Inter Metro	Kimberly Carrión	UPR.Cayey
Juan A. Rivas	Inter Metro	Ramón L. Rodríguez	UPR.Cayey
Braulio Castillo	UAGM.Cupey	Alicia Petru	UPR.Cayey
Jonathan López	UAGM.Cupey	Kevin Alicea	UPR.Humacao
Abniel Machin	UAGM.Cupey	Mario Ortiz	UPR.Humacao
Amal Mahmoud	UAGM.Cupey	Mitk'El Santiago	UPR.Humacao
Nelson Morales	UAGM.Cupey	Ruber Rodríguez	UPR.Mayaguez
Yashila Alejandro	UAGM.Cupey	José A. Carmona	UPR.Mayaguez
Gladys Arroyo	UAGM.Cupey	Raíza Quintero	UPR.Mayaguez
Carmen Capo	UAGM.Cupey	Juan López-Garriga	UPR.Mayaguez
Erika Carrasquillo	UAGM.Cupey		
José Giron	UAGM.Cupey		
Rosa Marrero	UAGM.Cupey		
Keishla Medina	UAGM.Cupey		
Luz M. Hernández	UAGM.Gurabo		
Fabiola Rivera	UAGM.Gurabo		
José J. Rosario	UAGM.Gurabo		
Data not provided	UAGM.Gurabo		
Data not provided	UAGM.Gurabo		
Roberto Masso	UAGM.Carolina		
Britney Hopgood	UAGM.Carolina		
Luis M. Negrón Ríos	UPR.Cayey		
Laura C. Vicente	UPR.Cayey		

## 6 Outreach Institutions

José De Jesús	PCUPR
Gerardo Matos	PCUPR
Norlan Rodríguez	PCUPR
Marcos Ramos	PHSU
Wilfredo De Jesús	PHSU
Coriness Piñeyro	PHSU

## CONT. NEW FACULTY

### Faculty Rank & Department (All Institutions)

<b>Position</b>	<b>N</b>	<b>%</b>
Assistant Professor	26	57%
Instructor	10	22%
Associate Professor	2	4%
Adjunct Professor	1	2%
Other	3	7%
Not reported (missing value)	4	9%

<b>Department</b>	<b>N</b>	<b>%</b>
Natural Sciences	9	20%
Nursing	7	15%
Chemistry	6	13%
Biology	5	11%
Health related	4	9%
Computer Science	2	4%
Basic Sciences	2	4%
Mathematics	1	2%
Geology	1	2%
Industrial Technology	1	2%
Other	6	13%
Not reported (missing value)	2	4%



# NEW STEM COURSES

Twenty six (26) new STEM courses were offered at the PR-INBRE Network Institutions.

## New Courses by Type of Institutions



- 9 Lead Institution
  - 4 Mentoring
  - 12 PUIs
  - 1 Outreach Inst.
- Total: 26 courses



## New Courses by Student Level



- 15 Undergraduate level
- 11 Graduate level

## New Courses by University

- 9 UPR-Humacao
- 9 UPR-MSU
- 4 UPR-Rio Piedras
- 3 UPR-Mayagüez
- 1 PUCPR

## New Courses by Department



- 7 Nursing
- 7 Mathematics
- 2 Biology
- 2 Computer Science
- 1 Physic
- 1 Chemistry
- 1 Marine Science
- 2 Medicine
- 1 Environmental Science
- 1 Biomedical Science
- 1 Other

## CONT. NEW STEM COURSES

Undergraduate Level (n=15)

Course Name	Code	Department
Comunicar la Ciencia	TBD	Biology
Preparación para la Química	TBD	Chemistry
Laboratorio Introducción a la Programación y Ciencia de Cómputos	COMP 3083	Mathematics
Laboratorio Introducción a la Programación y Ciencia de Cómputos II	COMP 3084	Mathematics
Visualización de Datos	CDAT 3001	Mathematics
Introducción a la Ciencia de Datos	CDAT 4001	Mathematics
Aprendizaje automático	CDAT 4011	Mathematics
Laboratorio de Aprendizaje automático	CDAT 4013	Mathematics
Diseño de Aplicaciones para la Web (WebApps) y Móviles	COMP 4010	Mathematics
Elements of modern physic	FISI 4118	Physics
Climate Change: A Critical Analysis	CNEI 3203	Interdisciplinary
Foundations of Ethics in Computing	CCOM 4365	Computer Science
Environmental Sustainability	CIAM 4137	Environmental Science
Transdisciplinary Research with Applied Data Science	CCOM 4301	Computer Science
Nursing Special Skills Destrezas especiales en Enfermería	ENFE 4315	School of Nursing

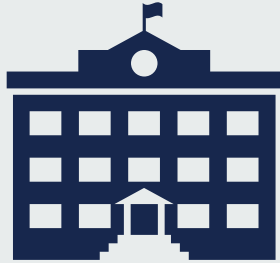
Graduate Level (n=11)

Course Name	Code	Department
Advanced Human Anatomy and Physiology	ENFE 7130	School of Nursing
Advanced Pharmacology for Anesthesia I	ENFE 7131	School of Nursing
Advanced Pathophysiology I	ENFE 7132	School of Nursing
Basics of Anesthesia I	ENFE 7133	School of Nursing
Advanced Pharmacology for Nursing	ENFE 6652	School of Nursing
Nursing Trends: Philosophy, Theory, and Practice	ENFE 6626	School of Nursing
Research in Neurosurgery Investigacion en Neurocirugia	MCIR 7005	School of Medicine
Human Microbiomes	MICR 8XXX	School of Medicine
Evaluation and Cognitive rehabilitation	NSGP 644	Biomedical Sciences
Principles & Application of Synthetic Biology Lab	BIOL 6019	Biology
Professional Research Conduct in Ocean Sciences	CIMA 6007	Marine Sciences

# NEW EQUIPMENT

Thirty three (33) new equipment were acquired by the Network Institutions during this period.

Instruments by  
Type of Institutions



12 Lead Institution

14 Mentoring

4 PUIs

3 Outreach Inst.

Total: 33 new equipment

Type	Institution	New Instrument
Lead	UPR-MSC	PLANTAR TEST ANALGESIA METER
		BIORUPTOR PICO
		FIT01-16605 ProScanner V5 + integrated Services
		NU-8600 Nu-Aire In-Vitrocell 160L Stackable Water Jacketed CO2 Incubator
		MODIFIED STAINLESS STEEL 4 CAGE PRIMATE UNIT 71.25"W X 37.25D" X 82.75"H
		PLANETARY BALL MILL
		FLEX PURIFICATION SYSTEM
		MOBILE LAB TABLE 36X60
		IN-VITROCELL ES NU-5700 DIRECT INCUBATOR
		MICROSCOPIO NIKON
		ANGLE TWO STEREOTAXIC FOR MOUSE

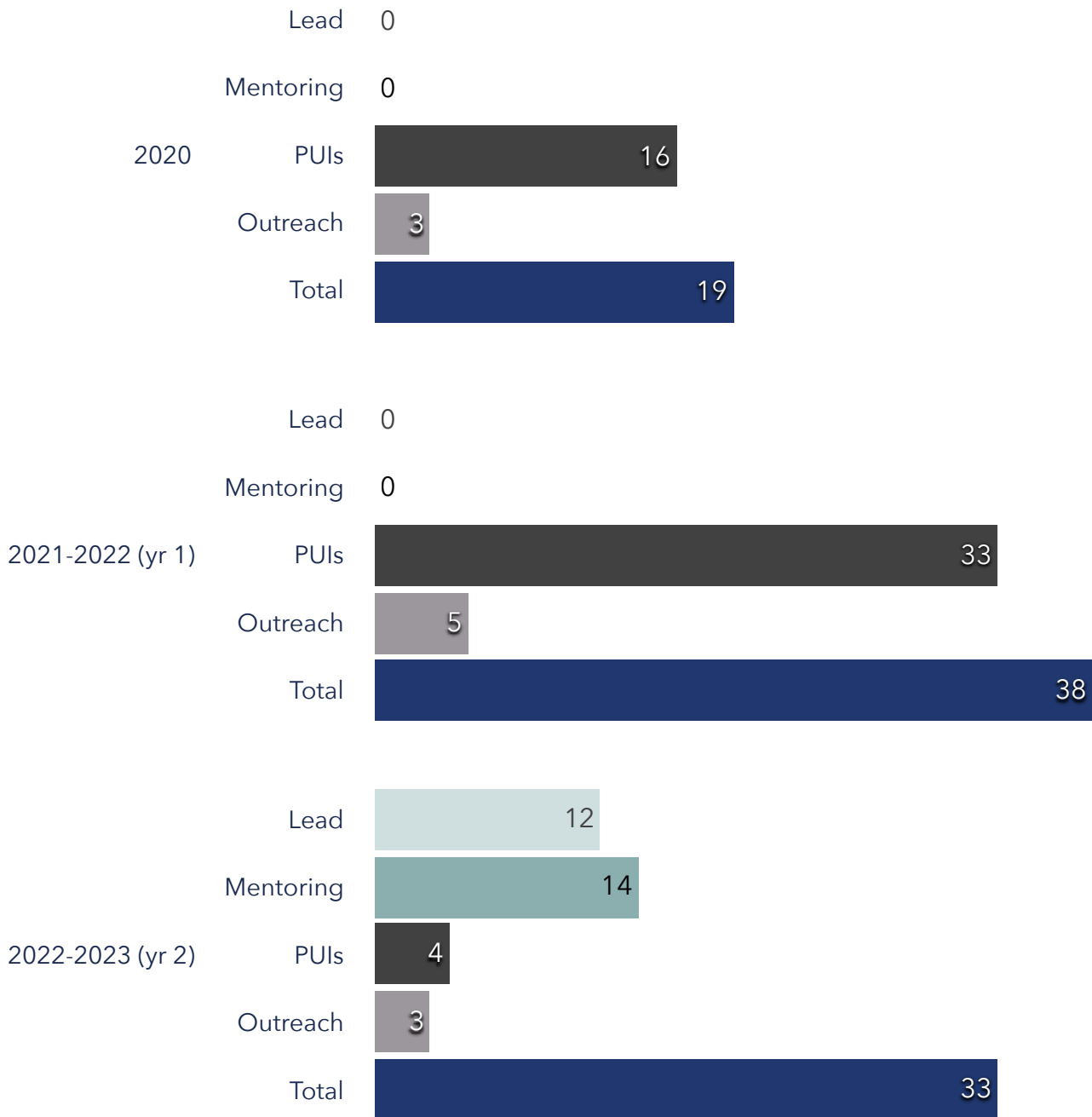
## CONT. NEW EQUIPMENT

Type	Institution	New Instrument	Number of users
Mentoring	UPR-Rio Piedras	Porometer 3G zh FULL RANGE CAPILLARY FLOW POROMETER	25
		Phenom Pharos G2 with SED and EDS	25
		Multimodal Plate Reader	400
		Dynamic Light Scattering Particle Size Analyzerwith Zeta Potentia	25
		QDa Detector	100
		OLYMPUSá Upright Microscope Frame, Right-Hand	24
		BECKMAN OPTIMAá ULTRACENTRIFUGE	25
		EX-5562, Zeeman Effect Experiment	400
		Mettler Toledo Thermalá System TGA2 SF/ XP1/US	30
		DP Postex complete unit- Haglof DP II 320 mm	20
		9002123 QIAxcel Advanced System	400
		9002340 QIAxpert	400
		Sorvall LYNX 4000 Superspeed Centrifuge	25
		SPINSOLVE 80 MHz CARBON	200

Type	Institution	New Instrument	Number of users
PUIs	UAGM.Gurabo	QCM	5
		Microwave Synthesizer	15
	UAGM.Carolina	Minilon DNA sequencer	8
	InterMetro	Bead Ruptor 24 Elite 50-60Hz 15X17X13 IN	10
OI	UCC	Centrifuge	5
	UCC	Incubator	5
	UCC	Nanotracs Wave Flex	5

# CONT. NEW EQUIPMENT

## Comparison of New Equipment at the Network Institution by Years



Year 2021-2022: Started a new grant cycle period

# NEW GRANTS

Sixty five (65) new grants were awarded to the Network Institutions during this reporting period

## Grants by Institutions



### Lead

Submitted: 54  
Awarded: 10  
\$4,005,821



### Mentoring

Submitted: N/A\*  
Awarded: 12  
\$5,680,889



### PUIs

Submitted: 26  
Awarded: 19  
\$5,152,399



### Outreach

Submitted: 37  
Awarded: 24  
\$4,166,709

Type	Institutions	Grants Submitted	Grants Awarded	Total Awarded (\$)
L	UPR-MSU	54	10	\$4,005,821
M	UPR-Rio Piedras	*	12	\$5,680,889
P	UAGM.Cupey	4	-	-
P	UAGM.Carolina	3	-	-
P	UAGM.Gurabo	1	1	\$2,250,000
P	UPR.Cayey	2	1	\$304,098
P	UPR.Humacao	1	3	\$210,686
P	Inter.Metro	15	5	\$491,125
P	UPR.Mayagüez	-	9	\$1,896,490
OI	UCC	9	4	\$374,747
OI	PHSU	27	20	\$3,791,962
OI	PUCPR	1	-	-
	<b>TOTAL</b>	<b>117</b>	<b>65</b>	<b>\$19,005,818</b>

\* Grant submitted: Data not available for Mentoring Institution



## CONT. NEW GRANTS

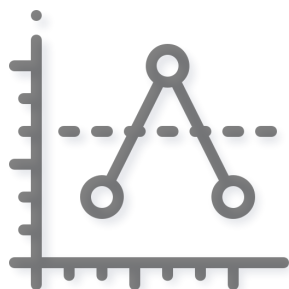
### Grants at the PR-INBRE Network by SOURCE

Source	Grants Awarded	Total Awarded (\$)
NIH	19	\$7,930,353
NSF	14	\$5,197,544
Other Federal Agency	7	\$3,801,039
Foundations	4	\$85,000
Other	12	\$1,012,907
Not specified	9	\$978,975.00
<b>Total</b>	<b>65</b>	<b>\$19,005,818</b>

### Grants at the PR-INBRE Network by years

Years	Grants Submitted	Grants Awarded	Amount Awarded
2015-2016	108	21	\$3,767,107
2016-2017	169	85	\$5,082,556
2017-2018	83	45	\$12,900,368
2019*	223	43	\$29,080,255
2020	124	27	\$9,081,229
2021-2022**	132	55	\$24,738,669
<b>2022-2023</b>	<b>117</b>	<b>65</b>	<b>\$19,005,818</b>

\*Yr. 2019, PHSU was awarded with a U54 (\$21M)    \*\*Year 2021-2022: Started a new grant cycle period  
 Grants include NIH, NSF, Department of Education, Other federal agencies, Foundations, and State Funds



**AVERAGE** (yrs. 2015-2022)

Grant Submitted: 137

Grant Awarded: 49

# STEM STUDENTS

2,209 STEM degrees were awarded at the PR-INBRE Network Institutions this reporting period.



## **STEM Degrees at the Network Institutions**

Associates: 65

Bachelors: 1,552

Master: 331

Doctorate: 93

Medical (MD): 168

**2,209**  
STEM DEGREES  
AWARDED

## **STEM Degrees by Type of Institutions**

105 Mentoring

1,327 PUIs

777 OI

# CONT. STEM STUDENTS

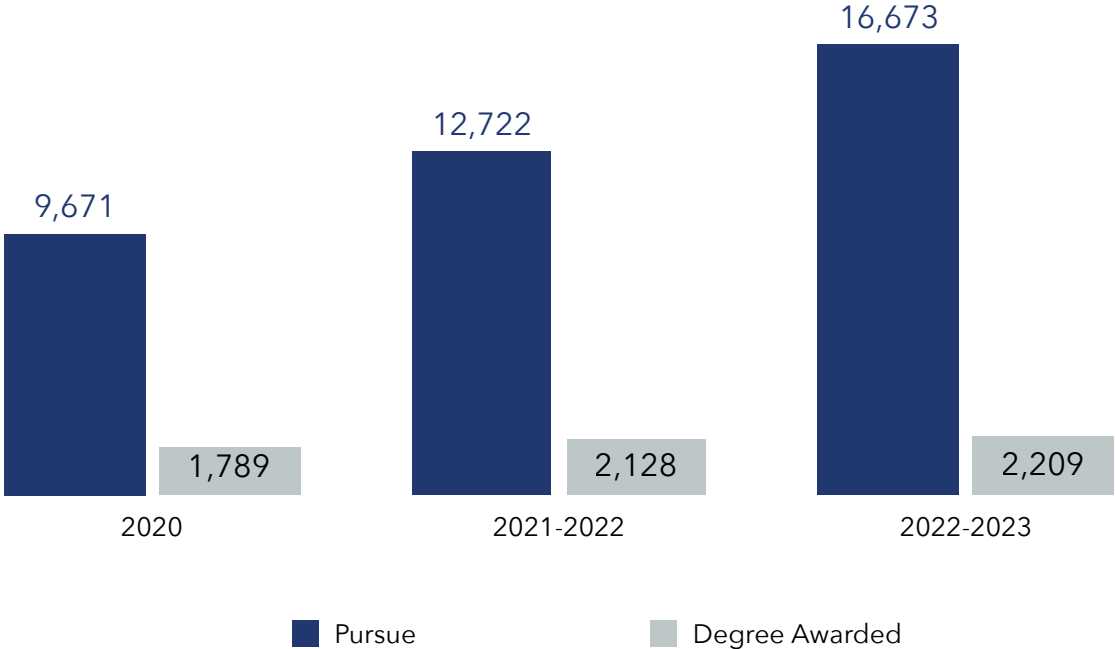


## STEM Students at the Network Institutions (Enrolled)







- Associates: 320
- Bachelors: 11,240
- Master: 1,465
- Doctorate: 2,349
- Medical (MD): 1,299

**16,673**  
STEM STUDENTS  
ENROLLED

Comparison of STEM Students & Degrees Awarded at the Network Institutions



# NETWORK INDICATORS

Indicator	Last Year	This Year	
New <b>Research Space</b>	4	1	
New <b>STEM Courses</b>	3	26	
New <b>equipment</b>	38	33	
New <b>Grants awarded</b>	55	65	
<b>STEM Degrees Awarded</b>	2,128	2,209	
New <b>Faculty</b>	62	46	

# SUPPORTED INVESTIGATORS

The major focus of the Developmental Research Project Program (DRPP) is the support and development of the careers of promising faculty in the PR-INBRE network. The DRPP provide mentoring and financial support to the Developmental project investigators in the three scientific cluster areas: Neuroscience, Molecular Medicine/Genomics, Drug Discovery and Development.

## DRPP Supported Investigators (Year 2022-2023)

### 1 Full Project

Investigators	Institution	Thematic Area
Carlos Díaz	PHSU	Drug Discovery

### 19 Pilot Projects (18 DRPP + 1 ADM)

Investigators	Institution	Thematic Area
Lisandro Cunci	UAGM Gurabo	Neuroscience
Natasha De León	Inter.Metro	Molecular Medicine
Claudia Ospina	InterAmerican, Bayamón	Drug Discovery
Marcos López	UPR Humaco	Drug Discovery
Yaliz Loperena	PUCPR	Molecular Medicine
Iris Salgado	UCC	Drug Discovery
Marian Sepúlveda	PHSU	Neuroscience
Ceidy Torres	PUCPR	Molecular Medicine
Elsie Pares	UPR Mayagüez	Drug Discovery
Edu Suárez	UPR Ponce	Molecular Medicine
Nawal Boukli	UCC	Molecular Medicine
Antonio Colón	InterMetro	Drug Discovery
Emanuel Cruz	PUCPR	Neuroscience
Yancy Ferrer	UCC	Drug Discovery
Patricia Ortiz	UPR Mayagüez	Molecular Medicine
David Rivera	UCC	Molecular Medicine
Abigail Ruiz	UPR.Ponce	Molecular Medicine
David Sanabria	InterAmerican, Bayamón	Molecular Medicine
Antonio Martin	UPR-MSU	Neuroscience

## INVESTIGATORS PRODUCTIVITY SUMMARY

8

New **publications** (*peer review, abstracts, books*)

116

Undergraduates and Graduate students **mentored**

31

Peer **review panels** served

71

Oral and poster **presentations**

9

**Awards** received

# NEW PUBLICATIONS

Eight (8) new publications by DRPP investigators

## Pilot Projects Investigators & Graduate DRPP Investigators

Total: **8** Publications

- ▶ All publications acknowledge PR-INBRE program
- ▶ 7 with PMCID number complete, 1 not in PubMed
- ▶ 4 publications by current DRPP investigators and 4 by graduate investigators

## Current DRPP Investigators

1. **Sanabria-Rios DJ**, Alequin-Torres D, De Jesús A, Cortes G, Carballeira NM. Vinyl halogenated fatty acids display antibacterial activity against clinical isolates of methicillin-resistant *Staphylococcus aureus*. *Med Res Arch*. 2022 Jul;10(7):10.18103/mra.v10i7.2901. doi: 10.18103/mra.v10i7.2901. Epub 2022 Jul 31. PMID: 36118101; **PMCID: PMC9481190**.
2. Espinosa A, Díaz J, Vázquez E, Acosta L, Santiago A, **Cunci L**. Fabrication of paper-based microfluidic devices using a 3D printer and a commercially-available wax filament. *Talanta Open*. 2022 Dec;6:100142. doi: 10.1016/j.talo.2022.100142. Epub 2022 Aug 28. PMID: 36093430; **PMCID: PMC9454060**.
3. Álvarez-Rivera E, Rodríguez-Valentín M, **Boukli NM**. The Antiviral Compound PSP Inhibits HIV-1 Entry via PKR-Dependent Activation in Monocytic Cells. *Viruses*. 2023 Mar 22;15(3). doi: 10.3390/v15030804. PubMed PMID: 36992512; PubMed Central **PMCID: PMC10051440**.
4. Ferrer-Acosta Y, Rodríguez-Massó S, Pérez D, Eterovic VA, Ferchmin PA, **Martins AH**. Memantine has a nicotinic neuroprotective pathway in acute hippocampal slices after an NMDA insult. *Toxicol In Vitro*. 2022 Oct;84:105453. doi: 10.1016/j.tiv.2022.105453. Epub 2022 Aug 6. PMID: 35944748. **PMCID: PMC10026604**

## Graduate DRPP Investigators

5. Barreto-Díaz MA, Velázquez-Aponte RA, Wu-Wu A, **Cassé C**. Hormetic effect of an Ethanolic Graviola Leaf Extract on HGF-1 cells survival. *BAOJ Cancer Res The*. 2022; 6(1): 1005. [Not in PubMed]
6. Ortiz-Soto G, Babilonia-Díaz NS, Lacourt-Ventura MY, Rivera-Rodríguez DM, Quiñones-Rodríguez JI, Colón-Vargas M, Almodóvar-Rivera I, Ferrer-Torres LE, **Suárez-Arroyo IJ**, **Martínez-Montemayor MM**. Metadherin Regulates Inflammatory Breast Cancer Invasion and Metastasis. *Int J Mol Sci*. 2023 Feb 28;24(5):4694. doi: 10.3390/ijms24054694. PMID: 36902125; **PMCID: PMC10002532**.

## Cont. Graduate DRPP Investigators Publications

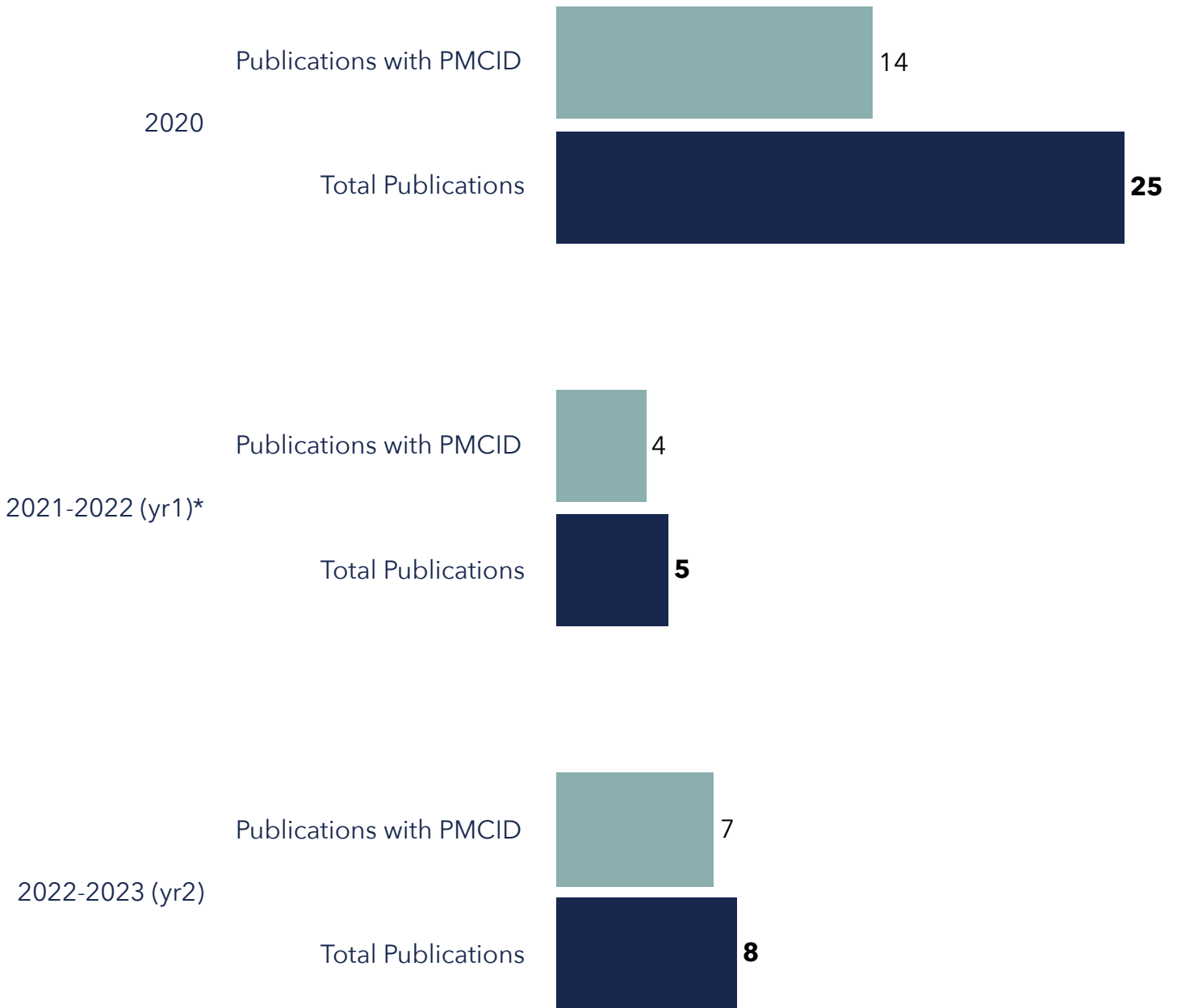
7. Torres-Rodríguez O, Rivera-Escobales Y, Castillo-Ocampo Y, Velázquez B, Colón M, **Porter JT**. Purinergic P2X7 receptor-mediated inflammation precedes PTSD-related behaviors in rats. *Brain Behav Immun*. 2023 Feb 21;110:107-118. doi: 10.1016/j.bbi.2023.02.015. [Epub ahead of print] PubMed PMID: 36822379; **PMCID: PMC10106407**.

8. Acevedo-Díaz A, Morales-Cabán BM, Zayas-Santiago A, **Martínez-Montemayor MM**, Suárez-Arroyo IJ. SCAMP3 Regulates EGFR and Promotes Proliferation and Migration of Triple-Negative Breast Cancer Cells through the Modulation of AKT, ERK, and STAT3 Signaling Pathways. *Cancers (Basel)*. 2022 Jun 5;14(11):2807. doi: 10.3390/cancers14112807. PMID: 35681787; **PMCID: PMC9179572**.





## DRPP Investigators Publications by years



\* Year 2021-2022: Started a new grant cycle period. Only 4 pilots projects were active that year.

# NEW MANUSCRIPTS

Six (6) manuscripts in preparation by DRPP investigators

1. Vargas-Virella, A; García-Cortés, K; Martínez-Figueroa, Z; **Cruz, E**; December 2023, Astrocytic and Neuronal Lactate Metabolism in the Brain of Angelman Syndrome Mice. **[In preparation]**
2. Cruz-López, F; Aponte, V; González, K; Firpo, A; Fontanet, F; Machargo, N; Mitwalli, T; Serrano, P; Vázquez, E; González, M; Billing, K; Grubaugh, N; **Rivera-Aponte, D.E.** Addressing disparities in genomic surveillance for SARS-CoV-2 in Puerto Rico through multisector collaborations, summer 2021. Nature Reports. **[In preparation]**
3. Colón-Vázquez; J; Ramíres-Sánchez, N; Angueira, A; Méndez-González, M.P.; Skatchkov, S.N.; Eaton, M.J.; **Rivera-Aponte, D.E.** Aminoguanidine recovers Kir4.1 expression and function in astrocytes under hyperglycemic conditions. **[In preparation]**
4. Carlos Vigil-Vázquez, María A. Jiménez, and **Patricia Ortiz-Bermúdez**, and Andreas Schüller (2023), Antifungal drug repurposing by chemical similarity-guided network-based, International Journal of Molecular Sciences.
5. Nadezhda Sabeva, William Castro, **Yancy Ferrer-Acosta**, Pedro A Ferchmin, Vesna A Eterovic, Demetrio Sierra-Mercado, Naydi Pérez-Rios, Sona Rivas-Tumanyan, Antonio H Martins\*. September 2023. Determining the Safety of the Tobacco Cembranoid (1S,2E,4R,6R,7E,11E)-Cembratriene-4,6-diol (4R): A Translational Study in Nonhuman Primates. Toxicology and Applied Pharmacology. **[Submitted]**
6. Colón-Vélez M, De Jesús J, Frank WE, Ruiz A, **Suárez E.** Nov. 2023, Cytokine Profiles of Puerto Ricans with Respiratory Lung Diseases, Immunology. **[In preparation]**

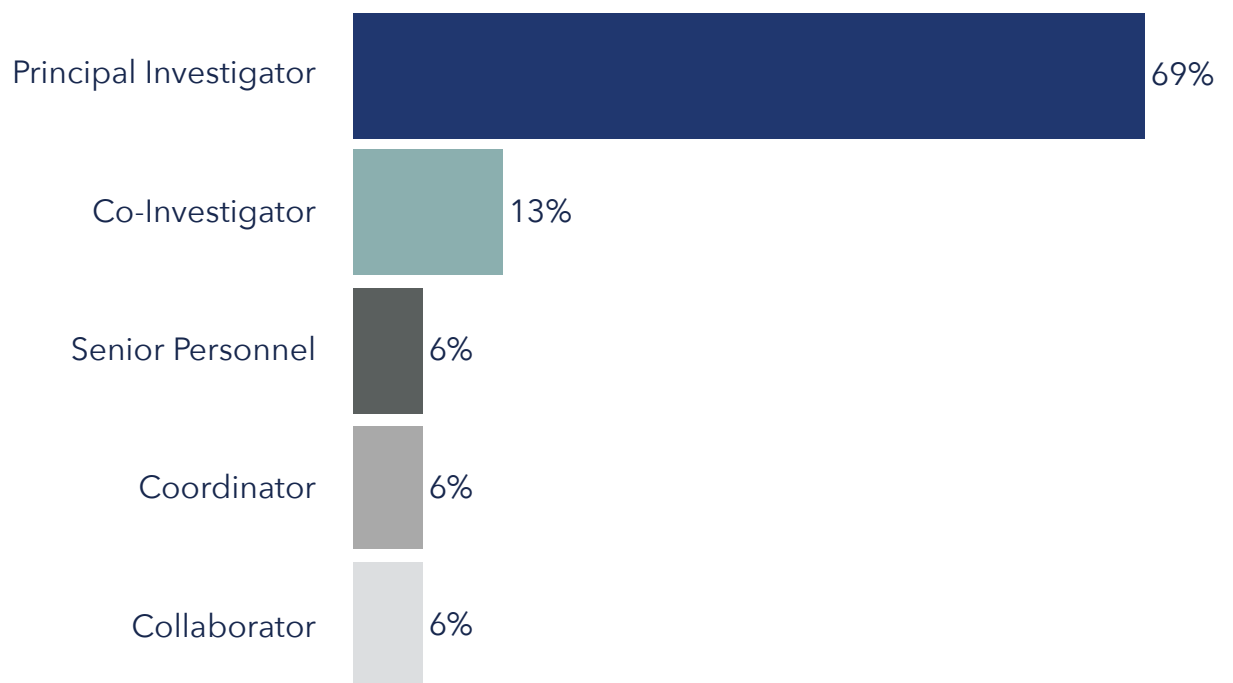
# NEW GRANTS

5 grants awarded to the DRPP investigators

## GRANTS SUBMITTED

- ▶ 16 Grant proposals submitted by DRPP investigators in this reporting period.
- ▶ In 69% (n=11) of the proposals submitted in this period the researchers role was Principal Investigator.
- ▶ 2 R01 proposals were submitted.
- ▶ 62% of the proposal were NIH type.

Investigator role in proposals submitted



## Proposal Source

- ▶ 62% NIH Institutes
- ▶ 19% Other Federal Agency
- ▶ 19% Other Organizations (private or local)

# NEW PROPOSAL SUBMITTED/AWARDED

Investigator	Role	Agency	Type	Proposal Title	Estimated Budget	STATUS July 2023
Iris Salgado	PI	NIH- National Institute of Allergy and Infectious Diseases (NIAID)	R-16	1. Initial Pre- Clinical Studies of Novel Influenza A- antivirals	\$640,916	Not approved
Marcos López	PI	Other Federal Agency	OT2	2. Community-led Structural Interventions Against Diabetes	\$12,000,000	Not approved
Carlos Díaz	PI	NIH- National Cancer Institute (NCI)	R01	3. Cardiometabolic risk and prostate cancer aggressiveness among disparately affected populations	\$1,601,850 / 5 years	Waiting response
	PI	NIH- National Cancer Institute (NCI)	R21	4. A role of DNA methylation in MYC pathway activation in Puerto Rican men with aggressive prostate cancer	\$275,000 / 2 years	Waiting response
Elsie Pares	Co-I	National Institute of Health	R01	5. Deciphering the oxidative stress signaling mechanism in fungi.	\$1,662,370	Not approved
	Collab orator	National Institute of Health	S10	6. Cytation 5 Multimode Imaging System for UPR at Mayaguez Biomolecular Chemistry Facilitie	-	Waiting response

# NEW PROPOSAL SUBMITTED/AWARDED

Investigator	Role	Agency	Type	Proposal Title	Estimated Budget	STATUS July 2023
Marian Sepúlveda	PI	NIH-National Institute on Minority Health and Health Disparities (NIMHD)	U54 Specialized Center-Cooperative Agreements	7. Sex differences in a rodent model of co-occurrence of chronic stress and cocaine use disorder	\$350,000/year	Waiting response
David Rivera	Coordinator	<b>NIH-National Institute of Neurological Disorders and Stroke (NINDS)</b>	<b>Contract</b>	<b>8. Improving the Undergraduate Research Opportunities in Puerto Rico</b>	<b>\$237,000</b>	<b>Awarded</b>
Lisandro Cunci	PI	NIH-National Institute on Minority Health and Health Disparities (NIMHD)	R21	9. Development of a Wearable Sensor to Understand the Impact of Neuropeptide Levels on Health Disparities	\$353,804	Cancelled
	PI	<b>DOE = Department of Energy</b>	<b>BES-RENEW</b>	<b>10. Partnership to Increase Representation in Energy Research in Puerto Rico</b>	<b>\$2,250,000</b>	<b>Awarded</b>
David Sanabria	PI	NIH-National Institute of General Medical Sciences (NIGMS)	R15	11. Investigating the mechanism of action of antibacterial synthetic unsaturated fatty acids in methicillin-resistant Staphylococcus aureus	\$409,863	Waiting response
	PI	<b>Other</b>	<b>Institutional Seed Money</b>	<b>12. IAUPR-MC Research Project for Testing, Tracing, and Sequencing of SARS-CoV-2 Virus</b>	<b>\$24,000</b>	<b>Awarded</b>
Claudia Ospina	Co-I	<b>OTHER-Chapter V RCM</b>	<b>Other</b>	<b>13. Genomic and Proteomic alterations following treatment of Breast Cancer Cells with Similikalactone-D</b>	<b>\$18,000</b>	<b>Awarded</b>
	PI	Puerto Rico Science Trust	Other	14. Malaria Therapeutics Agents and Formulations from Puerto Rican Plants	\$75,000	Waiting response

# NEW PROPOSAL SUBMITTED/AWARDED

Investigator	Role	Agency	Type	Proposal Title	Estimated Budget	STATUS July 2023
Patricia Ortiz	Senior Personnel	National Science Foundation	ERC	15. Engineering Research Center for Lignin Engineering,	26,000,000	Waiting response
Yancy Ferrer	Co-Investigator	NIH	-	16 BDFACSymphony A1 Flow Cytometer with cell-sorting capability in RCM	\$138,982.00	Waiting response
Abigail Ruiz Edu Suárez	<b>Co-Principal Investigator</b>	<b>NIH-National Institute of General Medical Sciences (NIGMS)</b>	<b>T34** 1T34GM1 45504-01 A1</b>	<b>17. U-RISE AT UNIVERSITY OF PUERTO RICO AT PONCE</b>	<b>\$1,756,476</b>	<b>Awarded**</b>

\*\* This proposal was submitted in the previous reporting period.



## PROPOSAL STATUS (submitted in this reporting period)

- ▶ 16 proposals were submitted in this reporting period
- ▶ 31% (n=4) of the proposals submitted in this reporting period were awarded to DRPP investigators.
- ▶ Proposal status
  - 43% Waiting response/pending (n=7)
  - 18% Not approved
  - 6% Cancelled

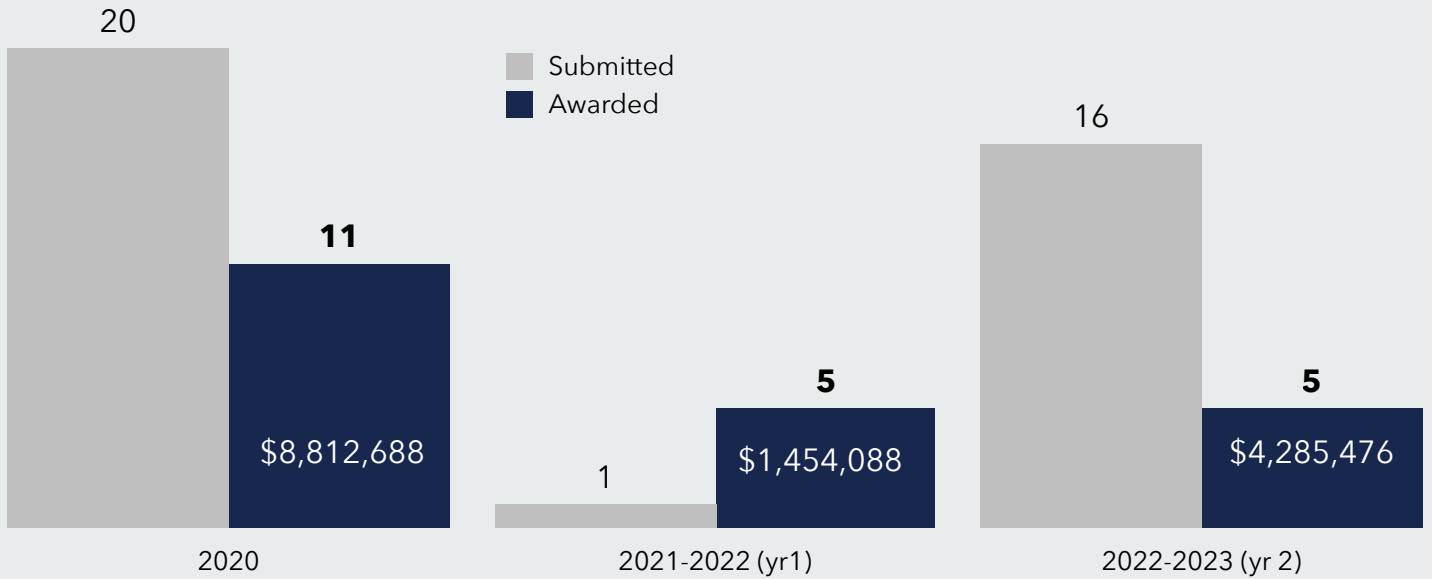


## GRANTS AWARDED

- ▶ A total of 5 grants were awarded to DRPP investigators (4 submitted in this period, 1 submitted in previous period)
- ▶ Total awarded: \$4,285,476
- ▶ Source/Type:
  - 2 NIH (1T34, 1NIH-Contract)
  - 1 Department of Energy (BES)
  - 2 Other source (Institutional Funds, RCM Chapter)

# CONT. NEW GRANTS

Grants awarded to DRPP Investigators by year



Year 2021-2022: Started a new grant cycle period. Only 4 pilots projects were active that year. All the grants awarded in that year were submitted in the previous reporting period.

# NEW PRESENTATIONS

Seventy one (71) presentations were performed by the DRPP investigators

## TYPE OF PRESENTATIONS

- ▶ **36** Oral Presentations
  - ▶ **35** Poster Presentations
- Total: 71 presentations

## PRESENTATIONS BY LOCATION





## PRESENTATIONS BY INVESTIGATOR & TYPE

<b>Investigator</b>	<b>Oral</b>	<b>Poster</b>	<b>Total</b>
Abigail Ruiz	19	5	24
Claudia Ospina	1	7	8
Lisandro Cunci	1	6	7
David Rivera	2	3	5
Marian Sepúlveda	-	4	4
Nawal M. Boukli	3	1	4
Yaliz Loperena	2	1	3
Elsie Pares	1	2	3
Ceidy Torres	-	2	2
Patricia Ortiz	2	-	2
Natasha De León	1	1	2
Emanuel Cruz	1	1	2
Yancy Ferrer	1	1	2
Carlos Díaz	-	1	1
Marcos López	1	-	1
Iris Salgado	1	-	1
Edu Suárez	-	-	-
David Sanabria	-	-	-
Antonio Martin	-	-	-
Antonio Colón	-	-	-
Total	36	35	71

## 35 POSTER PRESENTATIONS

- 1 Maldonado-Vargas, N; Nieves-Oquendo, P; Ospina-Millán, C. A. "Study of the Chemical Composition of the Hexane Extract from Simarouba" Poster Presentation, presented at 1st Summer Internship Program, PR INBRE Program, San Juan, PR, August 12, 2022

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- 2 Nieves-Oquendo, P; Maldonado-Vargas.; García-Ortiz, A.; Vivas-Mejía, Pablo E.; Ospina-Millán, C. A. "Isolation and Nanocarrier Design of Simalikalactone D" Poster Presentation, presented at 1st Summer Internship Program, PR INBRE, San Juan, Puerto Rico August 12, 2022

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- 3 Maldonado-Vargas, N; Nieves-Oquendo, P; Ospina-Millán, C. A. "Study of the Chemical Composition of the Hexane Extract from Simarouba" Poster Presentation, presented at 73rd Southeastern Regional ACS meeting (SERMACS 2022), Carolina, PR, October 19, 2022

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- 4 Nieves-Oquendo, P; Maldonado-Vargas.; García-Ortiz, A.; Vivas-Mejía, Pablo E.; Ospina-Millán, C. A. "Isolation and Nanocarrier Design of Simalikalactone D" Poster Presentation, presented at 73rd Southeastern Regional ACS meeting (SERMACS 2022), Carolina, PR, October 19, 2022

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- 5 Ospina, C. A. "Potent Antiplasmodial Activity of Tea Extracts and Compounds from Endemic Puerto Rican Plants " Poster Presentation, presented at American Society of Tropical Medicine and Hygiene, October 31, 2022 Seattle USA

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- 6 Boukli N.M. (2022). Endoplasmic Reticulum Stress Responce in HIV-1 Gp120 Glioma Cells. 27th Annual Meeting and Education Day of the Society for Neuro-Oncology November 18 , 2022, Tampa Convention Center, Tampa Bay, FL.

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- 7 Díaz Osterman, C. J.; Torres Muriel N.; Martínez S. R.; Santiago Martínez N.; Rodríguez Ruiz B.; Rodríguez G.; Rosa E.; Escalona A. M.; Krumhansl R.; Dutil J.; Yamoah K.; Park J. Y.; Román Torreguitart, W. Evaluating cardiometabolic and oncologic risk among Puerto Rican men with prostate cancer. American Association for Cancer Research Special Conference: Advances in Prostate Cancer Research, Denver, Colorado, March 15-18, 2023.

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- 8 Santana, T; Torres Maisonet AM, De León-Rodríguez, N. Insights into the health risk imposed by bacteria associated with Saharan dust events through the understanding of the pathogenic pathways and antibiotic resistance genes. 2022 National Diversity in STEM Conference SACNAS, San Juan, PR, October 27, 2022

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- 9 García-Cortés, C.G.; Parés-Matos, E.I. Isolation and characterization of protein complexes of overexpressed Human Serum Amyloid A from citokines-induced HepG2 cells. SERMACS 2022, Biochemistry Session, Puerto Rico Convention Center, San Juan, PR, October 19, 2022.

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- 10 García-Cortés, C.G.; Parés-Matos, E.I. Isolation and characterization of protein complexes of overexpressed Human Serum Amyloid A from citokines-induced HepG2 cells. Discover BMB 2023, Abstract ID: 1329, Seattle, Washington State, March 26, 2023.

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- 11 Yobet A. Pérez-Pérez, Roberto J. Morales-Silva, Joshua Pérez-Torres, John K. Alvarado-Torres, Génesis Rodríguez-Torres, Marian Sepúlveda-Orengo. Effects of stress prior to cocaine self-administration in adult rats. Society of Neuroscience Annual Meeting, San Diego, CA, November 12-17, 2022

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- 12 Roberto J Morales-Silva, Ursula Gelpi-Domínguez, Joshua Pérez-Torres, Yobet Pérez-Pérez, Génesis Rodríguez-Torres , Marian Sepúlveda-Orengo. Effects of chronic stress on cocaine seeking behavior after forced abstinence in male and female rats. Society of Neuroscience Annual Meeting, San Diego, CA, November 12-17, 2022

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- 13 Tanairy Gómez-Rivas, Yobet A. Pérez-Pérez, Roberto J. Morales-Silva, Joshua Pérez-Torres, John K. Alvarado-Torres, Génesis Rodríguez-Torres, Marian Sepúlveda-Orengo. Effects of exercise on fear- and cocaine-induced changes in cocaine self-administration of male rats. Summer Internship Program Poster Presentation, San Juan, PR, August 12, 2022

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- 14 Yobet A. Pérez-Pérez, Tanairy Gómez-Rivas, Roberto J. Morales-Silva, Génesis Rodríguez-Torres, Marian Sepúlveda-Orengo. Effects of exercise on fear- and cocaine-induced changes in male and female rats. 12th Scientific Day, The Alliance, San Juan, PR, May 3, 2023

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- 15 Vargas-Virella, A; García-Cortés, K; Martínez-Figueroa, Z; Cruz, E; Astrocytic and Neuronal Lactate Metabolism in the Brain of Angelman Syndrome Mice. Puerto Rico Neuroscience Conference. Dec 3, 2022

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- 16 Lyza M Martínez, Luis F. López, and Lisandro Cunci, AFM and Electrochemical Analysis of Different Biomolecules Using Npy-Specific Aptamer Modified Electrodes, 242nd ECS Meeting, Oct 9-12, Atlanta, GA

- 17 Hiram J López-Astacio, Lisandro Cunci, and Christopher Pollock, Development and Improvement of an Electrochemical Cell for X-Ray Fluorescence and Absorption Spectroscopy, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 18 Dorian Enid Meléndez-Rodríguez, Lisandro Cunci, Yolimar Vázquez and Lauren Fernández-Vega, Fabrication of Aptamer-Modified Microelectrodes for Npy Detection in Artificial Cerebrospinal Fluid Using Methylene Blue As Electrochemical Signal Amplifier, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 19 Lauren Fernández-Vega, Lisandro Cunci, Yolimar Vázquez and Dorian Enid Meléndez-Rodríguez, Neuropeptide Y Detection Using an Aptamer-Modified Microelectrode Together with Methylene Blue As a Redox Probe, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 20 Yolimar Vázquez, Lisandro Cunci, Lauren Fernández-Vega and Dorian Enid Meléndez-Rodríguez, Measurement of Neuropeptide Y By Square Wave Voltammetry Using Aptamer-Modified Platinum Microelectrodes and Methylene Blue, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 21 Namir Andrea Huertas and Lisandro Cunci, Metal Oxide Inclusion in Polycrystalline Pt-Based Electrocatalyst for an Ammonia Oxidation Reaction, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 22 Abigail Ruiz, In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis. 19th Ponce Research Institute Annual Scientific Conference, (PR-PHSU), Ponce PR, May 6th 2023
- 23 Abigail Ruiz, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, May 12th 2023
- 24 Colón-Vázquez, J.; Rojas-Colón, L.A.; Malpica-Nieves, C.J.; Mendez-Gonzalez, M.P.; Skatchkov, S.N.; Eaton, M.J.; and Rivera-Aponte, D.E. Hyperglycemia decreases astrocytic Kir4.1 and AMPK protein expression while elevating DNMT-1 and pro-inflammatory cytokines. 30th Puerto Rico Neuroscience Conference, Ponce, P.R., December 2, 2023
- 25 Angueira-Laureano, A.A.; Colon-Vazquez, J ; Skatchkov, S.N.; Eaton, M.J.; and Rivera-Aponte, D.E. The Effect of Aminoguanidine on Kir4.1 protein channel expression in Hyperglycemic Astrocytes. University of Puerto Rico, Bayamon Campus, Biology Department Annual Symposium, Bayamon, P.R., December, 2023
- 26 Rojas-Colón, L.A.; Maisonet-Nieves, M; Malpica-Nieves, C.J.; Rivera-Aponte, D.E.; Skatchkov, S.N.; Eaton, M.J.; and Méndez-González, M.P. Hyperglycemia decreases astrocytic Kir4.1 and AMPK protein expression while elevating DNMT-1 and pro-inflammatory cytokines. 30th Puerto Rico Neuroscience Conference, Ponce, P.R., December 2, 2023
- 27 Uffary, A.J and Torres, C. Paraquat exposure affects the survival in *C. elegans* SDO1G85R ALS model. 30th Puerto Rico Neuroscience Conference 2022, Pontifical Catholic University of Puerto Rico, Ponce, P.R (December 3 2022)
- 28 Torres, C., Laboy E.T., Morales, D, Uffary A.J. and Ramos, L.P. Study of mutants of Sod-1G92A and mitochondrial abundance in Amyotrophic Lateral Sclerosis. 30th Puerto Rico Neuroscience Conference 2022, Pontifical Catholic University of Puerto Rico, Ponce, P.R (December 3, 2022)
- 29 "Y. Loperena-Álvarez, R. J. Colón-Reyes, L. Kozobowski. Crosstalk between titanization in the *Cryptotococcus neoformans/gattii* complex and macrophages American Society of Cell Biology and European Molecular Biology Organization Annual Meeting. Washington DC, December 3-7, 2022" USA
- 30 Lebrón, Neidy; García, Verónica; León, Sherley; Soto, Adamaris; Velázquez, Jelizalee; Vera, Nicole; Maldonado, Adamaris; Pagán, José; Correa, Patricia; Ramón, Giancarlo; Suárez, Edu; Ruiz, Abigail BASAL EXPRESSION OF RECEPTORS IN EPITHELIAL AND STROMAL CELLS, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 31 Soto, Adamaris; León, Sherley; Velázquez, Jelizalee; Vera, Nicole; García, Verónica; Lebrón, Neidy; Maldonado, Adamaris; Pagán, José; Ramón Giancarlo; Correa, Patricia; Suárez Edu B; Ruiz, Abigail ADHESION OF ENDOMETRIAL STROMAL AND EPITHELIAL CELL LINES, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 32 Vera, Nicole; Velázquez, Jelizalee; García, Verónica; Lebrón, Neidy; León, Sherley; Soto, Adamaris; Maldonado, Adamaris; Correa, Patricia; Pagán, José; Suarez, Edu; Ruiz, Abigail Department of Biology, University of Puerto Rico in Ponce IN-VITRO STUDY OF BASAL EXPRESSION OF ADHESION MOLECULES IN EPITHELIAL AND ENDOMETRIAL STROMAL CELLS, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023

- 33 Pérez-Caraballo, D.; Ferrer-Acosta, Y.; Suárez-Arroyo, I.J.; Delgado-Reyes, Y.; Torres, G. Development of phyto-nanosuspensions of cinnamon, graviola, and oregano extracts as adjuvant lung cancer therapy. PR INBRE External Advisory Committee Meeting and Annual Retreat Hyatt Regency Grand Reserve, Rio Grande, Puerto Rico, March 17-19, 2023.
- 34 Nieves-Oquendo, P., Sánchez, A., Vivas-Mejía, P., Ospina-Millán, C. A. "Isolation and Nanocarrier Design of Simalikalactone D" National IDeA Symposium of Biomedical Research Excellence (NISBRE), December 12-14, 2022.
- 35 Nieves-Oquendo, P., Maldonado, N., Sánchez, A., Vivas-Mejía, P., Ospina-Millán, C. A. "": Nanocarrier design and characterization of SKD derivatives. ACS Crossroads of Chemistry, Indianapolis, Indiana, March 27, 2023.

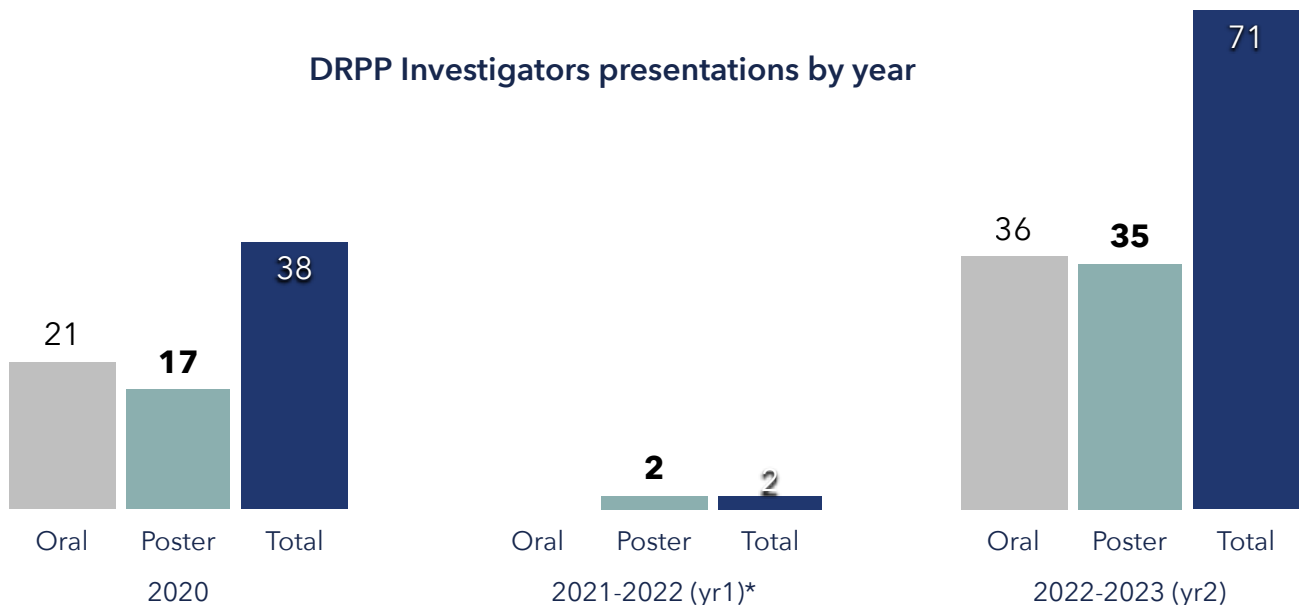
## 3 6 O R A L P R E S E N T A T I O N S

- 1 Salgado, I. Initial Pre-clinical studies of novel Influenza-A antivirals - R16 submission - PR- INBRE- DRPP Meeting , January 13, 2023
- 2 Ospina, C. A. "Natural Products Research in Puerto Rico: Isolation of Bioactive Metabolites from Tropical Plants" Oral Presentation, presented at American Council of Medicinally Active Plants. 11th Annual Hybrid Conference, Inter-American University of Puerto Rico. July 01, 2022
- 3 Álvarez E, Lugo E, Lozada L and Boukli N.M. (2022). Modification of Endoplasmic Reticulum Stress in HIV-1 Gp120 Glioma Cells. August 5, 2022. The Cancer Prevention and Control Conference (CAPAC). San Juan, PR, USA.
- 4 Ortiz E, Álvarez E, Lugo E, and Boukli N.M. (2022). HIV-1 Gp120 Induces a Survival Response In Glioblastoma Via The Unfolded Protein Response. November 3, 2022. Forward Research Symposium. San Juan, PR, USA.
- 5 Álvarez E, Lugo E, Ortiz E, Franceschini A and Boukli N.M. (2022) PSP limits HIV-1 Entry through UPR-induced PKR activation signaling. November 3, 2022. Forward Research Symposium. San Juan, PR, USA.
- 6 López, M. Targeting triple-negative breast cancer mitochondrial metabolism and bioenergetics. Pontifica Universidad Javeriana, Bogota, Colombia. November, 08, 2022. Online presentation.
- 7 Parés-Matos, E.I.; Carrasquillo-Carrión, K.; Roche-Lima, A.; Rodríguez-Medina J.R. Molecular docking studies between Ras2p, the cytoplasmic domain of three members of the Wsc-family and several therapeutic drugs. SERMACS 2022, Biochemistry I: Structure / Dynamics Session , Puerto Rico Convention Center, San Juan, PR, October 19, 2022.
- 8 Vargas-Virella, A; García-Cortés, K; Martínez-Figueroa, Z; Cruz, E; October 22, 2022 , Astrocytic and Neuronal Lactate Metabolism in the Brain of Angelman Syndrome Mice. Puerto Rico Physiological Society conference
- 9 Antonio Vázquez, Joannes Díaz, Edgar Vázquez, Lina Acosta, and Lisandro Cunci, Inkjet Electrodes for Developing Wearable Sensors for the Detection of Peptides and Neurotransmitters in Sweat Using Flexible Materials, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 10 A. Ruiz. In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis. PR-LSAMP scientific talks: In vitro and in vivo endometriosis studies, UPR Ponce February 16th , 2023
- 11 A. Ruiz. In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis. UPR Ponce Faculty Research Congress Meeting, UPR Ponce, April 28th, 2023
- 12 A. Ruiz. In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis. PRISM/JTM Saturday. UPR Bayamón, April 29th, 2023
- 13 Rivera-Aponte, D.E. Hyperglycemia Reduces Kir4.1 Potassium Channel Expression and Function : Relevance to Stroke. Seminar Serie, November 9 2022, University of Puerto Rico, Aguadilla,

- 14 Rivera-Aponte, D.E. Rapid Response for COVID-19 Pandemic: A vaccination Clinic Layout. Alliance Scientific Day 2023, San Juan, P.R. May 3, 2023
- 15 Crosstalk between *C. neformans/gattii* and macrophages in the development of titan cells. Externa Advisors Comitee Meeting and Annual Retreat. March 17, 2023
- 16 Crosstalk between *C. neformans/gattii* and macrophages in the development of titan cells. Sociedad de Microbiólogos de Puerto Rico Annual Meeting. June 8, 2023
- 17 De León-Rodríguez, N. Genomics, ecology and health. International Symposium Bioinformatics applied to human health. Universidad Tecnologica del Choco Diego Luis Cordoba. March 16, 2023
- 18 Ramón Robles, Giancarlo; Cartagena, Alondra; León Natalia; Alvarado Carolina; Díaz, Lioniellys; Pagán, José; Maldonado, Adamaris; Suárez, Edu; Ruiz, Abigail EFFECTS OF CXCR4 INHIBITORS IN BIOLOGICAL PATHWAYS USING ENDOMETRIAL AND ENDOMETRIOTIC CELL LINES, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 19 Blondet-Vázquez, Laura; Correa-Torres, Patricia; Santiago-Amundaray, Luis; Pagán-Rivera, José; García, Verónica; Flores, Idhaliz; Suárez, Edu; Piñeiro, Fernando; Appleyard, Caroline B; Ruiz, Abigail IN VIVO EFFECTS OF AMD3100 IN A RAT MODEL OF ENDOMETRIOSIS, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 20 Maldonado Irizarry, Adamaris, Vélez Colón, María del Carmen, Suárez Martínez, Edu., Ruiz Rivera, Abigail EFFECTS OF CXCR4 INHIBITORS IN CELL PROLIFERATION, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 21 Santiago Amundaray, Luis & Pagán, José, Blondet, Laura; Correa, Patricia; Maldonado, Adamaris; García, Verónica; Piñeiro, Fernando; Flores, Idhaliz; Suárez, Edu; Appleyard, Caroline; Ruiz, Abigail. IN VITRO EFFECTS OF THE CXCR4 INHIBITOR, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 22 López-Rivera, Rafael; Piñero-González, Fernando; Ruiz Abigail LANGUAGE PROCESSING TOOLS FOR ENDOMETRIOSIS META-ANALYSIS, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 23 Ruiz-Rivera, Abigail, Blondet-Vázquez, Laura; Correa-Torres, Patricia; Santiago-Amundaray, Luis; Pagán-Rivera, José; García, Verónica; Flores, Idhaliz; Suárez, Edu; Piñeiro, Fernando; Appleyard, Caroline B In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis, External Advisory Committee Meeting & Annual Retreat, Rio Grande, PR March 18, 2023
- 24 Ruiz-Rivera, Abigail, Blondet-Vázquez, Laura; Correa-Torres, Patricia; Santiago-Amundaray, Luis; Pagán-Rivera, José; García, Verónica; Flores, Idhaliz; Suárez, Edu; Piñeiro, Fernando; Appleyard, Caroline In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis; XXIV Congreso de Investigación y Creación Académicas, UPR Ponce, April 28, 2023, Ponce, PR
- 25 Ruiz-Rivera, Abigail; In vitro and in vivo endometriosis studies, PRLSAMP talks in UPR-Ponce April 27, Ponce PR
- 26 García, Verónica; Lebrón, Neidy, León, Sherley, Soto, Adamaris, Velázquez, Jelizalee, Vera, Nicole, Maldonado, Adamaris, Pagán, José, Correa, Patricia, Ramón, Giancarlo, Suárez, Edu, Ruiz, Abigail BASAL EXPRESSION OF RECEPTORS IN EPITHELIAL AND STROMAL CELLS, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 27 León, Sherley., Soto, Adamaris., Velázquez, Jelizalee., Vera, Nicole., García, Verónica., Lebrón, Neidy., Maldonado, Adamaris., Pagán, José., Ramón Giancarlo., Correa, Patricia., Suárez Edu B., Ruiz, Abigail ADHESION OF ENDOMETRIAL STROMAL AND EPITHELIAL CELL LINES, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 28 Velázquez, Jelizalee., Vera, Nicole., García, Verónica., Lebrón, Neidy., León, Sherley., Soto, Adamaris., Maldonado, Adamaris., Correa, Patricia., Pagán, José., Suárez, Edu., Ruiz, Abigail Department of Biology, University of Puerto Rico in Ponce IN-VITRO STUDY OF BASAL EXPRESSION OF ADHESION MOLECULES IN EPITHELIAL AND ENDOMETRIAL STROMAL CELLS, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023

- 29 López-Rivera, Rafael; Piñero-González, Fernando; Ruiz Abigail LANGUAGE PROCESSING TOOLS FOR ENDOMETRIOSIS META-ANALYSIS, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 30 Pagán, José; Santiago Amundaray, Luis, Blondet, Laura; Correa, Patricia; Maldonado, Adamaris; García, Verónica; Piñero, Fernando; Flores, Idhaliz; Suárez, Edu; Appleyard, Caroline; Ruiz, Abigail. 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 31 Maldonado Irizarry, Adamaris., Vélez Colón, María del Carmen., Suárez Martínez, Edu., Ruiz Rivera, Abigail EFFECTS OF CXCR4 INHIBITORS IN CELL PROLIFERATION 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 32 Ramón Robles, Giancarlo; Cartagena , Alondra; León Natalia; Alvarado Carolina; Díaz, Lioniellys; Pagán, José; Maldonado, Adamaris; Suárez, Edu; Ruiz, Abigail EFFECTS OF CXCR4 INHIBITORS IN BIOLOGICAL PATHWAYS USING ENDOMETRIAL AND ENDOMETRIOTIC CELL LINES, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 33 Correa-Torres, Patricia; Blondet-Vázquez, Laura; Santiago-Amundaray, Luis; Pagán-Rivera, José; García, Verónica; Flores, Idhaliz; Suárez, Edu; Piñero, Fernando; Appleyard, Caroline B; Ruiz, Abigail IN VIVO EFFECTS OF AMD3100 IN A RAT MODEL OF ENDOMETRIOSIS, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 34 Ferrer-Acosta, Y. ; Delgado-Reyes Y.; Caraballo-Pérez, D. Effects of phytonutrients in resistance and metastasis in lung carcinoma. PR INBRE External Advisory Committee Meeting and Annual Retreat Hyatt Regency Grand Reserve, Rio Grande, Puerto Rico, March 17-19, 2023.
- 35 Ortiz-Bermúdez, P. Unraveling clues to polymicrobial interactions through functional metagenomics from Puerto Rican ecosystems. Invited speaker: Cambridge Infectious Diseases Center, Cambridge, UK. May 2023.
- 36 Ortiz-Bermúdez, P. Unraveling clues to polymicrobial interactions through functional metagenomics from Puerto Rican ecosystems. 2023 Annual Symposium, "Sociedad de Microbiólogos de Puerto Rico". June 2023.

**DRPP Investigators presentations by year**



\* Year 2021-2022: Started a new grant cycle period.  
Only 4 pilots projects were active that year.



**STUDENTS MENTORED  
BY  
DRPP INVESTIGATORS**

**116**

Students were mentored by DRPP Investigators

**76** Undergraduate students were mentored by DRPP Investigators

28 UG completed their degree this year

**40** Graduate students were mentored by DRPP Investigators

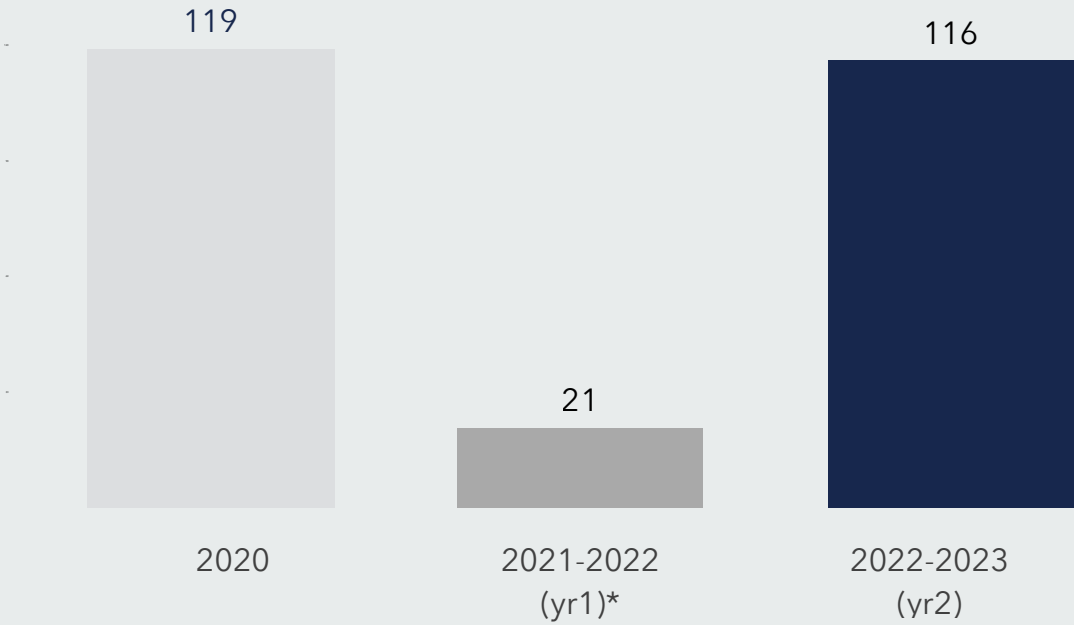
15 M.S. student ( 3 completed M.S.)

17 Ph.D. student

8 M.D. student

CONT. STUDENTS MENTORED BY DRPP INVESTIGATORS

Students mentored by DRPP Investigators



\* Year 2021-2022: Started a new grant cycle period. Only 4 pilots projects were active that year.



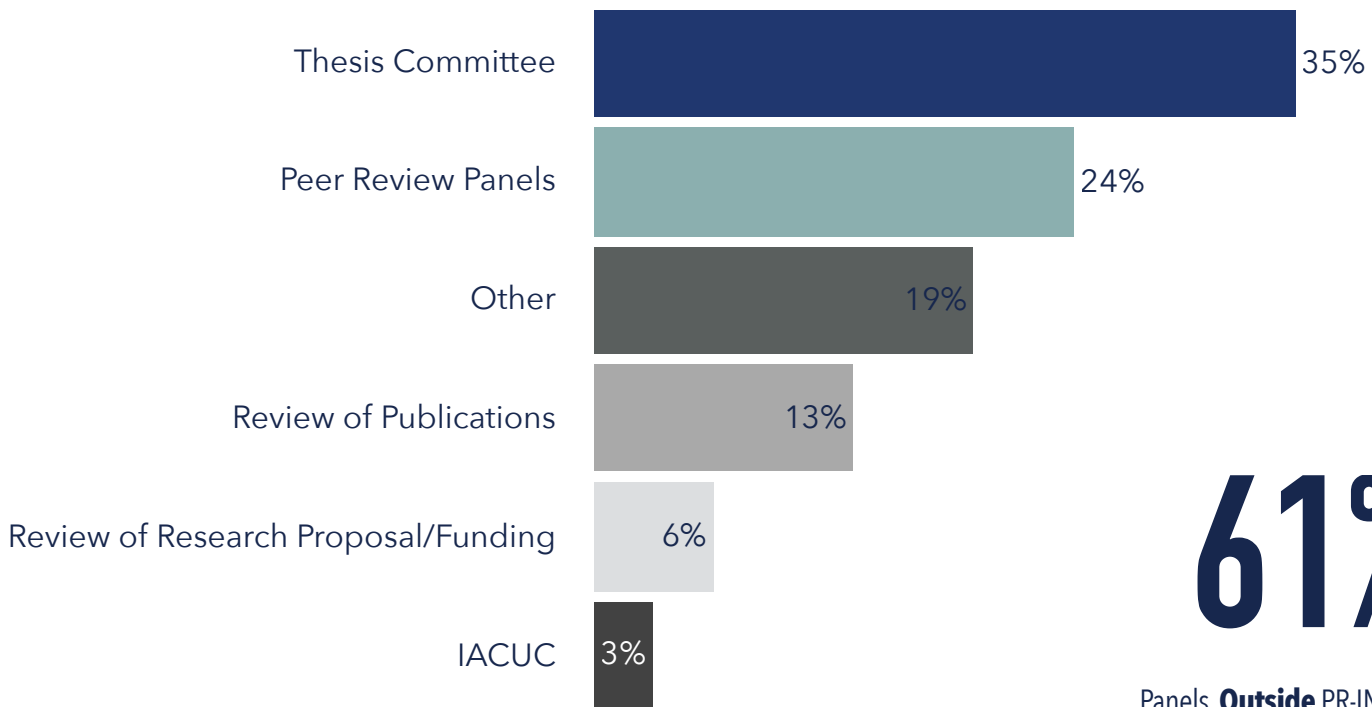
# SERVICE IN PEER REVIEW PANELS BY DRPP INVESTIGATORS

Investigators collaborated in 31 peer review panels

## PEER REVIEW PANELS

- ▶ 35% (n=11) of DRPP investigators participated in Thesis Committee panels.
- ▶ 61% (n=19) of the peer review panels were outside the PR-INBRE Network Institutions (*i.e. journals, abstract reviewers, study section-grants*).

Participation by type of peer review panel

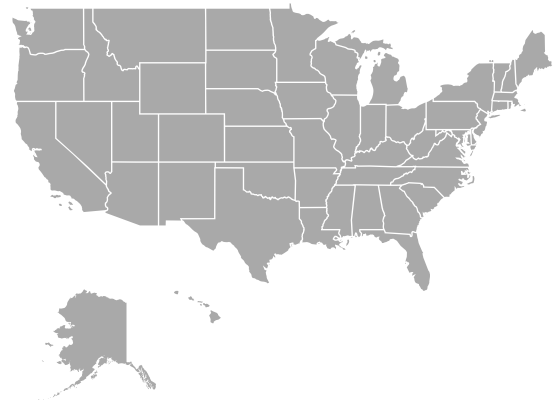


**61%**

Panels **Outside** PR-INBRE Network

**39%**

Panels **Inside** PR-INBRE Network



CONT. **SERVICE IN PEER REVIEW PANELS**  
BY DRPP INVESTIGATORS

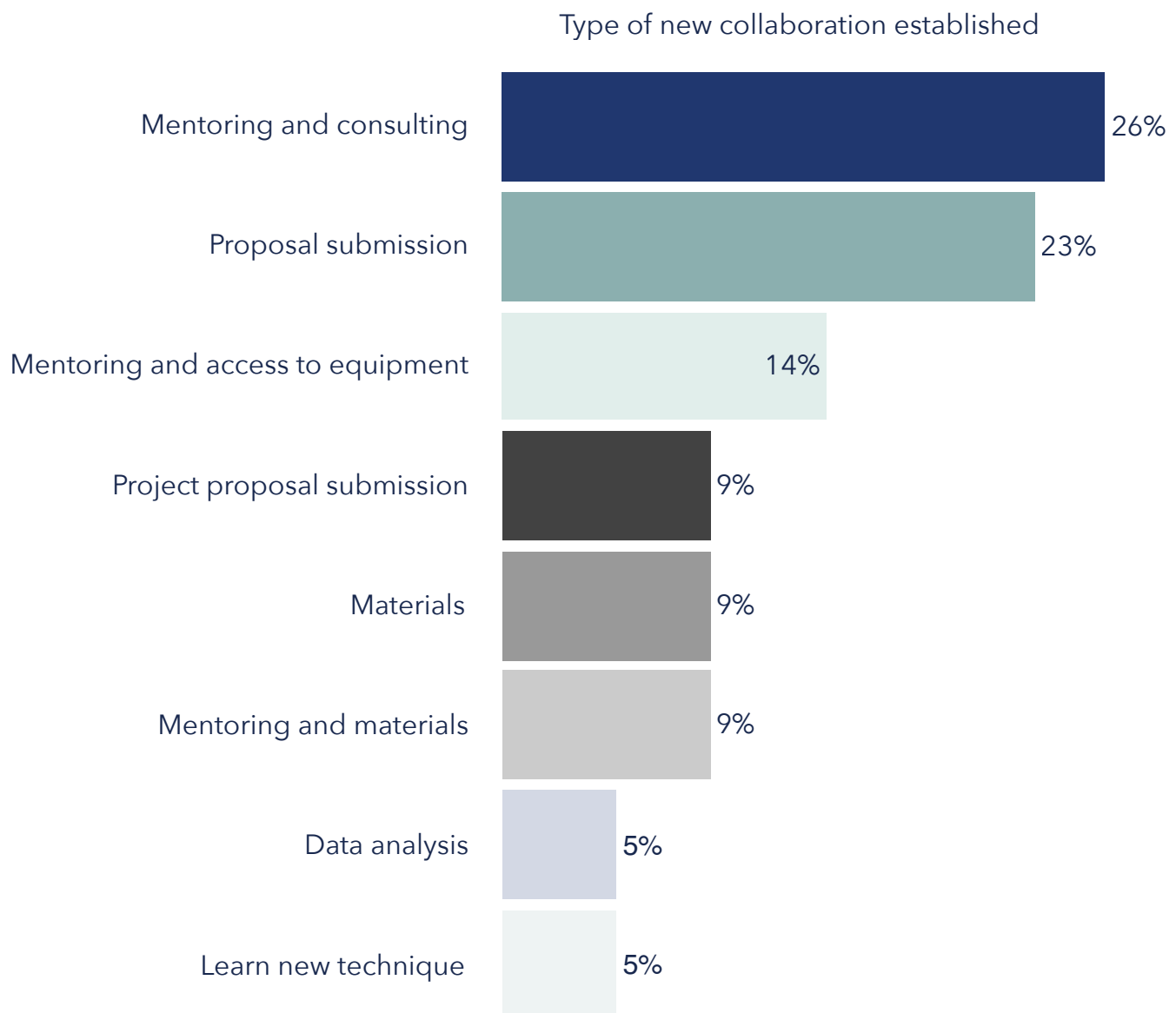
<b>DRPP Investigator</b>	<b>Type of PANEL</b>	<b>Agency or Organization</b>
Lisandro Cunci	Review of Research Proposal/ Funding (1)	· NIH
Carlos Díaz	Thesis Committee (2)	· PHSU · Loma Linda University School of Medicine
Yancy Ferrer	Thesis Committee (1)	· Universidad Central del Caribe
Marcos López	Peer Review Panels (1) Review of Research Proposal/ Funding (2) Review of Publications (2) Other (1)	· NIH · PRSTRT (2) · Frontiers Journals (2) · SACNAS
Elsie Parés	Thesis Committee (1) Peer Review Panels (5) Other (1)	· UPR-Mayagüez · IJMS_MDPI (4) · Bioinformatics · SERMACS 2022
David Rivera	Thesis Committee (1) Other (1)	· Universidad Central del Caribe · UPR-Bayamón
Iris Salgado	IACUC (1) Thesis Committee (5) Other (1)	· Universidad Central del Caribe
Antonio Martins	Review of Publications (2) Thesis Committee (1) Other (1)	· Biomedicines · Frontiers in drug delivery: CNS Drug Delivery · Universidad de la Frontera

# NEW RESEARCH COLLABORATIONS BY DRPP INVESTIGATORS

22 research collaborations were established during this period

## COLLABORATIONS

- ▶ 27% (n=6) of the new collaborations were related to mentoring or consulting
- ▶ 23% (n=5) were collaborations for developing a grant proposal



## NEW RESEARCH COLLABORATIONS BY DRPP INVESTIGATORS

DRPP Investigator	Type of Collaboration	Collaborator	Purpose
Iris Salgado	1. Learn new Technique	Luis Martínez Sobrido	We will apply this technology to identify and characterize the influenza antiviral properties of our compounds in-vitro and in-vivo. We will visit his laboratory at Texas Biomedical Research Institute to train us in reverse genetics to generate recombinant viruses and with our future animal models of influenza viral infection.
Ceidy Torres	2. Data analysis	Dr. Luis A. Vázquez - InterAmerican Arecibo	Contribute with the analysis of Cu-Zn Superoxide dismutase protein family and basic training of bioinformatic tools and R. Also collaborate with a new project about novo genome assembly of endemic tree in PR, Polygala cowellii.
	3. Mentoring and consulting	Dr. Elsie Pares UPR.Mayaguez	Provide consulting about bioinformatic tools and analysis of Sod1 protein.
Carlos Díaz	4. Mentoring and consulting	Mariano de Socarraz, CEO CorePlus Pathology Services	To evaluate measures to improve biopsy predictions of radical prostatectomy pathological findings
Elsie Pares	5. Mentoring and consulting	Dr. Kazaniets Dr. M.Cooke Dr. Cornelis P. Vlaar Dr. Dharmawardhane	To validate protein-protein interactions between a GEF and Rac, and compare the proposed model with its actual crystal structure; perform docking experiments of FARP1, ARHGEF39 or TIAM2 with Rac; to carry out molecular dynamics of the protein-protein structure to obtain the most favorable structure; and to identify potential binding pockets on the GEF for virtual screening.
	6. Mentoring and consulting	Dr. Enrique Meléndez	To generate functionally peptide-based gold nanoparticles (AuNPs) with specific serine-rich peptides that has shown some binding activity against Rom2p and Ras2p through our recent molecular docking studies and to use them for inhibitory studies with several yeast models.
	7. Mentoring and consulting	Dr. David J. Sanabria	Testing several k-Ras/Ras2 inhibitors using a fluorescence-based electronic microscope to understand its inhibitor capacity within several yeast strains.
	8. Mentoring and access to equipment	Dr. José R. Rodríguez	Discussion and analysis of the results obtained of viability analyses with different yeast strains exposed to several k-ras/ras2 inhibitors.

## NEW RESEARCH COLLABORATIONS BY DRPP INVESTIGATORS

DRPP Investigator	Type of Collaboration	Collaborator	Purpose
Natasha DeLeón	9. Materials	Konstantinos Konstantinidis	Donation of sequencing for all samples associated to this project, and mentoring.
David Rivera	10. Mentoring and access to equipment	Dr. Misty Eaton	Provides mentoring support, access to equipment and supplies
	11. Mentoring and access to equipment	Dr. Serguei Skatchkov	Provides mentoring support, access to equipment and supplies
	12. Mentoring and materials	Dr. Miguel Méndez	Provides support in supplies and consultations
Edu Suárez	13. Mentoring and materials	Dr. Camillo Mora & Dr. Lisandro Cunci	To provide and prepare human saliva samples. In addition, our group will be integrating the human cell and molecular biology component (antibodies concentration optimization, recommendation of specific aptamers, among other) to complement and validate their studies.
Yancy Ferrer	14. Materials	Dr. Yaritza Inostroza, San Juan Bautista SoM	She provided primers to detect inflammation marker genes by RT-PCR
	15. Project Proposal submission	Dr. Nadezhda Sabeva, UCC SoM	Collaborate in a new project in which we will be performing metabolomics in transgenic mice
	16. Project Proposal submission	Dr. Yamixa Delgado, San Juan Bautista SoM	Collaborate in a COBRE Seeds project to determine the effects of edelfosine on neuroplasticity
	17. Mentoring and consulting	Dr. Eduardo Caro, UPR-MSO	Collaborate in this INBRE project to identify the active compounds leading to decrease cancer resistance in our nanosuspensions (NS), once we have more defined bioactive fractions of these NS.
Marcos López	18. Proposal submission	Dr. Kevin Alicea,	New collaboration in cancer biology project. I am co-PI of the project. Project was funded by INBRE as a full proposal.
	19. Proposal submission	Dr. Ileana Rodríguez,	New collaboration in an natural products/ experimental therapeutics proposal. Project was submitted as an INBRE pilot proposal.
	20. Proposal submission	Mirna Rivera Claudio, Ph.D.	New collaboration in an cancer experimental therapeutics proposal. Project was submitted as an INBRE pilot proposal.
	21. Proposal submission	Dr. Wilfredo de Jesus	New collaboration in a primary ciliary dyskinesia proposal. Project was submitted as an INBRE pilot proposal.
Lisandro Cunci	22. Proposal submission	Dr. Bryan Pivovar	Proposal submitted to DOE and approved in energy research.

# AWARDS RECEIVED BY DRPP INVESTIGATORS

9 awards received by DRPP investigator this period

## **Claudia Ospina**

1. Recognition as American Society of Pharmacognosy, New Member

## **Nawal M. Boukli**

2. 2022 Women in Neuro-Oncology and Diversity Scholarship Award by the Society Neuro-Oncology
3. Chair of the UCC Graduate Biomedical Studies Admissions Committee
4. Achievement for completing the certification in effective college instruction, Awarded in collaboration with the American Council on Education.

## **Carlos Diaz**

5. Early Investigator Travel Award, American Society for Intercellular Communication
6. Best Talk Award, American Society for Intercellular Communication



**Natasha De León**

- 7. Outstanding poster presentation- Student Travis Santana

**Lisandro Cunci**

- 8. Chair-Elect of the American Chemical Society

**Edu Suárez**

- 9. PR Women in Science/ Scientific Productivity in Publications



## PRODUCTIVITY SUMMARY

DRPP Investigator	Publication / Manuscript	Grants Submitted/ Awarded	Presentations (oral & poster)	Research Collaborations	Peer Review Panels	Students Mentored
Abigail Ruiz	-	-/1	24	-	-	6
Claudia Ospina	-	2/1	8	-	-	15
Lisandro Cunci	1/-	2/1	7	1	1	20
David Rivera	-/2	1/1	5	3	2	5
Marian Sepúlveda	-	1/-	4	-	-	-
Nawal M. Boukli	-	-	4	-	-	5
Yaliz Loperena	-	-	3	-	-	6
Elsie Pares	-	2/1	3	4	7	7
Ceidy Torres	-	-	2	2	-	4
Patricia Ortiz	-/1	1/-	2	-	-	6
Natasha De León	-	-	2	1	-	17
Emanuel Cruz	-/1	-	2	-	-	-
Yancy Ferrer	-/1	1/-	2	4	1	5
Carlos Díaz	-	2/-	1	1	2	4
Marcos López	-	1/-	1	4	6	8
Iris Salgado	-	1/-	1	1	8	3
Edu Suárez	-/1	-/1+	-	-	-	6
David Sanabria	1/-	2/1	-	-	-	-
Antonio Martin	1*/-	-	-	-	4	4
Antonio Colón	-	-	-	-	-	1

\*Manuscript collaboration between Dr. Yancy Ferrer and Dr. Antonio Martin

+ Grant awarded to Dr. Edu Suárez and Abigail Ruiz



# JUNIOR RESEARCH ASSOCIATES

Since 2001, the PR-INBRE have been supporting through the Science and Technology Competency Education Core (STCE) a significant number of undergraduate and graduates students. The STCE main goals is to provide opportunities for promising undergraduate and graduate students by sponsoring research training and enrichment opportunities, provide support for travel conducive to research training and sponsor workshops, specialized courses and training in science, technology, engineering, and mathematics (STEM) areas. The STCE helps strengthen research capacity at network institutions by providing opportunities for students to increase their knowledge of science topics and develop research skills. Student participation in the proposed STCE activities will prepare them for a successful application process into graduate programs.

## Junior Research Associates (Year 2022-2023)

### Undergraduate Students

Student	Institution	Mentor
1. Leonardo Birriel	UPR-Rio Piedras (M)	Dr. Ingrid Montes
2. Alejandro Padilla	UPR-Cayey (PUIs)	Dr. Enrique Rodríguez Borrero (PR-INBRE Visiting Faculty Awardee, Summer 2022)
3. Fatima Hernández	UAGM-Cupey (PUIs)	Dr. Beatriz Zayas, PR-INBRE CRI Director
4. Neymar Maldonado	Inter-Bayamón (OI)	Dr. Claudia Ospina, PR-INBRE Pilot Project
5. Daviana Méndez	UAGM-Carolina (PUIs)	Dr. Loyda Méndez, STCE Core Coordinator
6. Paola Nieves	Inter-Bayamón (OI)	Dr. Claudia Ospina, PR-INBRE Pilot Project
7. Gerianne Oliveri	UPR-Rio Piedras (M)	Dr. Filipa Godoy, BIRC Core Coordinator
8. Omaris Rosario	UPR-Cayey (PUIs)	Dr. Enrique Rodríguez Borrero (PR-INBRE Visiting Faculty Awardee, Summer 2022)
9. Keren Valentin	UAGM-Cupey (PUIs)	Dr. José Rodríguez (PI, PR-INBRE) & Nataliya Chorna (PR-INBRE Metabolomics Director)

## CONT. JUNIOR RESEARCH ASSOCIATE

### Graduate Students

<b>Student</b>	<b>Institution</b>	<b>Mentor</b>
1. Carlos García	UPR-Mayagüez (PUIs)	Dr. Elsie Pares, PR-INBRE Full Project
2. Elliot Rodríguez	PHSU (OI)	Dr. Vanessa Rivera
3. Dariashka Pérez	UCC (OI)	Dr. Yancy Ferrer, PR-INBRE Pilot Project
4. Axel Ufarry	Pontificia Universidad Católica (OI)	Dr. Ceidy Torres, PR-INBRE Pilot Project
5. Grace Vélez	UCC (OI)	Dr. Lilia Kucheryavykh
6. Jescelica Ortiz	UCC (OI)	Dr. Lilia Kucheryavykh

## JRA STUDENTS PRODUCTIVITY SUMMARY

5

New **publications** with PMCID# complete

28

Oral and Poster **Presentations**

14

New **research collaborations** developed

4

New **Honors & Awards** received

# JRAS NEW PUBLICATIONS

Five (5) articles published by the JRA students

## JRAS 2022-2023

**Grace Vélez**, JRA Graduate

1. Crespo GV, Ortiz J, O'Farrill EH, Vlaar CP, Inyushin M, Kucheryavykh Y, Kucheryavykh L. The Rac inhibitor HV-107 as a potential therapeutic for metastatic breast cancer. *Mol Med.* 2023 Jun 14;29(1):75. doi: 10.1186/s10020-023-00678-7. PMID: 37316799; **PMCID: PMC10268403.**

**Jescelica Ortiz**, JRA Graduate

2. Ortiz-Rivera J, Nuñez R, Kucheryavykh Y, Kucheryavykh L. The PYK2 inhibitor PF-562271 enhances the effect of temozolomide on tumor growth in a C57Bl/6-GI261 mouse glioma model. *J Neurooncol.* 2023 Feb 15. doi: 10.1007/s11060-023-04260-3. Epub ahead of print. PMID: 36790653. **PMCID: PMC9992029**

## JRAs Alumni (Past-Trainees)

**Brayan Villanova**

3. Ruiz Barrionuevo JM, Vilanova-Cuevas B, Álvarez A, Martín E, Malizia A, Galindo-Cardona A, de Cristóbal RE, Occhionero MA, Chalup A, Monmany-Garzia AC and Godoy-Vitorino F (2022) The Bacterial and Fungal Gut Microbiota of the Greater Wax Moth, *Galleria mellonella* L. Consuming Polyethylene and Polystyrene. *Front. Microbiol.* 13:918861. doi: 10.3389/fmicb.2022.918861. PMID: 35865934; **PMCID: PMC9294514.**

4. Ortiz AP, Acosta-Pagán KT, Oramas-Sepúlveda C, Castañeda-Ávila MA, Vilanova-Cuevas B, Ramos-Cartagena JM, Vivaldi JA, Pérez-Santiago J, Pérez CM, Godoy-Vitorino F. Oral microbiota and periodontitis severity among Hispanic adults. *Front Cell Infect Microbiol.* 2022 Nov 14;12:965159. doi: 10.3389/fcimb.2022.965159. PMID: 36452304; **PMCID: PMC9703052.**

**Jailenne Quiñones & Gabriela Ortiz**

5. Ortiz-Soto G, Babilonia-Díaz NS, Lacourt-Ventura MY, Rivera-Rodríguez DM, Quiñones-Rodríguez JI, Colón-Vargas M, Almodóvar-Rivera I, Ferrer-Torres LE, Suárez-Arroyo IJ, Martínez-Montemayor MM. Metadherin Regulates Inflammatory Breast Cancer Invasion and Metastasis. *Int J Mol Sci.* 2023 Feb 28;24(5):4694. doi: 10.3390/ijms24054694. PMID: 36902125; **PMCID: PMC10002532.**

 All publications have PMCID #

## MANUSCRIPTS

### 1. Elliot Rodriguez

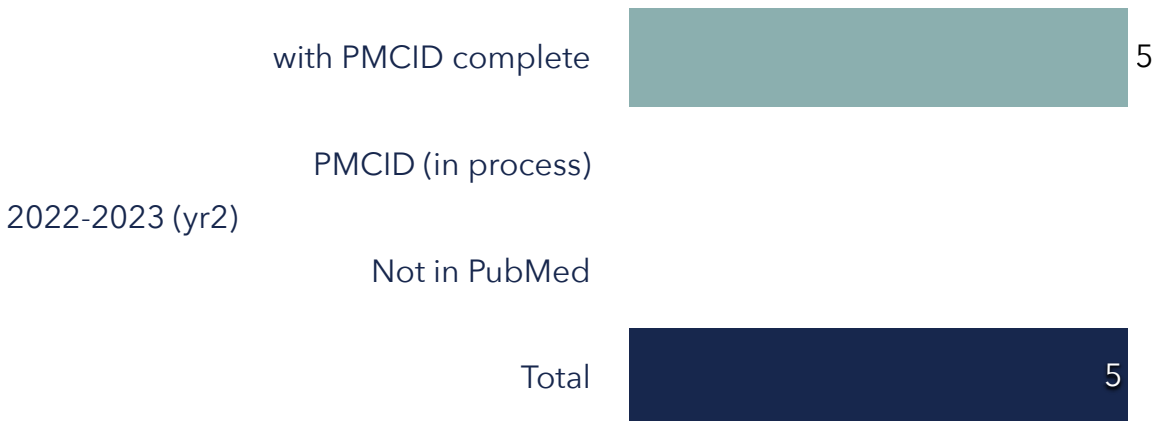
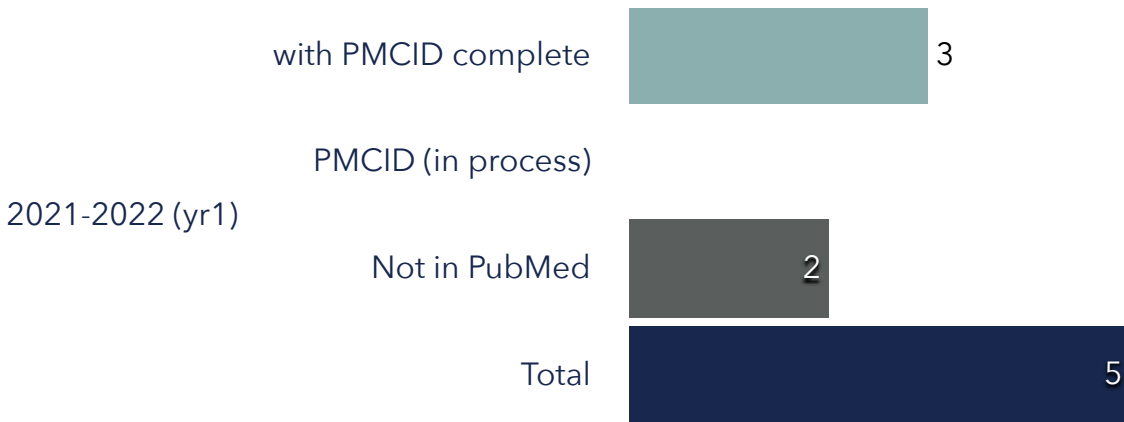
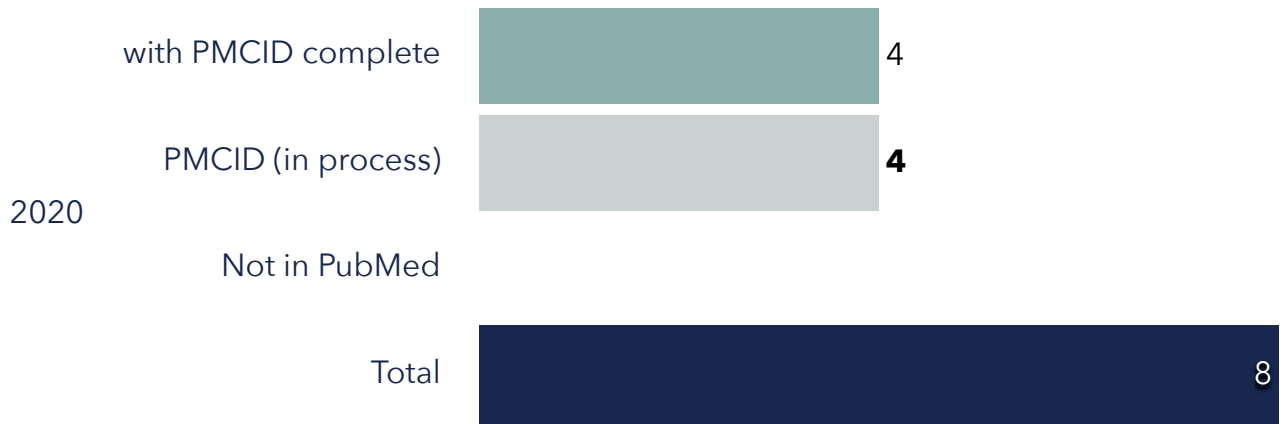
**Rodríguez-López ER**, López P, Mesplede T, Rivera-Amill V. Effect of HIV-1 Integrase Polymorphisms T218I/S on Viral Replication, Integration, and Antiretroviral Drug Efficacy. **[In preparation]**

### 2. Lysmarie Santos, Co-author: Juan López Garriga, STCE Core

Rodríguez-Mackenzie, A., **Santos-Velazquez, L.**, Arbelo, H Wymore, T., Lopez-Garriga, J. Mechanistic Inside into pH-Dependent SulfMyoglobin Formation: Spin Control and His64 Proton Relay Journal of Chemistry, December 2022. **[Submitted in June 2023]**



### JRAs students publications by years



\* Year 2021-2022: Started a new grant cycle period

# NEW PRESENTATIONS

Twenty-eight presentations were performed by the JRA students

## 28 PRESENTATIONS

- ▶ **7** Oral Presentations (5 UG Student, 2 Grad Student)
- ▶ **21** Poster Presentations (12 UG Student, 9 Grad Student)

	<b>7 Oral Presentation</b> 86% in Puerto Rico and 14% in USA	<b>Location</b>
1	Birriel-Rodríguez, L. Synthesis of Ferrocenyl-Urea-Chalcone: Exploring their antitumorigenic activity. Gulf Coast Undergraduate Research Symposium, Chemistry Division, Rice University, Houston, TX, October 2022.	USA
2	Hernández-Padilla, A. L.; Rosario-Luquis, O; Rodríguez-Borrero, E. High-protein diet method for alcohol-induced in the brain-gut axis of Drosophila melanogaster, STCE Summer Internship, Recinto de Ciencias Medicas, San Juan, PR, August 12, 2022.	PR
3	Rosario-Luquis, O; Hernández-Padilla, A. L.; Rodríguez-Borrero, E. Effects of a high-fat diet on the brain-gut axis and alcohol tolerance in Drosophila Melanogaster, STCE Summer Internship, Recinto de Ciencias Medicas, San Juan, PR, August 12, 2022.	PR
4	Valentín-López, K.; González, S.; Babu M.; Jessulat, M.; Rodríguez-Medina, J. Screening for recombinant strains of yeast for iMYTH cassette. STCE-PRINBRE First Summer Internship Program Poster Presentation, Conrado F. Asenjo Library, University of Puerto Rico Medical Sciences Campus, Río Piedras, Puerto Rico, August 12, 2022.	PR
5	Valentín-López, K.; González, S.; Babu M.; Jessulat, M.; Rodríguez-Medina, J. Assay for Yet3, a protein of unknown function, as a possible interacting partner of mitochondrial protein, Gut2, STCE JRA Meeting, December 16, 2022.	PR
6	Ortiz-Rivera, J. Dynamics of microglial activation and expression of cytokines after tumor resection. Research Seminar, UCC-School of Medicine, P.R., 2022	PR
7	Vélez-Crespo, G; Hernández-O;Farril,E; Vlaar P, C; Dharmawhardane, S; Castillo,L; Kucheryavykh,Y; Kucheryavykh,L. HV-107 and HV-118 as potential therapeutics for metastatic breast cancer. UCC Graduate studies research seminar, December 5, 2022.	PR

STUDENTS **ORAL PRESENTATIONS** AT  
EAC MEETING 2023





## CONT. NEW PRESENTATIONS

### 21 Poster Presentation

70% in Puerto Rico, 22% Virtually, 8% USA

1	Birriel-Rodríguez, L. Synthesis of Ferrocenyl-Urea-Chalcone: Exploring their antitumorigenic activity. Southeastern Regional American Chemical Society Meeting, San Juan, PR, October 2022.
2	Hernández-Solís, F.; Rios-Rodriguez, K.; Zayas, B. Toxicity of ABQ-48 in Breast Cancer Cells. 1st STCE/PRINBRE Summer Internship program, San Juan, PR, August 12, 2022
3	Menéndez-Escalera, D. L.; Casillas-Pagán, K. M.; Rosa, H. J.; Méndez, L. B. Microglia Involvement in Diesel Exhaust Particles Induced Neurotoxicity. PR-INBRE Undergraduate Summer Internship Program 2022, University of Puerto Rico - Medical Sciences Campus, San Juan, P.R. August 10, 2022.
4	Menéndez-Escalera, D. L.; Casillas-Pagán, K. M.; Rosa, H. J.; Méndez, L. B. Microglia Activation in Diesel Exhaust Particles Induced Neurotoxicity. ABRCMS 2022, Anaheim, CA. November 9-12, 2022.
5	Menéndez-Escalera, D. L.; Casillas-Pagán, K. M.; Rosa, H. J.; Méndez, L. B. Microglia Activation in Diesel Exhaust Particles Induced Neurotoxicity. Pontifical Catholic University, Ponce, P.R. December 3, 2022.
6	Menéndez-Escalera, D. L.; Casillas-Pagán, K. M.; Rosa, H. J.; Méndez, L. B. Microglia Activation in Diesel Exhaust Particles Induced Neurotoxicity. NISBRE 2022 (Virtual). December 12-14, 2022.
7	Paola C. Nieves-Oquendo, Neymar Maldonado-Vargas, Angenil García-Ortiz, Pablo E. Vivas-Mejía <sup>2</sup> and Claudia A. Ospina-Millán. Isolation and Nanocarrier Design of Simalikalactone D. 1st Summer Internship Program, University of Puerto Rico, Medical Sciences Campus, Aug 12, 2022.
8	Paola C. Nieves-Oquendo, Neymar Maldonado-Vargas, Angenil García-Ortiz, Pablo E. Vivas-Mejía <sup>2</sup> and Claudia A. Ospina-Millán. Isolation and Nanocarrier Design of Simalikalactone D. ACS Southeastern Regional Meeting, Puerto Rico Convention Center, Oct 20, 2022.
9	Olivieri-Henry, G.; Herrero-Rivera, C.; Pérez-Luzunaris, F.; Soler, C.; Ruiz, J.; Santiago, M. MD; Sala, A. C. PsyD; Sepúlveda-Rivera, V. MD; Godoy-Vitorino, F. PhD. Changes in the Gut Microbiome associated with Cognitive Impairment in Puerto Ricans with Alzheimer's disease. 1st Summer Internship Program, San Juan, PR, August 5, 2022.
10	Olivieri-Henry, G.; Herrero-Rivera, C.; Perez-Luzunaris, F.; Soler, C.; Ruiz, J.; Santiago, M. MD; Sala, A. C. PsyD; Sepúlveda-Rivera, V. MD; Godoy-Vitorino, F. PhD. Changes in the Gut Microbiome associated with Cognitive Impairment in Puerto Ricans with Alzheimer's disease. 8th Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE), Virtual, December 12-14, 2022.
11	Neymar Maldonado-Vargas, Paola C. Nieves-Oquendo, Claudia A. Ospina-Millán. Study of the chemical composition of the hexane extract from Simarouba. 1st Summer Internship Program, University of Puerto Rico, Medical Sciences Campus, August 12, 2022.
12	Neymar Maldonado-Vargas, Paola C. Nieves-Oquendo, Claudia A. Ospina-Millán. Study of the chemical composition of the hexane extract from Simarouba. ACS Southeastern Regional Meeting, Puerto Rico Convention Center, October 20, 2022.

## CONT. NEW PRESENTATIONS

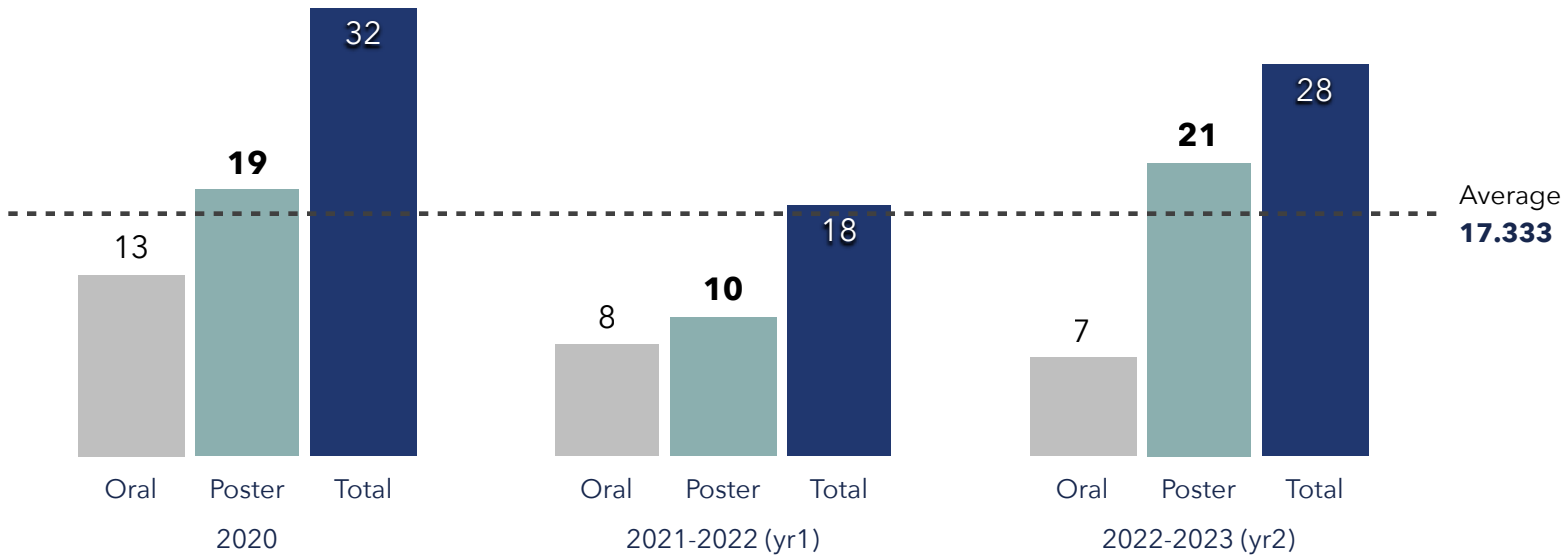
13	García-Cortés, C. and Parés-Matos, E. Isolation and characterization of overexpressed Human Serum Amyloid A protein complexes from cytokines-induced HepG2 cells. Southeastern Regional Meeting of the American Chemical Society, San Juan, PR, October 19, 2022.
14	García-Cortés, C. and Parés-Matos, E. Isolation and characterization of overexpressed Human Serum Amyloid A protein complexes from cytokines-induced HepG2 cells. National IDeA Symposium of Biomedical Research Excellence, December 12, 2022.
15	Elliott Rodríguez López, Pablo López, Thibault Mesplède, Vanessa Rivera-Amill. "Effect of HIV-1 Integrase Polymorphisms on DNA-Protein Interactions and Integrase Inhibitors Efficacy" National IDeA Symposium of Biomedical Research Excellence, December 12-14, 2022.
16	Ufarry Alvarado, A. J.; Torres Ortiz, C. Paraquat exposure affects the survival in <i>C. elegans</i> SOD1-G85R ALS model. 30th Puerto Rico Neuroscience Conference, Ponce, Puerto Rico, December 3, 2022.
17	Ortiz-Rivera J, Kucheryavykh, K. PYK2 signaling is upregulated in recurrent glioblastoma tumors in C57BL/6/GL261 glioma implantation model. 30th P.R Neuroscience, Universidad Catolica en Ponce P.R, Dic 2022.
18	Ortiz-Rivera J, Kucheryavykh, K. PYK2 signaling is upregulated in recurrent glioblastoma tumors in C57BL/6/GL261 glioma implantation model. Society for Neuro-Oncology, Tampa, FL. Nov 2022.
19	Ortiz-Rivera J, Kucheryavykh, K. PYK2 signaling is upregulated in recurrent glioblastoma tumors in C57BL/6/GL261 glioma implantation model. Forward Research Symposium. Fairmont Hotel San Juan, P.R. Nov 2022.
20	Vélez-Crespo, G; Hernández-O; Farril, E; Vlaar P, C; Dharmawhardane, S; Castillo, L; Kucheryavykh, Y; Kucheryavykh, L. HV-107 and HV-118 as potential therapeutics for metastatic breast cancer. Forward Research Symposium, November 3, 2022.
21	Vélez-Crespo, G; Hernández-O; Farril, E; Vlaar P, C; Dharmawhardane, S; Castillo, L; Kucheryavykh, Y; Kucheryavykh, L. HV-107 and HV-118 as potential therapeutics for metastatic breast cancer. NISBRE 2022, virtually, December 12-14,2022.

STUDENTS POSTER PRESENTATIONS  
@T EAC MEETING 2023



# CONT. NEW PRESENTATIONS

## JRAs students presentations by year



\* Year 2021-2022: Started a new grant cycle period

## NEW COLLABORATIONS

Fourteen (14 ) research collaborations were initiated by JRA students

Undergraduate Student	Collaborator	Purpose of the collaboration
Alejandro L. Hernández	1. Omaris Rosario Luquis, UG student at UPR-Cayey	Mrs. Omaris helped with diet modification, experimental design, and analysis.
	2. Dr. José Luis Agosto, Researcher at UPR-Rio Piedras	Dr. Agosto provided us with some needed materials and reviewed the results of the data obtained in the experiments since Dr. Agosto has a lot of knowledge about <i>Drosophila melanogaster</i> .
	3. Airined Montes, PhD student at UPR-Rio Piedras	Mrs. Airined helped to analyze statistically the data collected since summer and advised on the diets of <i>Drosophila melanogaster</i>
	4. Christian Del Valle PhD student at UPR-Rio Piedras	Helped analyze data and shared his knowledge about GraphPad and its usage.
Paola Nieves	5. Dr. Pablo E. Vivas-Mejía, Researcher at UPR-MSc	To accomplish specific aim 3 from the research proposal. <i>In vitro</i> cell proliferation analysis of liposomal formulations on breast cell lines. The loaded liposome will be separated from the unloaded SKD by size exclusion chromatography.
Carlos García	6. Loyda Meléndez, PhD, TPC Director, UPR-MSc	Access to equipment and services in the Translational Proteomics Center.
	7. Luis E. Vázquez Quiñones, Ph. D., BIRC Core Director	Various bioinformatics programs analyze protein sequences across different species.
Omaris Rosario	8. Alejandro L. Hernandez Padilla, UG student at UPR-Cayey	Alejandro L. helped modify and prepare the diet, experimental design, and analysis.
	9. Dr. Jose Luis Agosto Researcher at UPR-Rio Piedras	Dr. Agosto provided some materials needed for the experiment and reviewed the results of the data obtained in the experiments.
	10. Airined Montes, PhD student at UPR-Rio Piedras	Helped to analyze the data collected statistically and advised on developing experiments.
	11. Christian Del Valle, PhD student at UPR-Rio Piedras	Helped to analyze data and shared his knowledge about GraphPad and its usage.

## NEW COLLABORATION

Fourteen (14 ) research collaborations were initiated by JRA students

Graduate Student	Collaborator	Purpose of the collaboration
Daraishka Pérez	12. Dr. Michelle Martínez, Researcher at UCC	Learning essential tissue procedures for gene expression assays. Techniques included are Tissue collection from mice, RNA extraction, cDNA, and qPCR. All these methods will be applied in my project since this will improve my qPCR knowledge.
Axel Ufarry	13. Ceanorabditis Genetics Center	Request strains. We obtained mapping strains necessary for worm genetics and a strain to measure one of our goals: mitophagy.
	14. Dr. Ann Hart, Researcher at Brown University	Mentor, consultation, and donation of supplies.

# J R A S HONORS & AWARDS

4 JRA students were honored with travel awards, fellowships and scholarships.

## UNDERGRADUATE STUDENTS

**Daviana Menéndez**, UAGM.Carolina

- ▶ Partial Travel Award - ABRCMS Conference 2022
- ▶ Outstanding Presentation Award - ABRCMS 2022, Anaheim, CA. November 2022

## GRADUATE STUDENTS

**Elliot Rodríguez**, PHSU

- ▶ Dr. Ismail Ibrahim Ali Fellowship, 2022 Graduate Student Association Initiation Ceremony

**Daraishka Pérez**, UCC

- ▶ Travel Award Graduate Symposium - ABRCMS Conference 2022, Anaheim, CA. November 2022

**Grace Vélez**, UCC

- ▶ Scholarship Dr. Eric M. González Morales, December 2022



# J R A S   **COMPLETED**   D E G R E E

UG Student	Institution	STATUS
1. Leonardo Birriel	UPR-Rio Piedras (M)	Currently B.S student
2. Alejandro Padilla	UPR-Cayey (PUIs)	Currently B.S student. Expected Graduation May 2024
3. Fatima Hernández	UAGM-Cupey (PUIs)	Currently B.S student. Expected Graduation Jun 2026
4. Neymar Maldonado	Inter-Bayamón (OI)	<input checked="" type="checkbox"/> <b>Completed B.S.</b> in Biology at Inter-Bayamon. Planning to continue graduate studies, not applied to graduate schools yet
5. Daviana Méndez	UAGM-Carolina (PUIs)	<input checked="" type="checkbox"/> <b>Completed B.S.</b> in Microbiology at UAGM.Carolina. Accepted in Postbaccalaureate Scholars Program at National Institute of Diabetes & Digestive & Kidney Diseases. Planning to continue graduate studies.
6. Paola Nieves	Inter-Bayamón (OI)	<input checked="" type="checkbox"/> <b>Completed B.S.</b> in Biology at Inter-Bayamon. Accepted in Ponce Health Sciences University, Master of Sciences in Medical Sciences.
7. Gerianne Oliveri	UPR-Rio Piedras (M)	Currently B.S student. Expected Graduation Dec. 2024
8. Omaris Rosario	UPR-Cayey (PUIs)	Currently B.S student. Expected Graduation Dec. 2023
9. Keren Valentín	UAGM-Cupey (PUIs)	<input checked="" type="checkbox"/> <b>Completed B.S.</b> in Biology at UAGM.Cupey. Accepted in PhD program Microbiology at UPR-MSc

GRAD Student	Institution	STATUS
1. Carlos García	UPR-Mayagüez (PUIs)	<input checked="" type="checkbox"/> <b>Completed M.S.</b> in Chemistry at UPR-Mayagüez. Accepted in Ponce Health Science University, M.D. program
2. Elliot Rodríguez	PHSU (OI)	Expected Graduation May 2024
3. Dariashka Pérez	UCC (OI)	Expected Graduation June 2028
4. Axel Ufarry	Pontificia Universidad Católica (OI)	Expected Graduation Dec. 2023. Planning to continue to PhD program



GRAD Student	Institution	STATUS
5. Grace Vélez	UCC (OI)	<input checked="" type="checkbox"/> <b>Completed PhD</b> at UCC
6. Jescelica Ortiz	UCC (OI)	<input checked="" type="checkbox"/> <b>Completed PhD</b> at UCC. Accepted to PostDoc at UCC



# PROGRAM CORES

## ADMINISTRATIVE, CRI, STCE & BIRC

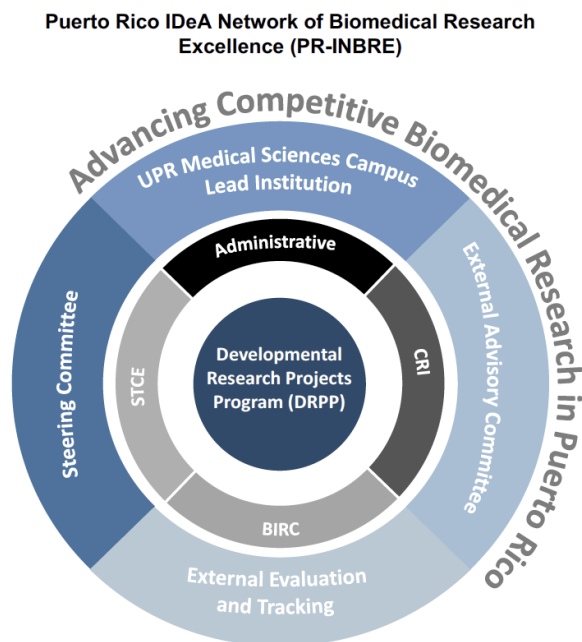
### Administrative Core

The main goal of the Administrative Core (AC) is to improve the existing management structure of the PR-INBRE, building upon it to provide logistical support for the network and the External Advisory Committee (EAC), and developing programs to meet the training and mentoring needs of the research faculty. The Administrative Core leadership manage and oversee the implementation of the proposed Program strategy at multiple levels, including planning, supervision, and evaluation in collaboration with the Program Coordinator(s), Core Directors, and Steering Committee, Evaluators, and the EAC.

### Centralized Research Instrumentation Core

The Centralized Research Instrumentation (CRI) Cores impact the development of the PR-INBRE network by supporting further integration with existing as well as newly created infrastructure at mentoring institutions and other affiliated institutions and programs. The specific aims of the CRI are: (1) support research applications in metabolomics, genomics, proteomics, and protein structure for the INBRE network and (2) promote usage of existing capabilities and specialized technologies to enable competitive studies by INBRE Investigators.

- ▶ **Human Genetics and Genomics:** Located at the UPR-MSU, the Human Genetics and Genomics Core supports projects that contribute to the understanding of genetic disorders affecting individuals of Puerto Rican ancestry, applying genomic technologies in the study of human diseases and/or use animal models of disease, or requiring applications in pharmacogenomics as well as gene regulation mechanisms. The Human Genetics and Genomics Lab provides services and expertise to INBRE investigators in Next Generation sequencing technologies (with the Ion Proton and Ion Torrent instruments), Affymetrix microarray applications, real-time qPCR for expression analysis and Taqman Genotyping assays (QuantStudio 6).
- ▶ **The Metabolomics Research Sub-Core:** Located at the UPR-MSU, the MRC is directed by Dr. Nataliya Chorna since its establishment as a part of the CRI in the fall of 2011.



## Cont. CRI Core

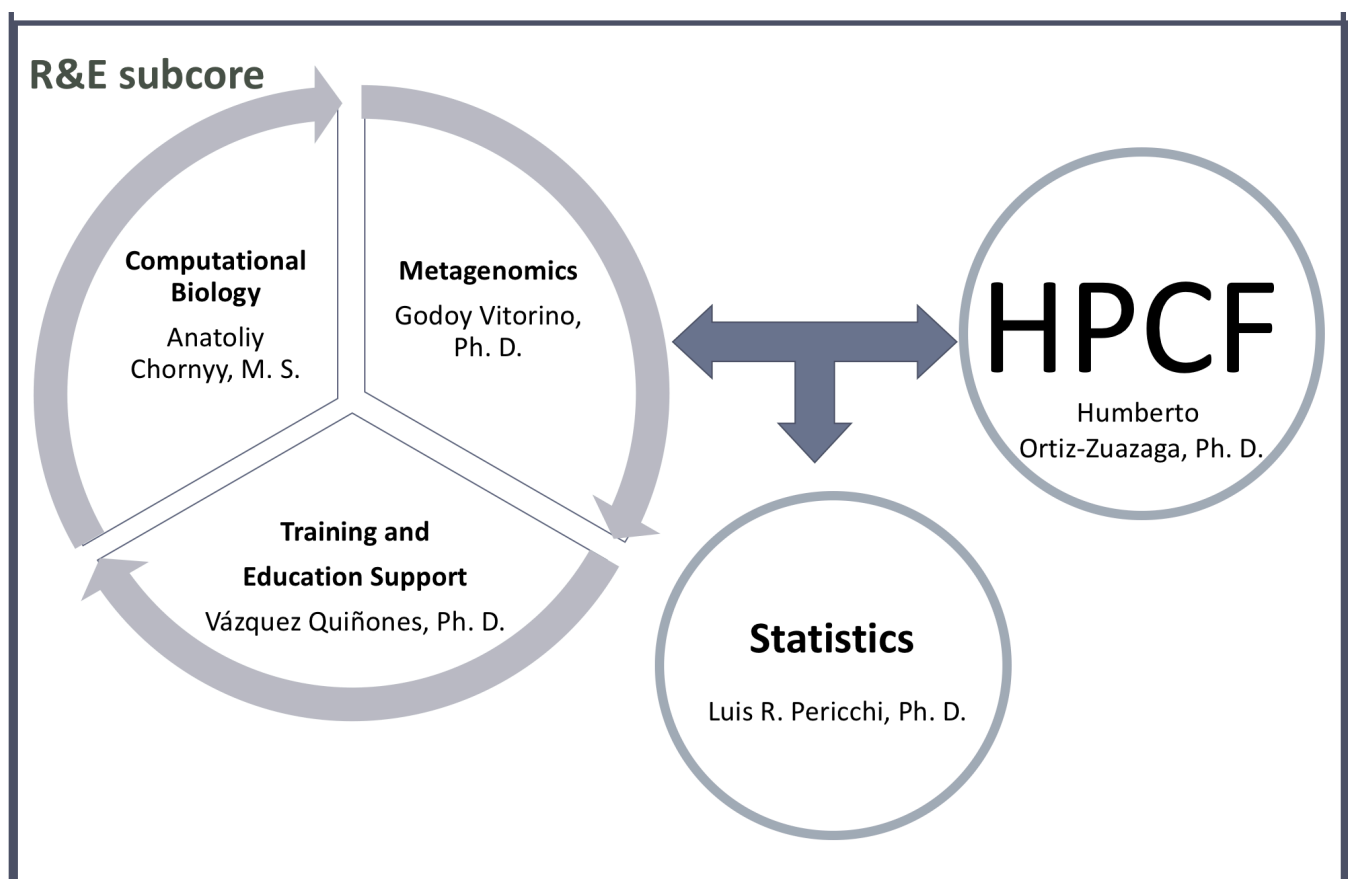
- ▶ **Metabolomics Research Sub-Core:** In 2015, the MRC was integrated with the Human Genetics and Genomics Core at the UPR Medical Sciences Campus, thus providing complementing expertise and state-of-art modern technologies that enables support of research projects employing genomic and metabolomics in the areas of emphasis in the PR-INBRE (i.e. Neuroscience, Molecular Medicine, Drug Development, Environmental and Behavioral Sciences).
- ▶ **Sequencing and Genomic Facility:** Located at the Molecular Science Research Center, the UPR Sequencing and Genomic Facility (SGF) is a Next-Generation Sequencing Facility that offers illumina's sequencing technology. With more than 12 years of continuous service, SGF are a leading facility in Sanger sequencing and NGS provider in PR with proven excellence in customer service and around 20 researchers among academics and others institutions, some of them outside the island.
- ▶ **ChEMTOx Biotesting Facility:** Located at UAGM Institution, the CheMTOx is directed by Dr. Beatriz Zayas, Professor of Toxicology from the School of Science and Technology. The laboratory provides services for the screening of biological activity of novel chemical compounds, natural substances, or nanoparticles with potential therapeutic applications. Also, interested in environmental health and the toxicity of environmental contaminants. The goal of the ChEMtox Biostesting Facility is to support scientists in their research of drug design and development as well as those interested in characterizing the mechanism of action of natural products or new materials. In addition to serving the scientific community, the facility is aligned with the academic and educational goals of the university, serving as a training site for undergraduate and graduate students or faculties in cell culture techniques, flowcytometry or mass spectrometry applications.
- ▶ **Translational Proteomics Center:** The main goal of the Center is to provide an integrated Proteomics platform for biomarker discovery and protein identification and to interface between basic and clinical research conducted in Puerto Rico for the diagnosis and therapeutic monitoring of human diseases. The TPC is directed by Dr. Loyda Meléndez who also serves as the Proteomics Service (PS) Lead of the UPR-MSC RCMI Research Infrastructure Core. This facility provides resources and expertise in Proteomics to scientists in the two other RCMI programs in Puerto Rico (Ponce Medical School Foundation/Ponce Research Institute (PMSF-PRI) and Universidad Central del Caribe), partner institutions in the PRINBRE Program, and other campuses of the UPR System.

## Science and Technology Competency and Education Core

The overall goal of the STCE is to increase the research and technical skills of the biomedical workforce in Puerto Rico and encourage a greater number of undergraduate and graduate students and postdoctoral associates to pursue careers in science and technology. The STCE will achieve this goal by providing hands-on research opportunities for graduate and undergraduate students at network institutions to increase the numbers of undergraduate students that are competitive to enter graduate programs and compete for jobs in industry.

## Bioinformatic Core

The overall goal of the Bioinformatics Resources Core (BiRC) is to train faculty, students and postdoctoral associates who can apply bioinformatics skills in their research projects, develop new collaborative partnerships between PUI and lead investigators with BiRC researchers, and improve science education by integrating computational experiences in traditional biology courses through new Statistics, and the Research and Education (R&E) Sub-cores.



## CORES PRODUCTIVITY SUMMARY

31

New **publications** (*peer review, abstracts, books*)

10

Grants **awarded**

130

**Oral** and **Poster** presentations

434

**Activities Participants** (*UG, Grad, Faculty*)

# CORES NEW PUBLICATIONS

Thirty one (31) articles published by INBRE Core

## Total Publications: 31

- ▶ 30 Peer Review Journals, 1 Book Chapter
- ▶ 25 with PMCID, 1 with PMID, 5 not in Pubmed

Publications distribution by Cores

CORES	Total Publications	Publications with PMCID#	Publications with PMID	Not in PubMed
DRPP	7	7	-	
DRPP + STCE	1	1	-	
STCE	3	2	-	1
CRI	8	7	-	1
BiRC	7	3	1 (Book Chapter)	3
BiRC + CRI	3	3	-	-
BiRC + STCE	2	2	-	-
Total	<b>31</b>	<b>25</b>	<b>1</b>	<b>5</b>

## ▶ Publications by research categories



5

Neuroscience & Behavior



13

Molecular Medicine and Cancer



3

Drug Discovery and Development



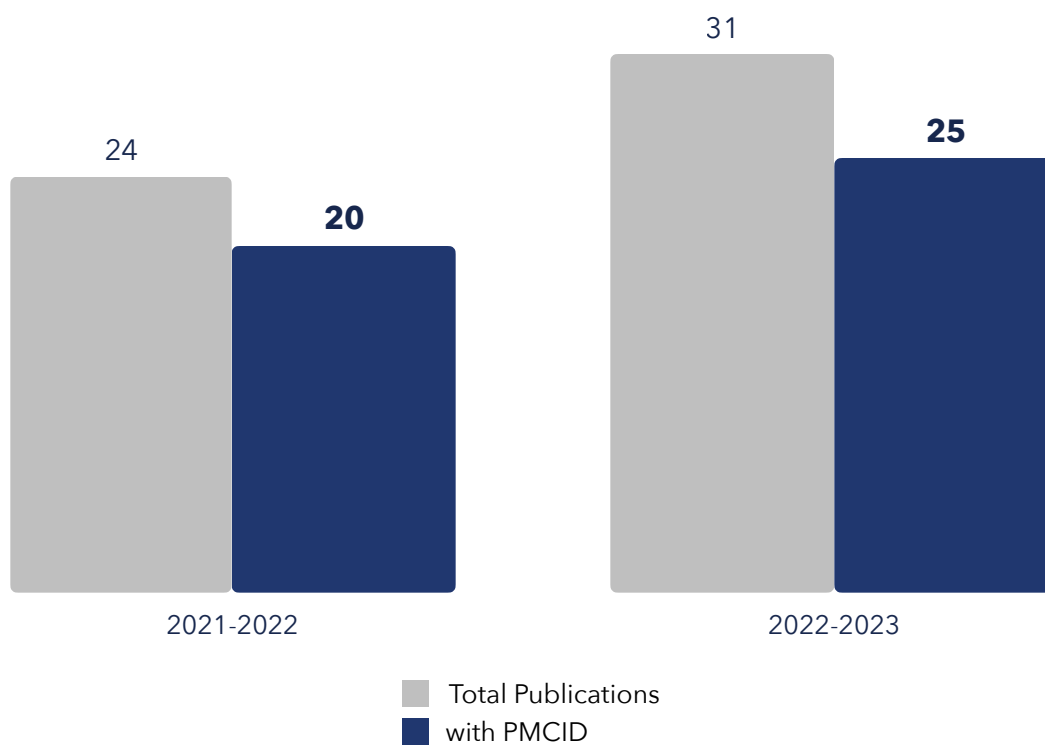
6

Bioinformatics

\* Data not shown: Other (4)

# CONT. CORES PUBLICATIONS

## Total Publications by years



\* Year 2021-2022: Started a new grant cycle period

## LIST OF PUBLICATIONS

### 7 BIRC

Vélez, D., Pérez, M.E. & Pericchi, L.R. Increasing the replicability for linear models via adaptive significance levels. *TEST* (2022). <https://doi.org/10.1007/s11749-022-00803-4>

Noriega-Rivera R, Rivera-Serrano M, Rabelo-Fernandez RJ, Pérez-Santiago J, Valiyeva F, Vivas-Mejía PE. Upregulation of the Long Noncoding RNA CASC10 Promotes Cisplatin Resistance in High-Grade Serous Ovarian Cancer. *Int J Mol Sci.* 2022 Jul 13;23(14):7737. doi: 10.3390/ijms23147737. PMID: 35887085; PMCID: PMC9318856.

Rodríguez, I. F., Chan, J., Álvarez Rios, M., Branson, K., Agosto-Rivera, J. L., Giray, T., & Mégret, R. (2022). Automated Video Monitoring of Unmarked and Marked Honey Bees at the Hive Entrance. *Frontiers in Computer Science*, 3, 142. <https://doi.org/10.3389/fcomp.2021.769338>

Chan J., Carrión H., Mégret R., Rivera J. and Giray T. (2022). Honeybee Re-identification in Video: New Datasets and Impact of Self-supervision. In *Proceedings of the 17th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications - Volume 4: VISAPP*, ISBN 978-989-758-555-5, pages 517-525. DOI: 10.5220/0010843100003124

Rodríguez-Barreras R, Dominicci-Maura A, Tosado-Rodríguez EL, Godoy-Vitorino F. The Epibiotic Microbiota of Wild Caribbean Sea Urchin Spines Is Species Specific. *Microorganisms.* 2023 Feb 3;11(2):391. doi: 10.3390/microorganisms11020391. PMID: 36838357; PMCID: PMC9966300.

Kardas E, González-Rosario AM, Giray T, Ackerman JD, Godoy-Vitorino F. Gut microbiota variation of a tropical oil-collecting bee species far exceeds that of the honeybee. *Front Microbiol.* 2023 May 17;14:1122489. doi: 10.3389/fmicb.2023.1122489. PMID: 37266018; PMCID: PMC10229882.

Dickerson F, Dilmore AH, Godoy-Vitorino F, Nguyen TT, Paulus M, Pinto-Tomas AA, Moya-Roman C, Zuniga-Chaves I, Severance EG, Jeste DV. The Microbiome and Mental Health Across the Lifespan. *Curr Top Behav Neurosci.* 2023;61:119-140. doi: 10.1007/7854\_2022\_384. PMID: 35947353.

### 2 BIRC + STCE

Ruiz Barrionuevo JM, Vilanova-Cuevas B, Alvarez A, Martín E, Malizia A, Galindo-Cardona A, de Cristóbal RE, Occhionero MA, Chalup A, Monmany-Garzia AC and Godoy-Vitorino F (2022) The Bacterial and Fungal Gut Microbiota of the Greater Wax Moth, *Galleria mellonella* L. Consuming Polyethylene and Polystyrene. *Front. Microbiol.* 13:918861. doi: 10.3389/fmicb.2022.918861. PMID: 35865934; PMCID: PMC9294514.

Ortiz AP, Acosta-Pagán KT, Oramas-Sepúlveda C, Castañeda-Avila MA, Vilanova-Cuevas B, Ramos-Cartagena JM, Vivaldi JA, Pérez-Santiago J, Pérez CM, Godoy-Vitorino F. Oral microbiota and periodontitis severity among Hispanic adults. *Front Cell Infect Microbiol.* 2022 Nov 14;12:965159. doi: 10.3389/fcimb.2022.965159. PMID: 36452304; PMCID: PMC9703052.

### 3 BIRC + CRI

García-Amado M.; Rudolf C.; Fuentes-Fuentes M.; Martínez M.; Chorna N.; Godoy-Vitorino F. Bacterial characterization of digestive tract of the Horned Screamer (*Anhima cornuta*), a tropical herbivorous "unicorn" bird. *PeerJ* 11:e14805.PMCID: PMC9933741

Sebastián Cruz-González ,Eduardo Quesada-Díaz,Yamil Miranda-Negrón, Raúl García-Rosario ,Humberto Ortiz-Zuazaga, and José E. García-Arrarás., Nov. 2, 2022, "The Stress Response of the Holothurian Central Nervous System: A Transcriptomic Analysis", *Int. J. Mol. Sci.* 2022, 23(21), PMCID: PMC9657328

Noah A. Auger ,Joshua G. Medina-Feliciano, ORCID,David J. Quispe-Parra ,Stephanie Colón-Marrero ,Humberto Ortiz-Zuazaga and José E. García-Arrarás., January 25, 2023,"Characterization and Expression of Holothurian Wnt Signaling Genes during Adult Intestinal Organogenesis", *Genes* 2023, 14(2), 309, PMCID: PMC9957329



## LIST OF PUBLICATIONS

### 8 C R I

Montes-Rodríguez IM, Cadilla CL, López-Garriga J, González-Méndez R (2022) Bioinformatic Characterization and Molecular Evolution of the *Lucina pectinata* Hemoglobins. *Genes (Basel)*. 2022 Nov 5;13(11):2041. PMID: 36360278. PMCID: PMC9690805

Borges-Vélez G, Arroyo JA, Cantres-Rosario YM, Rodríguez de Jesús A, Roche-Lima A, Rosario-Rodríguez L, Correa-Rivas MS, Campos-Rivera M, Rosado-Philippi J, and Meléndez LM. Decreased CSTB, RAGE and Axl receptor is associated with Zika infection in the human placenta. *Cells* 2022, 11, 3627. <https://doi.org/10.3390/cells11223627>. PMID: 36429055 PMCID: PMC9688057

Lloret-Torres ME, Ayala-Pagán RN, Martínez-Rivera FJ, Bonilla-Rullán P, Barreto-Estrada JL. Hippocampal and amygdala increased BDNF expression in the extinction of opioid-induced place preference. *IBRO Neurosci Rep*. 2022 Dec;13:402-409. DOI: 10.1016/j.ibneur.2022.10.007. Epub 2022 Oct 19. PMID: 36275846; PMCID: PMC9580243

Acevedo A, Rivera A, Ríos K, González, R., Díaz, A. & Zayas, B. Mechanism involved in cell death induced by DEHP (Di-ethylhexyl phthalate) on primary brain cells from Zebrafish (*Danio rerio*). *Pharm Pharmacol Int J*. 2022;10(6):218-223. DOI: 10.15406/ppij.2022.10.00390

Ningning Wu, Elizabeth Evans, Bas van Schooten, Jesyka Meléndez-Rosa, Yadira Ortiz, Silvia M. Planas Soto-Navarro, Steven M. Van Belleghem, Brian A. Counterman, Riccardo Papa, and Wei Zhang, October 17, 2022, "Widespread Gene Expression Divergence in Butterfly Sensory Tissues Plays a Fundamental Role During Reproductive

Isolation and Speciation. *Mol. Biol. Evol.* 39(11), PMCID: PMC9641979

Angelo A. Ruggieri, Luca Livraghi, James J. Lewis, Elizabeth Evans, Francesco Cicconardi, Laura Hebberecht, Yadira Ortiz-Ruiz, Stephen H. Montgomery, Alfredo Ghezzi, José Arcadio Rodríguez-Martínez, Chris D. Jiggins, W. Owen McMillan, Brian A. Counterman, Riccardo Papa, and Steven M. Van Belleghem, September 13, 2022, "A butterfly pan-genome reveals that a large amount of structural variation underlies the evolution of chromatin accessibility", *Genome Res*. 2022. 32: 1862-1875, PMCID: PMC9712634

Jang S, Chorna N, Rodríguez-Graciani KM, Inyushin M, Fossati S, Javadov S. The Effects of Amyloid- $\beta$  on Metabolomic Profiles of Cardiomyocytes and Coronary Endothelial Cells. *J Alzheimers Dis*. 2023 Mar 23;. doi: 10.3233/JAD-221199. [Epub ahead of print] PubMed PMID: 36970904.

Santiago GA, Volkman HR, Flores B, González GL, Charriez KN, Huertas LC, Van Belleghem SM, Rivera-Amill V, Major C, Colon C, Tosado R, Adams LE, Marzán M, Hernández L, Cardona I, O'Neill E, Paz-Bailey G, Papa R, Muñoz-Jordan JL. SARS-CoV-2 Omicron Replacement of Delta as Predominant Variant, Puerto Rico. *Emerg Infect Dis*. 2023 Apr;29(4):855-857. doi: 10.3201/eid2904.221700. Epub 2023 Mar 6. PMID: 36878014; PMCID: PMC10045710.

### 1 D R P P + S T C E

Ortiz-Soto G, Babilonia-Díaz NS, Lacourt-Ventura MY, Rivera-Rodríguez DM, Quiñones-Rodríguez JI, Colón-Vargas M, Almodóvar-Rivera I, Ferrer-Torres LE, Suárez-Arroyo IJ, Martínez-Montemayor MM. Metadherin Regulates Inflammatory Breast Cancer Invasion and Metastasis. *Int J Mol Sci*. 2023 Feb 28;24(5):4694. doi: 10.3390/ijms24054694. PMID: 36902125; PMCID: PMC10002532.

## LIST OF PUBLICATIONS

### 7 DRPP

Sanabria-Rios DJ, Alequin-Torres D, De Jesús A, Cortes G, Carballeira NM. Vinyl halogenated fatty acids display antibacterial activity against clinical isolates of methicillin-resistant *Staphylococcus aureus*. *Med Res Arch*. 2022 Jul;10(7):10.18103/mra.v10i7.2901. doi: 10.18103/mra.v10i7.2901. Epub 2022 Jul 31. PMID: 36118101; PMCID: PMC9481190.

Espinosa A, Diaz J, Vázquez E, Acosta L, Santiago A, Cunci L. Fabrication of paper-based microfluidic devices using a 3D printer and a commercially-available wax filament. *Talanta Open*. 2022 Dec;6:100142. doi: 10.1016/j.talo.2022.100142. Epub 2022 Aug 28. PMID: 36093430; PMCID: PMC9454060.

Acevedo-Díaz A, Morales-Cabán BM, Zayas-Santiago A, Martínez-Montemayor MM, Suárez-Arroyo IJ. SCAMP3 Regulates EGFR and Promotes Proliferation and Migration of Triple-Negative Breast Cancer Cells through the Modulation of AKT, ERK, and STAT3 Signaling Pathways. *Cancers (Basel)*. 2022 Jun 5;14(11):2807. doi: 10.3390/cancers14112807. PMID: 35681787; PMCID: PMC9179572.

Ferrer-Acosta Y, Rodríguez-Massó S, Pérez D, Eterovic VA, Ferchmin PA, Martins AH. Memantine has a nicotinic neuroprotective pathway in acute hippocampal slices after an NMDA insult. *Toxicol In Vitro*. 2022 Oct;84:105453. doi: 10.1016/j.tiv.2022.105453. Epub 2022 Aug 6. PMID: 35944748. PMCID: PMC10026604

Torres-Rodríguez O, Rivera-Escobales Y, Castillo-Ocampo Y, Velázquez B, Colón M, Porter JT. Purinergic P2X7 receptor-mediated inflammation precedes PTSD-related behaviors in rats. *Brain Behav Immun*. 2023 Feb 21;110:107-118. doi: 10.1016/j.bbi.2023.02.015. [Epub ahead of print] PubMed PMID: 36822379; NIHMSID:NIHMS1880895.PMCID: PMC10106407

Barreto-Díaz MA, Velázquez-Aponte RA, Wu-Wu A, Cassé C. Hormetic effect of an Ethanolic Graviola Leaf Extract on HGF-1 cells survival. *BAOJ Cancer Res The*. 2022; 6(1): 1005.PMCID: PMC10403259

Alvarez-Rivera E, Rodríguez-Valentín M, Boukli NM. The Antiviral Compound PSP Inhibits HIV-1 Entry via PKR-Dependent Activation in Monocytic Cells. *Viruses*. 2023 Mar 22;15(3). doi: 10.3390/v15030804. PubMed PMID: 36992512; PubMed Central PMCID: PMC10051440.

### 3 STCE

Vargas, S.J., Quintana, A. López-Garriga, J. Hemoglobin I from *Lucina pectinata* on Collagen Scaffold: A Prospective Hydrogen Sulfide Scavenger. *Journal of Chemistry*. Volume 2022, Article ID 5101712, 9 pages <https://doi.org/10.1155/2022/5101712>

Ortiz-Rivera J, Nuñez R, Kucheryavykh Y, Kucheryavykh L. The PYK2 inhibitor PF-562271 enhances the effect of temozolomide on tumor growth in a C57Bl/6-G1261 mouse glioma model. *J Neurooncol*. 2023 Feb 15. doi: 10.1007/s11060-023-04260-3. Epub ahead of print. PMID: 36790653. PMCID: PMC9992029

Crespo GV, Ortiz J, O'Farrill EH, Vlaar CP, Inyushin M, Kucheryavykh Y, Kucheryavykh L. The Rac inhibitor HV-107 as a potential therapeutic for metastatic breast cancer. *Mol Med*. 2023 Jun 14;29(1):75. doi: 10.1186/s10020-023-00678-7. PMID: 37316799; PMCID: PMC10268403.

# NEW GRANTS

# 24

GRANTS  
SUBMITTED  
BY CORE

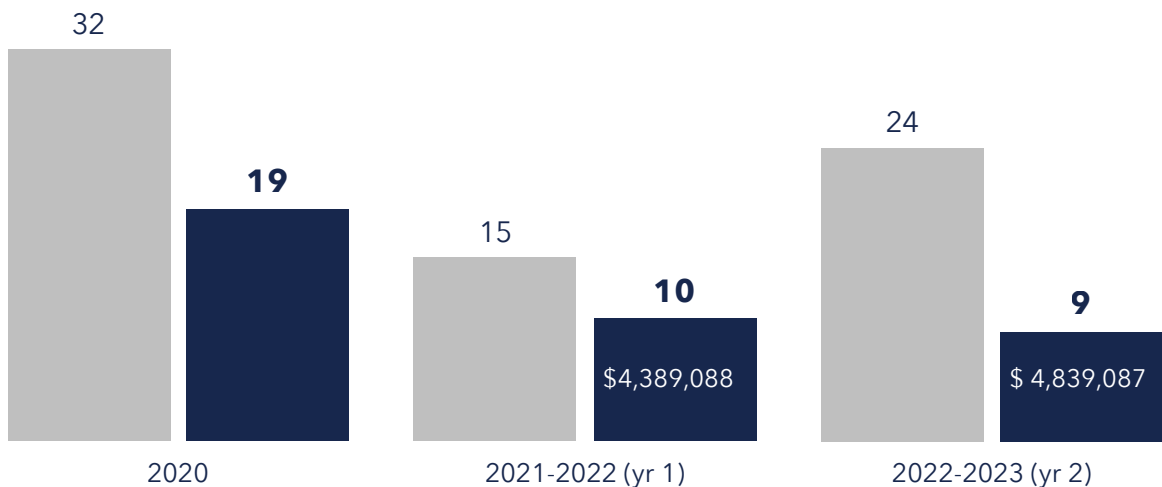
Submitted	Total
CRI	6
DRPP-active investigators	16
BIRC	2
<b>TOTAL</b>	<b>24</b>

# 9

GRANTS  
AWARDED  
BY CORE

Awarded	Total	Budget
CRI	2	\$130,192
DRPP-active investigators	5	\$4,285,476
BIRC	2	\$423,419
<b>TOTAL</b>	<b>9</b>	<b>\$4,839,087</b>

## Grants submitted and awarded by years



Year 2021-2022: Started a new grant cycle period

Submitted  
Awarded

# LIST OF GRANTS SUBMITTED/AWARDED

<b>DRPP Investigator</b>	<b>Role</b>	<b>Agency</b>	<b>Type</b>	<b>Proposal Title</b>	<b>Estimated Budget/STATUS</b>
Iris Salgado UCC	PI	NIH-NIAID	R16	1. Initial Pre-Clinical Studies of Novel Influenza A- antivirals	\$640,916 Not granted.
Marcos López UPR-Humacao	PI	OTHER Federal Agency	OT2	2. Community-led Structural Interventions Against Diabetes	\$12,000,000 Not granted.
Carlos Díaz PHSU	PI	NIH-National Cancer Institute (NCI)	R01	3. Cardiometabolic risk and prostate cancer aggressiveness among disparately affected populations	\$1,601,850 for 5 years Pending
Carlos Díaz PHSU	PI	NIH-National Cancer Institute (NCI)	R21	4. A role of DNA methylation in MYC pathway activation in Puerto Rican men with aggressive prostate cancer	\$275,000 for 2 yrs Pending
Elsie Pares UPR-Mayagüez	Co-I	NIH	R01	5. Deciphering the oxidative stress signaling mechanism in fungi.	\$1,662,370 for 4 yrs. Not granted.
Marian Sepúlveda PHSU	PI	NIH-National Institute on Minority Health and Health Disparities (NIMHD)	U54 Specialized Center-Cooperative Agreements	6. Sex differences in a rodent model of co-occurrence of chronic stress and cocaine use disorder	\$350,000/yr Pending
Lisandro Cunci UAGM.Gurabo	PI	NIH-National Institute on Minority Health and Health Disparities (NIMHD)	R21	7. Development of a Wearable Sensor to Understand the Impact of Neuropeptide Levels on Health Disparities	\$353,804 Cancelled
<b>Lisandro Cunci UAGM.Gurabo</b>	<b>PI</b>	<b>US Department of Energy</b>	<b>BES-RENEW</b>	<b>8. Partnership to Increase Representation in Energy Research in Puerto Rico</b>	<b>\$2,250,000 Awarded</b>
<b>David Rivera UCC</b>	<b>Coordinator</b>	<b>NIH-National Institute of Neurological Disorders and Stroke (NINDS)</b>	<b>Contract 75N95022P0 0775</b>	<b>9. Improving the Undergraduate Research Opportunities in Puerto Rico</b>	<b>\$237,000 Awarded</b>

CONT. LIST OF GRANTS SUBMITTED/AWARDED

DRPP Investigator	Role	Agency	Type	Proposal Title	Estimated Budget
David Sanabria Inter-Metro	PI	NIH-National Institute of General Medical Sciences (NIGMS)	R15	10. Investigating the mechanism of action of antibacterial synthetic unsaturated fatty acids in methicillin-resistant Staphylococcus aureus	\$409,863 Pending
<b>David Sanabria Inter-Metro</b>	<b>PI</b>	<b>Interamerican University of Puerto Rico</b>	<b>Institutional Seed Money</b>	<b>11. IAUPR-MC Research Project for Testing, Tracing, and Sequencing of SARS-CoV-2 Virus</b>	<b>\$24,000 Awarded</b>
<b>Claudia Ospina Inter-Bayamón</b>	<b>Co-I</b>	<b>US Department of Education</b>	<b>Chapter V Grant to UPR-MSU</b>	<b>12. Genomic and Proteomic alterations following treatment of Breast Cancer Cells with Similikalactone-D</b>	<b>\$18,000 Awarded</b>
Yancy Ferrer UCC	Co-I	NIH	-	13. Instrumentation grant to obtain a BDFACSymphony A1 Flow Cytometer with cell-sorting capability in RCM	\$138,982 Pending
Claudia Ospina Inter-Bayamón	PI	Puerto Rico Science Trust	Other	14. Malaria Therapeutics Agents and Formulations from Puerto Rican Plants	\$75,000 Pending
Patricia Ortiz UPR-Mayagüez	Senior Personnel	National Science Foundation	ERC	15. Engineering Research Center for Lignin Engineering,	26,000,000 Pending
Elsie Parés UPR-Mayaguez	Collaborator	National Institute of Health	S10	16. Cytation 5 Multimode Imaging System for UPR at Mayaguez Biomolecular Chemistry Facilitie	Not provided
<b>Abigail Ruiz Edu Suárez UPR-Ponce</b>	<b>Co-Principal Investigator</b>	<b>NIH-National Institute of General Medical Sciences (NIGMS)</b>	<b>T34</b>	<b>17. U-RISE AT UNIVERSITY OF PUERTO RICO AT PONCE</b>	<b>\$1,756,476** Awarded</b>

\*\* This proposal was submitted in the previous reporting period.

CONT. LIST OF GRANTS SUBMITTED/AWARDED

CORE	Director	Role	Agency	Type	Proposal Title	Estimated Budget
CRI	Loyda Meléndez	Principal Investigator	NIH- National Institute of Mental Health (NIMH)	R01	1. Targeting host factors and signaling pathways to prevent long-Neuro-COVID-19	\$1,859,155.0
CRI	<b>Loyda Meléndez</b>	<b>Principal Investigator</b>	<b>NIH- National Institute of General Medical Sciences (NIGMS)</b>	<b>Pilot</b>	<b>2. Targeting host factors and signaling pathways to prevent long-Neuro-COVID-19</b>	<b>\$55,192 Awarded</b>
CRI	Ricardo Papa	Principal Investigator	Principal Investigator		Elucidating the impact of triple negative breast cancer heterogeneity on therapy response in Puerto Rican women	\$154,215.0
CRI	Ricardo Papa	Collaborator	Collaborator	R16	Island Conservation in Future Climate Scenarios: Genomic Biomarkers for Sensitive Biota.	Data not available
CRI	Ricardo Papa	Collaborator	Collaborator	F31	Molecular analysis of radial glial-like cells and their roles in nervous system regeneration.	Data not available
CRI	<b>Beatriz Zayas</b>	<b>PI</b>	<b>PI</b>		<b>Markers of hypoxic circulating tumor cells (h-ctc)</b>	<b>\$75,000 Awarded</b>
BIRC	<b>Filipa Godoy</b>	<b>Co-Principal Investigator</b>	<b>Co-Principal Investigator</b>		<b>RAPID: The black urchin (Diadema antillarum) massive resurgent die-off: Causes, demographic and community consequences</b>	<b>\$199,919 Awarded</b>
BIRC	<b>Filipa Godoy</b>	<b>MPI</b>	<b>MPI</b>		<b>Effects of environmental contaminants on anxiety-like and fear behaviors, and gut-microbiota in rodents</b>	<b>\$223,500 Awarded</b>

# NEW PRESENTATIONS



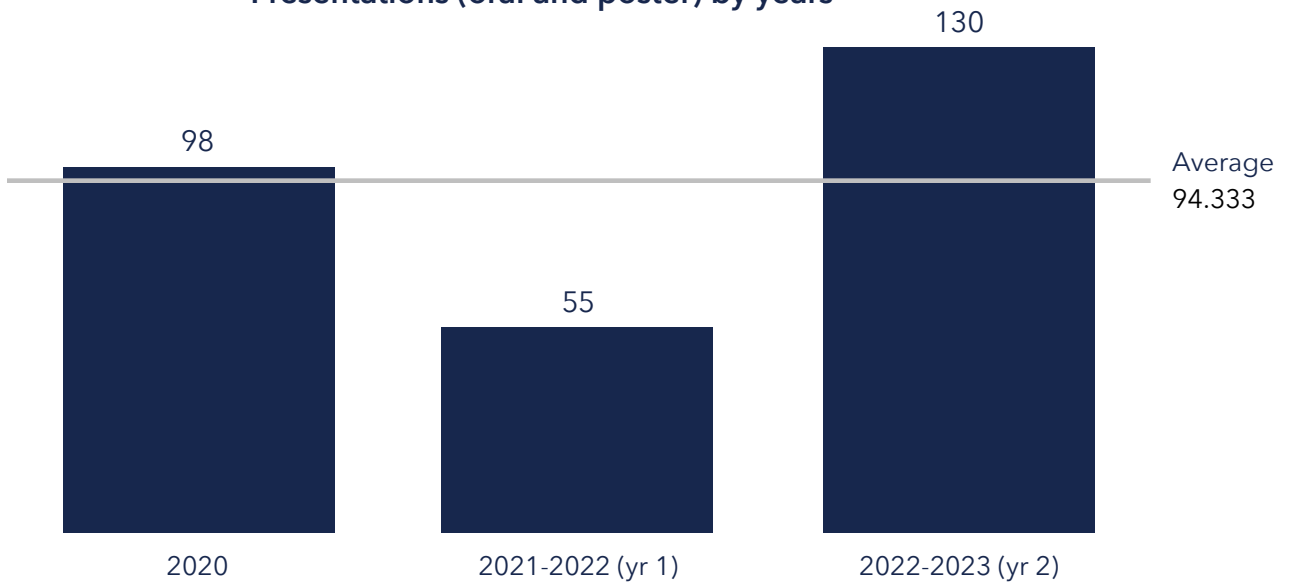
# 130

Presentations

**79** Poster Presentations

**51** Oral Presentations

## Presentations (oral and poster) by years



Year 2021-2022: Started a new grant cycle period

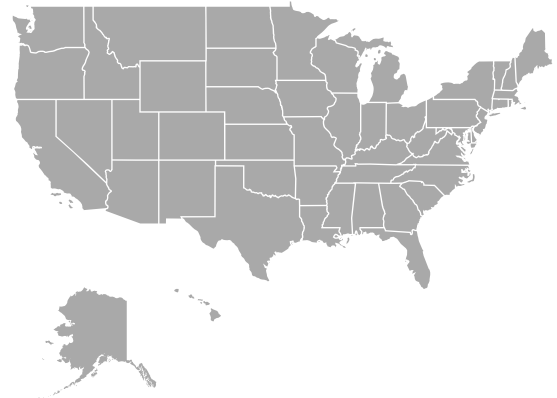
# 65%

Presentations in Puerto Rico



# 20%

Presentations in USA



Oral + Poster Presentations by Location

# ORAL PRESENTATIONS

Fifty one (51) presentations were performed by the INBRE Cores

## 51 Poster Presentations

- ▶ 36 DRPP Investigators
- ▶ 7 STCE Core (students)
- ▶ 8 CRI Core

## PRESENTATIONS BY LOCATION



Data not shown: 2.0% Missing



## CONT. ORAL PRESENTATIONS

- 1 Rosario-Rodríguez, L, Meléndez LM, Cantres Rosario Y, Rodríguez de Jesus A, Carrasquillo K, Méndez L, Roche-Lima A, Cantres-Rosario Y, Rosario-Rodríguez L, Rivera-Nieves V, Beltran J. Host Factors associated with COVID-19 Severity and Neurological Mechanisms in a Hispanic Population. Society for Neuroscience, San Diego US. November 11, 2022
- 2 Rosario-Rodríguez, L, Meléndez LM, Cantres Rosario Y, Rodríguez de Jesús A, Carrasquillo K, Méndez LM, Roche-Lima A, Cantres-Rosario Y, Rivera-Nieves V, Beltrán J. Host Factors associated with COVID-19 Severity and Neurological Mechanisms in a Hispanic Population. 30th Conference PR Neuro Sciences , Ponce, PR. December 2, 2022.
- 3 B.Zayas. PR Science Trust Forward Research Symposium: November 3, 2022 . Member of the EnTRUST Panel. Hotel San Juan, Isla Verde, PR.
- 4 STEVEN VAN BELLEGHEM, Angelo A. Ruggieri, Carolina Concha, Luca Livraghi, Laura Hebberecht López, Edgardo Santiago Rivera ,James G. Ogilvie,Joseph J. Hanly, Ian A. Warren, Silvia Planas, Yadira Ortiz-Ruiz, Robert Reed,James J. Lewis, Chris D.Jiggins, Brian A. Counterman, W. Owen McMillan, Riccardo Papa. High Level of novelty under the hood of convergent evolution. The 29th Benelux Congress of Zoology, 22-23 September 2022, Belgium.
- 5 Riccardo Papa. Do not believe in what you see.Online Lepinar seminar series. International Heliconius community. 23, January 2023 [ONLINE]
- 6 Riccardo Papa. Do not believe in what you see. Biology Departamental seminar UPR-Rio Piedras. November 1 2022.
- 7 Angelo Ruggieri. The importance of non homologous sequences for Heliconius butterflies evolution. BIOLUNCH Seminar Series. 17 Novembre 2022.
- 8 Rodríguez-Martínez JA "Evolution and binding specificity SIX homeodomain transcription factors" ASBMB Evolution and Core Processes in Gene Expression Symposium Contributed Presentation, July 21, 2022. Kansas City, MO
- 9 Birriel-Rodríguez, L.Synthesis of Ferrocenyl-Urea-Chalcone: Exploring their antitumorigenic activity. Gulf Coast Undergraduate Research Symposium, Chemistry Division, Rice University, Houston, TX, October 8, 2022.
- 10 Hernández-Padilla, A. L.; Rosario-Luquis, O; Rodriguez-Borrero, E. High-protein diet method for alcohol-induced in the brain-gut axis of Drosophila melanogaster, STCE Summer Internship, Recinto de Ciencias Medicas, San Juan, PR, August 12, 2022
- 11 Rosario-Luquis, O; Hernández-Padilla, A. L.; Rodríguez-Borrero, E. Effects of a high-fat diet on the brain-gut axis and alcohol tolerance in Drosophila Melanogaster, STCE Summer Internship, Recinto de Ciencias Medicas, San Juan, PR, August 12, 2022
- 12 Valentín-López, K.; González, S.; Babu M.; Jessulat, M.; Rodríguez-Medina, J. Screening for recombinant strains of yeast for iMYTH cassette. STCE-PRINBRE First Summer Internship Program Poster Presentation, Conrado F. Asenjo Library, University of Puerto Rico Medical Sciences Campus, Río Piedras, Puerto Rico, August12, 2022.
- 13 Valentín-López, K.; González, S.; Babu M.; Jessulat, M.; Rodríguez-Medina, J. Assay for Yet3, a protein of unknown function, as a possible interacting partner of mitochondrial protein, Gut2, STCE JRA Meeting, December 16, 2022.
- 14 Ortiz-Rivera, J. Dynamics of microglial activation and expression of cytokines after tumor resection. Research Seminar, UCC-School of Medicine, December 5, 2022P.R, 2022
- 15 Vélez-Crespo, G; Hernández-O;Farril,E; Vlaar P, C; Dharmawhardane, S; Castillo,L; Kucheryavykh,Y; Kucheryavykh,L. HV-107 and HV-118 as potential therapeutics for metastatic breast cancer.UCC Graduate studies research seminar, December 5,2022.
- 16 Salgado, I. Initial Pre-clinical studies of novel Influenza-A antivirals - R16 submission - PR- INBRE- DRPP Meeting , January 13, 2023
- 17 Ospina, C. A. "Natural Products Research in Puerto Rico: Isolation of Bioactive Metabolites from Tropical Plants" Oral Presentation, presented at American Council of Medicinally Active Plants. 11th Annual Hybrid Conference, Inter-American University of Puerto Rico. July 01, 2022

## CONT. ORAL PRESENTATIONS

- 17 Álvarez E, Lugo E, Lozada L and Boukli N.M. (2022). Modification of Endoplasmic Reticulum Stress in HIV-1 Gp120 Glioma Cells. August 5, 2022. The Cancer Prevention and Control Conference (CAPAC). San Juan, PR, USA.
- 18 Ortiz E, Álvarez E, Lugo E, and Boukli N.M. (2022). HIV-1 Gp120 Induces a Survival Response In Glioblastoma Via The Unfolded Protein Response. November 3, 2022. Forward Research Symposium. San Juan, PR, USA.
- 19 Álvarez E, Lugo E, Ortiz E, Franceschini A and Boukli N.M. (2022) PSP limits HIV-1 Entry through UPR-induced PKR activation signaling. November 3, 2022. Forward Research Symposium. San Juan, PR, USA.
- 20 López, M. Targeting triple-negative breast cancer mitochondrial metabolism and bioenergetics. Pontifica Universidad Javeriana, Bogota, Colombia. November, 08, 2022. Online presentation.
- 21 Parés-Matos, E.I.; Carrasquillo-Carrión, K.; Roche-Lima, A.; Rodríguez-Medina J.R. Molecular docking studies between Ras2p, the cytoplasmic domain of three members of the Wsc-family and several therapeutic drugs. SERMACS 2022, Biochemistry I: Structure / Dynamics Session , Puerto Rico Convention Center, San Juan, PR, October 19, 2022.
- 22 Vargas-Virella, A; García-Cortes, K; Martínez-Figueroa, Z; Cruz, E; October 22, 2022 , Astrocytic and Neuronal Lactate Metabolism in the Brain of Angelman Syndrome Mice. Puerto Rico Physiological Society conference
- 23 Antonio Vázquez, Joannes Díaz, Edgar Vázquez, Lina Acosta, and Lisandro Cunci, Inkjet Electrodes for Developing Wearable Sensors for the Detection of Peptides and Neurotransmitters in Sweat Using Flexible Materials, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 24 A. Ruiz. In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis. PR-LSAMP scientific talks: In vitro and in vivo endometriosis studies, UPR Ponce February 16th , 2023
- 25 A. Ruiz. In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis. UPR Ponce Faculty Research Congress Meeting, UPR Ponce, April 28th, 2023
- 26 A. Ruiz. In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis. PRISM/JTM Saturday. UPR Bayamón, April 29th, 2023
- 27 Rivera-Aponte, D.E. Hyperglycemia Reduces Kir4.1 Potassium Channel Expression and Function : Relevance to Stroke. Seminar Serie, November 9 2022, University of Puerto Rico, Aguadilla,
- 28 Rivera-Aponte, D.E. Rapid Response for COVID-19 Pandemic: A vaccination Clinic Layout. Alliance Scientifi Day 2023, San Juan, P.R. May 3, 2023
- 29 Crosstalk between *C. neformans/gattii* and macrophages in the development of titan cells. Externa Advisors Comitee Meeting and Annual Retreat. March 17, 2023
- 30 Álvarez E, Lugo E, Lozada L and Boukli N.M. (2022). Modification of Endoplasmic Reticulum Stress in HIV-1 Gp120 Glioma Cells. August 5, 2022. The Cancer Prevention and Control Conference (CAPAC). San Juan, PR, USA.
- 31 Ortiz E, Álvarez E, Lugo E, and Boukli N.M. (2022). HIV-1 Gp120 Induces a Survival Response In Glioblastoma Via The Unfolded Protein Response. November 3, 2022. Forward Research Symposium. San Juan, PR, USA.
- 32 Álvarez E, Lugo E, Ortiz E, Franceschini A and Boukli N.M. (2022) PSP limits HIV-1 Entry through UPR-induced PKR activation signaling. November 3, 2022. Forward Research Symposium. San Juan, PR, USA.
- 33 López, M. Targeting triple-negative breast cancer mitochondrial metabolism and bioenergetics. Pontifica Universidad Javeriana, Bogota, Colombia. November, 08, 2022. Online presentation.
- 34 Crosstalk between *C. neformans/gattii* and macrophages in the development of titan cells. Sociedad de Microbiólogos de Puerto Rico Annual Meeting. June 8, 2023
- 35 DeLeón-Rodríguez, N. Genomics, ecology and health. International Symposium Bioinformatics applied to human health. Universidad Tecnologica del Choco Diego Luis Cordoba. March 16, 2023
- 36 Ramón Robles, Giancarlo; Cartagena , Alondra; Leon Natalia; Alvarado Carolina; Díaz, Lioniellys; Pagan, José; Maldonado, Adamaris; Suárez, Edu; Ruiz, Abigail EFFECTS OF CXCR4 INHIBITORS IN BIOLOGICAL PATHWAYS USING ENDOMETRIAL AND ENDOMETRIOTIC CELL LINES, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 37 Blondet-Vázquez, Laura; Correa-Torres, Patricia; Santiago-Amundaray, Luis; Pagán-Rivera, José; García, Verónica; Flores, Idhaliz; Suárez, Edu; Piñeiro, Fernando; Appleyard, Caroline B; Ruiz, Abigail IN VIVO EFFECTS OF AMD3100 IN A RAT MODEL OF ENDOMETRIOSIS, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023

## CONT. ORAL PRESENTATIONS

- 37 Maldonado Irizarry, Adamaris ., Vélez Colón, María del Carmen1., Suárez Martínez, Edu1., Ruiz Rivera, Abigail EFFECTS OF CXCR4 INHIBITORS IN CELL PROLIFERATION, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 38 Santiago Amundaray, Luis & Pagan, Jose, Blondet, Laura; Correa, Patricia; Maldonado, Adamaris; Garcia, Verónica; Piñeiro, Fernando; Flores, Idhaliz; Suárez, Edu; Appleyard, Caroline; Ruiz, Abigail. IN VITRO EFFECTS OF THE CXCR4 INHIBITOR, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 39 López-Rivera, Rafael; Piñero-González, Fernando; Ruiz Abigail LANGUAGE PROCESSING TOOLS FOR ENDOMETRIOSIS META-ANALYSIS, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 40 Ruiz-Rivera, Abigail, Blondet-Vázquez, Laura; Correa-Torres, Patricia; Santiago-Amundaray, Luis; Pagán-Rivera, José; García, Verónica; Flores, Idhaliz; Suárez, Edu; Piñeiro, Fernando; Appleyard, Caroline B In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis, External Advisory Committee Meeting & Annual Retreat, Rio Grande, PR March 18, 2023
- 41 Ruiz-Rivera, Abigail, Blondet-Vázquez, Laura; Correa-Torres, Patricia; Santiago-Amundaray, Luis; Pagán-Rivera, José; García, Verónica; Flores, Idhaliz; Suárez, Edu; Piñeiro, Fernando; Appleyard, Caroline In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis; XXIV Congreso de Investigación y Creación Académicas, UPR Ponce, April 28, 2023, Ponce, PR
- 42 Ruiz-Rivera, Abigail; In vitro and in vivo endometriosis studies, PRLSAMP talks in UPR-Ponce April 27, Ponce PR
- 43 Garcia, Veronica; Lebrón, Neidy ., León, Sherley., Soto, Adamaris., Velázquez, Jelizalee., Vera, Nicole., Maldonado, Adamaris., Pagan, José., Correa, Patricia., Ramón, Giancarlos., Suárez, Edu., Ruiz, Abigail BASAL EXPRESSION OF RECEPTORS IN EPITHELIAL AND STROMAL CELLS, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 44 León, Sherley., Soto, Adamaris., Velazquez, Jelizalee., Vera, Nicole., García, Verónica., Lebrón, Neidy., Maldonado, Adamaris ., Pagán, Jose., Ramón Giancarlos., Correa, Patricia ., Suarez Edu B., Ruiz, Abigail ADHESION OF ENDOMETRIAL STROMAL AND EPITHELIAL CELL LINES, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 45 Velázquez, Jelizalee ., Vera, Nicole., García, Verónica., Lebrón, Neidy., León, Sherley., Soto, Adamaris., Maldonado, Adamaris., Correa, Patricia., Pagán, José., Suarez, Edu., Ruiz, Abigail Department of Biology, University of Puerto Rico in PonceIN-VITRO STUDY OF BASAL EXPRESSION OF ADHESION MOLECULES IN EPITHELIAL AND ENDOMETRIAL STROMAL CELLS, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 46 López-Rivera, Rafael; Piñero-González, Fernando; Ruiz Abigail LANGUAGE PROCESSING TOOLS FOR ENDOMETRIOSIS META-ANALYSIS, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 47 Pagán, Jose; Santiago Amundaray, Luis, Blondet, Laura; Correa, Patricia; Maldonado, Adamaris; Garcia, Verónica; Piñeiro, Fernando; Flores, Idhaliz; Suárez, Edu; Appleyard, Caroline; Ruiz, Abigail. 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 48 Maldonado Irizarry, Adamaris ., Vélez Colón, María del Carmen1., Suárez Martínez, Edu1., Ruiz Rivera, Abigail EFFECTS OF CXCR4 INHIBITORS IN CELL PROLIFERATION 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 49 Ramon Robles, Giancarlos; Cartagena , Alondra; Leon Natalia; Alvarado Carolina; Díaz, Lioniellys; Pagan, José; Maldonado, Adamaris; Suárez, Edu; Ruiz, Abigail EFFECTS OF CXCR4 INHIBITORS IN BIOLOGICAL PATHWAYS USING ENDOMETRIAL AND ENDOMETRIOTIC CELL LINES, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 50 Correa-Torres, Patricia; Blondet-Vázquez, Laura; Santiago-Amundaray, Luis; Pagán-Rivera, José; García, Verónica; Flores, Idhaliz; Suárez, Edu; Piñeiro, Fernando; Appleyard, Caroline B; Ruiz, Abigail IN VIVO EFFECTS OF AMD3100 IN A RAT MODEL OF ENDOMETRIOSIS, 41st Puerto Rico Interdisciplinary Scientific Meeting (PRISM) & 56th ACS Junior Technical Meeting. Estoy navegando la página de PRLSAMP UPR Bayamón, Bayamón, PR April, 29th 2023
- 51 Ferrer-Acosta, Y. ; Delgado-Reyes Y.; Caraballo-Perez, D. Effects of phytonutrients in resistance and metastasis in lung carcinoma. PR INBRE External Advisory Committee Meeting and Annual RetreatHyatt Regency Grand Reserve, Rio Grande, Puerto Rico, March 17-19, 2023.

# POSTER PRESENTATIONS

Seventy nine (79) presentations were performed by the INBRE Cores

## 79 Poster Presentations

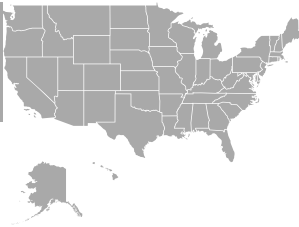
- ▶ 35 DRPP Investigators
- ▶ 21 STCE Core (students)
- ▶ 19 CRI Core
- ▶ 4 BiRC Core

## PRESENTATIONS BY LOCATION

54% PUERTO RICO



28% UNITED STATES



6% VIRTUAL



1% EUROPE



Data not shown: 3.8% Other, 5.0% Missing

## CONT. POSTER PRESENTATIONS

1. Birriel-Rodríguez, L. Synthesis of Ferrocenyl-Urea-Chalcone: Exploring their antitumorigenic activity. Southeastern Regional American Chemical Society Meeting, San Juan, PR, October 19, 2022.
2. Hernández-Solís, F.; Rios-Rodríguez, K.; Zayas, B. Toxicity of ABQ-48 on Breast Cancer Cells. 1th STCE/PRINBRE Summer Internship program, San Juan, PR, August 12, 2022
3. Menéndez-Escalera, D. L.; Casillas-Pagán, K. M.; Rosa, H. J.; Méndez, L. B. Microglia Involvement in Diesel Exhaust Particles Induced Neurotoxicity. PR-INBRE Undergraduate Summer Internship Program 2022, University of Puerto Rico - Medical Sciences Campus, San Juan, P.R. August 10, 2022.
4. Menéndez-Escalera, D. L.; Casillas-Pagán, K. M.; Rosa, H. J.; Méndez, L. B. Microglia Activation in Diesel Exhaust Particles Induced Neurotoxicity. ABRCMS 2022, Anaheim, CA. November 9-12, 2022.
5. Menéndez-Escalera, D. L.; Casillas-Pagán, K. M.; Rosa, H. J.; Méndez, L. B. Microglia Activation in Diesel Exhaust Particles Induced Neurotoxicity. Pontifical Catholic University, Ponce, P.R. December 3, 2022.
6. Menéndez-Escalera, D. L.; Casillas-Pagán, K. M.; Rosa, H. J.; Méndez, L. B. Microglia Activation in Diesel Exhaust Particles Induced Neurotoxicity. NISBRE 2022 (Virtual). December 12-14, 2022.
7. Paola C. Nieves-Oquendo, Neymar Maldonado-Vargas, Angenil García-Ortiz, Pablo E. Vivas-Mejía<sup>2</sup> and Claudia A. Ospina-Millán. Isolation and Nanocarrier Design of Simalikalactone D. 1st Summer Internship Program, University of Puerto Rico, Medical Sciences Campus, Aug 12, 2022.
8. Paola C. Nieves-Oquendo, Neymar Maldonado-Vargas, Angenil García-Ortiz, Pablo E. Vivas-Mejía<sup>2</sup> and Claudia A. Ospina-Millán. Isolation and Nanocarrier Design of Simalikalactone D. ACS Southeastern Regional Meeting, Puerto Rico Convention Center, Oct 20, 2022.
9. Olivieri-Henry, G.; Herrero-Rivera, C.; Perez-Luzunaris, F.; Soler, C.; Ruiz, J.; Santiago, M. MD; Sala, A. C. PsyD; Sepúlveda-Rivera, V. MD; Godoy-Vitorino, F. PhD. Changes in the Gut Microbiome associated with Cognitive Impairment in Puerto Ricans with Alzheimer's disease. 1st Summer Internship Program, San Juan, PR, August 5, 2022.
10. Olivieri-Henry, G.; Herrero-Rivera, C.; Perez-Luzunaris, F.; Soler, C.; Ruiz, J.; Santiago, M. MD; Sala, A. C. PsyD; Sepúlveda-Rivera, V. MD; Godoy-Vitorino, F. PhD. Changes in the Gut Microbiome associated with Cognitive Impairment in Puerto Ricans with Alzheimer's disease. 8th Biennial National IDeA Symposium of Biomedical Research Excellence (NISBRE), Virtual, December 12-14, 2022.
11. Neymar Maldonado-Vargas, Paola C. Nieves-Oquendo, Claudia A. Ospina-Millán. Study of the chemical composition of the hexane extract from Simarouba. 1st Summer Internship Program, University of Puerto Rico, Medical Sciences Campus, Aug 12, 2022.
12. Neymar Maldonado-Vargas, Paola C. Nieves-Oquendo, Claudia A. Ospina-Millán. Study of the chemical composition of the hexane extract from Simarouba. ACS Southeastern Regional Meeting, Puerto Rico Convention Center, Oct 20, 2022.
13. García-Cortés, C. and Parés-Matos, E. Isolation and characterization of protein complexes of overexpressed Human Serum Amyloid A from cytokines-induced HepG2 cells. Southeastern Regional Meeting of the American Chemical Society, San Juan, PR, October 19, 2022
14. García-Cortés, C. and Parés-Matos, E. Isolation and characterization of protein complexes of overexpressed Human Serum Amyloid A from cytokines-induced HepG2 cells. National IDeA Symposium of Biomedical Research Excellence, December 12, 2022
15. Elliott Rodríguez López, PhDc, Pablo Lopez., Thibault Mesplède, Ph.D., Vanessa Rivera-Amill, Ph.D. "Effect of HIV-1 Integrase Polymorphisms on DNA-Protein Interactions and Integrase Inhibitors Efficacy" National IDeA Symposium of Biomedical Research Excellence, December 12-14, 2022
16. Ufary Alvarado, A. J.; Torres Ortiz, C. Paraquat exposure affects the survival in *C. elegans* SOD1-G85R ALS model. 30th Puerto Rico Neuroscience Conference, Ponce, Puerto Rico, December 3, 2022
17. Ortiz-Rivera J, Kucheryavykh, K. PYK2 signaling is up regulated in recurrent glioblastoma tumors in C57BL/6/GL261 glioma implantation model. 30th P.R Neuroscience, Universidad Catolica en Ponce P.R, Dic 3 2022.
18. Ortiz-Rivera J, Kucheryavykh, K. PYK2 signaling is up regulated in recurrent glioblastoma tumors in C57BL/6/GL261 glioma implantation model. Society for Neuro-Oncology, Tampa, FL. Nov 16, 2022.
19. Ortiz-Rivera J, Kucheryavykh, K. PYK2 signaling is up regulated in recurrent glioblastoma tumors in C57BL/6/GL261 glioma implantation model. Forward Research symposium. Fairmont Hotel San Juan, P.R. Nov 3, 2022.
20. Vélez-Crespo, G; Hernández-O; Farril, E; Vlaar P, C; Dharmawardane, S; Castillo, L; Kucheryavykh, Y; Kucheryavykh, L. HV-107 and HV-118 as potential therapeutics for metastatic breast cancer. Forward Research Symposium, November 3, 2022.

## CONT. POSTER PRESENTATIONS

- 21 Vélez-Crespo, G; Hernández-O;Farril,E; Vlaar P, C; Dharmawhardane, S; Castillo,L; Kucheryavykh,Y;  
Kucheryavykh,L. HV-107 and HV-118 as potential therapeutics for metastatic breast cancer.Forward  
ResearchSymposium , November 3,2022.
- 22 Vélez-Crespo, G; Hernández-O;Farril,E; Vlaar P, C; Dharmawhardane, S; Castillo,L; Kucheryavykh,Y;  
Kucheryavykh,L. HV-107 and HV-118 as potential therapeutics for metastatic breast cancer.NISBRE  
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- 23 Koru, Y. B., Courtney, E., Aviles Rios, E., Ortiz-Alvarado, Y., Doke, M. A., Montes-Mercado, A., Ruggieri, A.,  
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- 24 Montes-Mercado, A., Dasta-Cruz, C., Ramos-Rodriguez, L., Del Valle Colon, C., Kuchibhotla, M., Agosto, J.  
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Society for Neuroscience 2022 Annual Meeting, Nov 12, 2022, San Diego, California, p. 150 . 03 / OO2.
- 25 Del Valle Colon, C., Morales-Cancio, S., Alvarez-Cortes, M., Montes-Mercado, A., Rodriguez-Cordero, J.,  
Agosto-Rivera, J. and Ghezzi, A. (2022). The role of Tip60 in mechanisms of alcohol-induced sleep  
disruption. In Society for Neuroscience 2022 Annual Meeting, Nov 12, 2022, San Diego, California, p. 150 .  
12 / OO12.
- 26 Ortiz-Maldonado, Y., F. Godoy-Vitorino and C. Restrepo. 2023. Understanding macro processes from a  
micro scale: Rhizobiota links landsliding and the carbon cycles through rock weathering. Puerto Rico  
Science, Technology, and Research Trust - Forward Symposium, San Juan, PR Nov. 3, 2022
- 27 N.E. Crespo Hernandez, A. TorresBracero, P. Akamine, C.L. Cadilla. Functional Analysis of TWIST2wild type  
and the Q119X, E75A, and E75Q mutant proteins involved in Setleis and BarberSay Syndromes. Poster  
presentation LB04.115 at the 25th IUBMB Congress, the 46th FEBS Congress and the 15th PABMB  
Congress held in Lisbon, Portugal in July 9 2022.
- 28 Alexandra Torres-Bracero, Noe Crespo-Hernández, Jessica Renta-Torres and Carmen L. Cadilla (2023)  
Characterizing DNA binding activity of TWIST1 Basic Domain Mutants to TNFa E-box. Abstract submitted  
and accepted for Discover BMB meeting, to be held in March 25-28, 2023 in Seattle, WA.
- 29 Joseline Serrano-González, Ariana N. Reyes-Rosado, Natalya Chorna and Carmen L. Cadilla (2023)  
Hermansky-Pudlak Syndrome Type 2 (HPS-2) Patient's Fibroblasts Show an Increase in Fatty Acid  
Concentrations. Abstract submitted and accepted for Discover BMB meeting, to be held in March 25-28,  
2023 in Seattle, WA.
- 30 Ortiz-Gómez, Valerie; Gómez-Cardona, Adriana; Maldonado-Hernández, Rafael; Nicolau-López, Eduardo.  
Use of biocompatible and antimicrobial superficial coating using a peptide polymer conjugate to combat  
biofilm formation 2022 Southeastern Reginal Meeting American Chemical Society, Oct 19 - 22, 2022, San  
juan PR
- 31 Ortiz-Gómez, Valerie; Gómez-Cardona, Adriana; Maldonado-Hernández, Rafael; Nicolau-López, Eduardo.  
Characterization of modified catheter surface with antimicrobial polymer-peptide conjugate used to  
combat infection disease. 2022 Forward Research Symposium, Nov 3, 2022, San Juan PR
- 32 Cantres-Rosario Y, Rodriguez A, Melendez Loyda M. Translational Proteomics Center. IDeA Proteomics  
Symposia for Core Directors and Staff. NISBRE. December 12-14, 2022, Virtual
- 33 Beatriz Zayas, Karoline Rios, Luis Ortiz, & Osvaldo Cox.  
Markers of Hypoxic cells: Testing a Pre-clinical Detection Assay. To be presented at the 2023 AACR Annual  
meeting, Orlando, Florida, April 14 2023.
- 34 Luisa F. Torres-Builes, Karoline Rios, Kianni M. Escalera, & Beatriz Zayas. Ana G Mendez University, Division  
of Science, Technology and Environment, San Juan, Puerto Rico Comparison of the Toxicity of mono-2-  
ethylhexyl (MEHP) on zebrafish (*Danio rerio*) brain cells versus HMC3 human microglial cell. To be  
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- 35 Hernandez -Solis, Rios-Rodriguez, K. & Zayas B. Toxicity of Novel ABQ-48 on Breast Cancer Cells. Poster presentataion at the PI-INBRE Summer Research Simposium, RCM, Univ of PR, August 12, 2022.
- 36 Josefina Romaguera, Nataliya Chorna, Filipa Godoy-Vitorino. Cervical meta-omic analyses identify tyramine metabolism in women with dysplasia. American Society for Colposcopy and Cervical Pathology (ASCCP), Houston, TX. May 4-7, 2023.
- 37 Kiara Ayuso, Nicole Rodriguez, Alejandra Vazquez, David Ruiz, Joseph Rivera and Nataliya Chorna. Metabolomics analysis of mouse brain after voluntary running exercise.7th Undergraduate Research and Creation Meeting, San Juan, PR, October, 28 2022.
- 38 Alejandra Vazquez, Kiara Ayuso, Nicole Rodriguez, David Ruiz, Joseph Rivera and Nataliya Chorna. Effects of running exercise on mice brain metabolism. PR Physiological Society, Ponce, PR, October 12, 2022
- 39 Kiara Ayuso, Nicole Rodriguez, Alejandra Vazquez, David Ruiz, Joseph Rivera and Nataliya Chorna. Beneficial effects of exercise on brain metabolism. 8th Biennial National IDeA Symposium of Biomedical Research Excellence December 12-14, 2022 (Virtual).
- 40 Alejandra Vazquez, Nicole Rodriguez, Kiara Ayuso, Alejandra Vazquez, David Ruiz, Joseph Rivera and Nataliya Chorna. Running exercise significantly increase tryptophan in mouse hippocampus and brainstem. 8th Biennial National IDeA Symposium of Biomedical Research Excellence December 12-14, 2022 (Virtual).
- 41 Nicole Rodriguez, Kiara Ayuso, Alejandra Vazquez, David Ruiz, Joseph Rivera and Nataliya Chorna. Metabolomics analysis identified metabolites and pathways related to neuronal development in differentiated SH-SY5Y neuroblastoma cells 8th Biennial National IDeA Symposium of Biomedical Research Excellence December 12-14, 2022 (Virtual).
- 42 Kiara Ayuso, Nicole Rodriguez, Alejandra Vazquez, David Ruiz, Joseph Rivera and Nataliya Chorna. Voluntary running exercise and brain metabolism. 30th PR Neuroscience Meetings, Ponce PR, December 3, 2022.
- 43 C. J. Buxó-Martínez , S. Planas , A. R. Vieira , S. RivasTumanyan , M. Campos , K. G. Martinez-Gonzalez , E. Morou-Bermudez. "Microbiome of Children Prenatally Exposed to Hurricane Maria".The 101st General Session & Exhibition of the IADR, 9th Meeting of the Latin American Region, 12th World Congress on Preventive Dentistry, Bogotá, Colombia, June 21-25, 2023.
- 44 J. M. Colón-Sarriera, A. Montes-Mercado, N. L. Fuenzalida-Uribe, I. Rodríguez-Fernández, N. Rodríguez, A. Ghezzi, "Long-lasting transcriptional responses of developmental alcohol exposure in *Drosophila*". 30th Puerto Rico Neuroscience Conference, Ponce, PR, December 3, 2022.
- 45 A. Montes-mercado, C. Dasta-Cruz, I. Ramos-Rodriguez, C. D. Del Valle Colón, M. Kuchibhotla, J. L. Agosto, A. Ghezzi. The role of histone acetyltransferase Tip60 in alcohol-induced neuroadaptations. SACNAS National Diversity in STEM Conference; San Juan, PR; Oct 26-28, 2022.
- 46 Maldonado-Vargas, N; Nieves-Oquendo, P.; Ospina-Millán, C. A. "Study of the Chemical Composition of the Hexane Extract from Simarouba" Poster Presentation, presented at 1st Summer Internship Program, PR INBRE Program, San Juan, PR, August 12, 2022
- 47 Nieves-Oquendo, P.; Maldonado-Vargas.; García-Ortiz, A.; Vivas-Mejía, Pablo E.; Ospina-Millán, C. A. "Isolation and Nanocarrier Design of Simalikalactone D" Poster Presentation, presented at 1st Summer Internship Program, PR INBRE, San Juan, Puerto Rico August 12, 2022
- 48 Maldonado-Vargas, N; Nieves-Oquendo, P.; Ospina-Millán, C. A. "Study of the Chemical Composition of the Hexane Extract from Simarouba" Poster Presentation, presented at 73rd Southeastern Regional ACS meeting (SERMACS 2022), Carolina, PR, October 19, 2022

## CONT. POSTER PRESENTATIONS

- 49 Nieves-Oquendo, P.; Maldonado-Vargas.; García-Ortiz, A.; Vivas-Mejía, Pablo E.; Ospina-Millán, C. A.  
"Isolation and Nanocarrier Design of Simalikalactone D" Poster Presentation, presented at 73rd  
Southeastern Regional ACS meeting (SERMACS 2022), Carolina, PR, October 19, 2022
- 50 Ospina, C. A. "Potent Antiplasmodial Activity of Tea Extracts and Compounds from Endemic Puerto Rican  
Plants" Poster Presentation, presented at American Society of Tropical Medicine and Hygiene, October 31,  
2022 Seattle USA
- 51 Boukli N.M. (2022). Endoplasmic Reticulum Stress Responce in HIV-1 Gp120 Glioma Cells. 27th Annual  
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Center, Tampa Bay, FL.
- 52 Díaz Osterman, C. J.; Torres Muriel N.; Martinez S. R.; Santiago Martinez N.; Rodríguez Ruiz B.; Rodríguez  
G.; Rosa E.; Escalona A. M.; Krumhansl R.; Dutil J.; Yamoah K.; Park J. Y.; Román Torreguitart, W. Evaluating  
cardiometabolic and oncologic risk among Puerto Rican men with prostate cancer. American Association  
for Cancer Research Special Conference: Advances in Prostate Cancer Research, Denver, Colorado, March  
15-18, 2023.
- 53 Santana, T; Torres Maisonet AM, DeLeon-Rodriguez, N. Insights into the health risk imposed by bacteria  
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resistance genes. 2022 National Diversity in STEM Conference SACNAS, San Juan, PR, October 27, 2022
- 54 García-Cortés, C.G.; Parés-Matos, E.I. Isolation and characterization of protein complexes of overexpressed  
Human Serum Amyloid A from citokines-induced HepG2 cells. SERMACS 2022, Biochemistry Session,  
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- 55 García-Cortés, C.G.; Parés-Matos, E.I. Isolation and characterization of protein complexes of overexpressed  
Human Serum Amyloid A from citokines-induced HepG2 cells. Discover BMB 2023, Abstract ID: 1329,  
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- 56 Yobet A. Perez-Perez, Roberto J. Morales-Silva, Joshua Perez-Torres, John K. Alvarado-Torres, Genesis  
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rats. Society of Neuroscience Annual Meeting, San Diego, CA, November 12-17, 2022
- 57 Roberto J Morales-Silva, Ursula Gelpi-Domínguez, Joshua Perez-Torres, Yobet Perez-Perez, Genesis  
Rodriguez-Torres , Marian Sepulveda-Orengo. Effects of chronic stress on cocaine seeking behavior after  
forced abstinence in male and female rats. Society of Neuroscience Annual Meeting, San Diego, CA,  
November 12-17, 2022
- 58 Tanairy Gómez-Rivas, Yobet A. Perez-Perez, Roberto J. Morales-Silva, Joshua Perez-Torres, John K. Alvarado-  
Torres, Genesis Rodriguez-Torres, Marian Sepulveda-Orengo. Effects of exercise on fear- and cocaine-  
induced changes in cocaine self-administration of male rats. Summer Internship Program Poster  
Presentation, San Juan, PR, August 12, 2022
- 59 Yobet A. Perez-Perez, Tanairy Gómez-Rivas, Roberto J. Morales-Silva, Genesis Rodriguez-Torres, Marian  
Sepulveda-Orengo. Effects of exercise on fear- and cocaine-induced changes in male and female rats. 12th  
Scientific Day, The Alliance, San Juan, PR, May 3, 2023
- 60 Vargas-Virella, A; García-Cortes, K; Martinez-Figueroa, Z; Cruz, E; Astrocytic and Neuronal Lactate  
Metabolism in the Brain of Angelman Syndrome Mice. Puerto Rico Neuroscience Conference. Dec 3, 2022
- 61 Lyza M Martinez, Luis F. Lopez, and Lisandro Cunci, AFM and Electrochemical Analysis of Different  
Biomolecules Using Npy-Specific Aptamer Modified Electrodes, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 62 Hiram J Lopez-Astacio, Lisandro Cunci, and Christopher Pollock, Development and Improvement of an  
Electrochemical Cell for X-Ray Fluorescence and Absorption Spectroscopy, 242nd ECS Meeting, Oct 9-12,  
Atlanta, GA



## CONT. POSTER PRESENTATIONS

- 63 Dorian Enid Melendez-Rodriguez, Lisandro Cunci, Yolimar Vazquez and Lauren Fernandez-Vega, Fabrication of Aptamer-Modified Microelectrodes for Npy Detection in Artificial Cerebrospinal Fluid Using Methylene Blue As Electrochemical Signal Amplifier, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 64 Lauren Fernandez-Vega, Lisandro Cunci, Yolimar Vazquez and Dorian Enid Melendez-Rodriguez, Neuropeptide Y Detection Using an Aptamer-Modified Microelectrode Together with Methylene Blue As a Redox Probe, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 65 Yolimar Vazquez, Lisandro Cunci, Lauren Fernandez-Vega and Dorian Enid Melendez-Rodriguez, Measurement of Neuropeptide Y By Square Wave Voltammetry Using Aptamer-Modified Platinum Microelectrodes and Methylene Blue, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 66 Namir Andrea Huertas and Lisandro Cunci, Metal Oxide Inclusion in Polycrystalline Pt-Based Electrocatalyst for an Ammonia Oxidation Reaction, 242nd ECS Meeting, Oct 9-12, Atlanta, GA
- 67 Abigail Ruiz, In vivo efficacy of the CXCR4 inhibitor AMD3100 in the rat model of endometriosis. 19th Ponce Research Institute Annual Scientific Conference, (PR-PHSU), Ponce PR, May 6th 2023
- 68 Abigail Ruiz, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, May 12th 2023
- 69 Colon-Vazquez, J.; Rojas-Colon, L.A.; Malpica-Nieves, C.J.; Mendez-Gonzalez, M.P.; Skatchkov, S.N.; Eaton, M.J.; and Rivera-Aponte, D.E. Hyperglycemia decreases astrocytic Kir4.1 and AMPK protein expression while elevating DNMT-1 and pro-inflammatory cytokines. 30th Puerto Rico Neuroscience Conference, Ponce, P.R., December 2, 2023
- 70 Angueira-Laureano, A.A.; Colon-Vazquez, J.; Skatchkov, S.N.; Eaton, M.J.; and Rivera-Aponte, D.E. The Effect of Aminoguanidine on Kir4.1 protein channel expression in Hyperglycemic Astrocytes. University of Puerto Rico, Bayamon Campus, Biology Department Annual Symposium, Bayamon, P.R., December, 2023
- 71 Rojas-Colon, L.A.; Maisonet-Nieves, M.; Malpica-Nieves, C.J.; Rivera-Aponte, D.E.; Skatchkov, S.N.; Eaton, M.J.; and Mendez-Gonzalez, M.P. Hyperglycemia decreases astrocytic Kir4.1 and AMPK protein expression while elevating DNMT-1 and pro-inflammatory cytokines. 30th Puerto Rico Neuroscience Conference, Ponce, P.R., December 2, 2023
- 72 Uffary, A.J and Torres, C. Paraquat exposure affects the survival in *C. elegans* SDO1G85R ALS model. 30th Puerto Rico Neuroscience Conference 2022, Pontifical Catholic University of Puerto Rico, Ponce, P.R (December 3 2022)
- 73 Torres, C., Laboy E.T., Morales, D, Uffary A.J. and Ramos, L.P. Study of mutants of Sod-1G92A and mitochondrial abundance in Amyotrophic Lateral Sclerosis. 30th Puerto Rico Neuroscience Conference 2022, Pontifical Catholic University of Puerto Rico, Ponce, P.R (December 3, 2022)
- 74 "Y. Loperena-Alvarez, R. J. Colón-Reyes, L. Kozobowski. Crosstalk between titanization in the *Cryptotococcus neoformans/gattii* complex and macrophages  
American Societ of Cell Biology and European Molecular Biology Orgaization Annual Meeting. Washington DC, December 3-7, 2022" USA
- 75 Lebrón, Neidy; Garcia, Veronica; León, Sherley; Soto, Adamaris; Velázquez, Jelizalee; Vera, Nicole; Maldonado, Adamaris; Pagan, José; Correa, Patricia; Ramón, Giancarlo; Suárez, Edu; Ruiz, Abigail BASAL EXPRESSION OF RECEPTORS IN EPITHELIAL AND STROMAL CELLS, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 76 Soto, Adamaris; León, Sherley; Velazquez, Jelizalee; Vera, Nicole; García, Verónica; Lebrón, Neidy; Maldonado, Adamaris; Pagán, Jose; Ramón Giancarlo; Correa, Patricia; Suarez Edu B; Ruiz, Abigail ADHESION OF ENDOMETRIAL STROMAL AND EPITHELIAL CELL LINES, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 77 Vera, Nicole; Velázquez, Jelizalee; García, Verónica; Lebrón, Neidy; León, Sherley; Soto, Adamaris; Maldonado, Adamaris; Correa, Patricia; Pagan, Jose; Suarez, Edu; Ruiz, Abigail Departament of Biology, University of Puerto Rico in Ponce IN-VITRO STUDY OF BASAL EXPRESSION OF ADHESION MOLECULES IN EPITHELIAL AND ENDOMETRIAL STROMAL CELLS, XV Congreso de Investigación y Creación Estudiantil, UPR Ponce, Ponce Puerto Rico, May 12th, 2023
- 78 Pérez-Caraballo, D.; Ferrer-Acosta, Y.; Suárez-Arroyo, I.J.; Delgado-Reyes, Y.; Torres, G. Development of phyto-nanosuspensions of cinnamon, graviola, and oregano extracts as adjuvant lung cancer therapy. PR INBRE External Advisory Committee Meeting and Annual Retreat Hyatt Regency Grand Reserve, Rio Grande, Puerto Rico, March 17-19, 2023.
- 79 Nieves-Oquendo. P., Sánchez, A., Vivas-Mejía, P., Ospina-Millán, C. A. "Isolation and Nanocarrier Design of Simalikalactone D" National IDEASymposium of Biomedical Research Excellence (NISBRE), December 12-14, 2022.



## STUDENTS MENTORED BY CORES DIRECTORS & COORDINATORS

**133** Undergraduate students were mentored by PR-INBRE Cores

- ▶ 48 students by CRI Core
- ▶ 76 students by DRPP Investigators
- ▶ 9 students by STCE Core (JRAs)

**38 UG completed their B.S. degree in this period.**

**115** Graduate students were mentored by PR-INBRE Cores

- ▶ 30 M.S. student (15 DRPP, 12CRI, 3 JRAs)
- ▶ 74 Ph.D. student (17 DRPP, 54CRI, 3 JRAs)
- ▶ 8 M.D. student (8 DRPP)
- ▶ 3 Other graduate degree

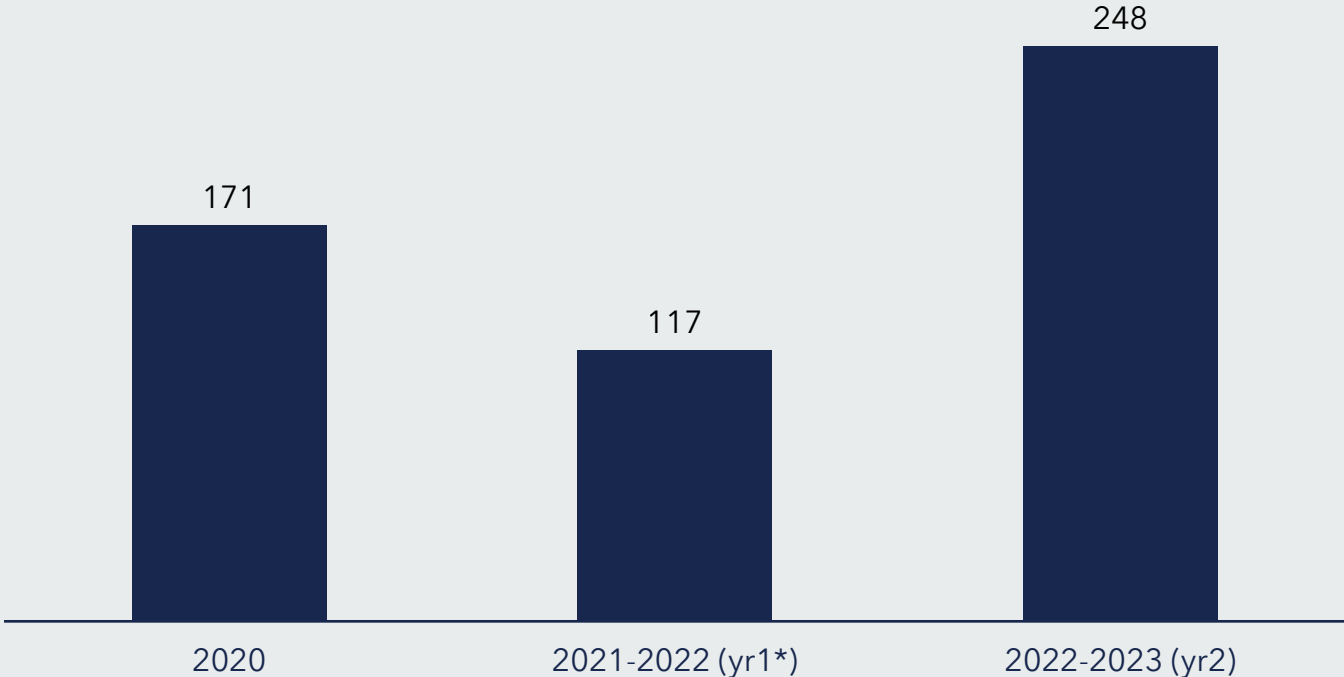
**13 Graduates students completed their degree in this period** (6 Ph.D., 7 M.S.)

# 248

Students mentored by PR-INBRE Cores

# CONT. STUDENTS MENTORED BY CORES DIRECTORS & COORDINATORS

Total students mentored by years



Graph includes undergraduate and graduates students.  
Year 2021-2022: Started a new grant cycle period

# NEW EQUIPMENT ACQUIRED BY PR-INBRE

7 New Equipment acquired by PR-INBRE

DRPP Core

\$166,367 in instrument support to nineteen projects in the PR-INBRE network.

	<b>Investigator</b>	<b>Institution</b>	<b>Instrument</b>	<b>Cost</b>
1	Claribel Acevedo	UPR-Mayagüez	KSV NIMA Langmuir Blodgett	30,000
2	Gabriel Barletta	UPR-Mayagüez	Small Lab equipment	21,957
3	Gabriel Barletta	UPR-Mayagüez	Biorad Chemidoc	23,000
4	Betzaida Castillo	UPR-Mayagüez	Lux Multimode reader	34,410
5	Timothy Colston	UPR-Humacao	Low temp freezer- Fluorometer-Sequencing stater pack	25,000
6	Waleska Gonzalez	Pontificia	Biological Safety Cabinet	11,418
7	Yaliz Loperena	Pontificia	Centrifuge - Cell culture incubator	20,000
			<b>TOTAL</b>	<b>\$165,785</b>

# USERS OF CORE FACILITIES

## DRPP CORE

### Feasibility Awards

This award was given to collaborative projects to use PR-INBRE Core Facilities.

#### 1 Award recipient

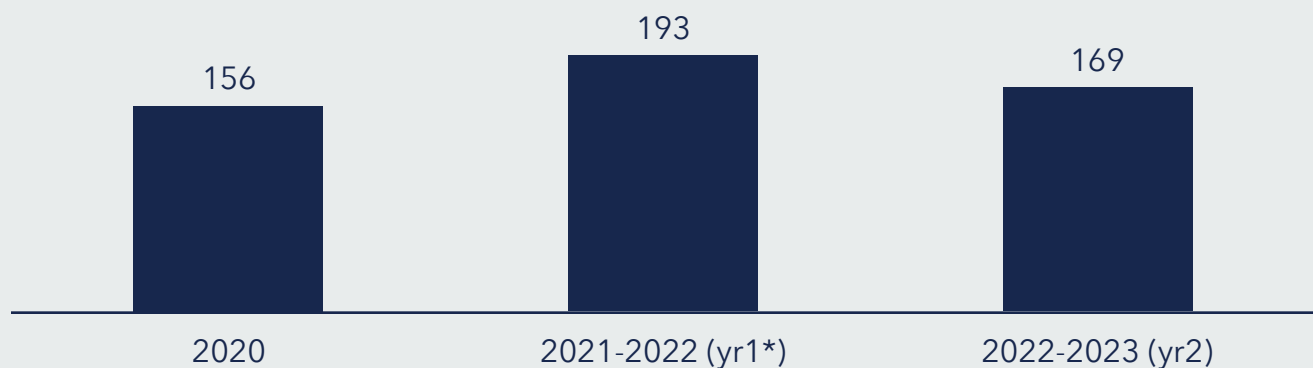
Investigator & Institution	CORE Facility to be used
Ivette Suarez, Universidad Central del Caribe (OI)	Proteomics UPR-Medical Sciences, Dr. Melendez

## CRI Core

**169** PR-INBRE users of CRI Core Facility

Position	HGC	Proteomics	SGF	ChemTox	Metabolomics	SubTotal
Faculty	11	6	6	2	16	<b>41</b>
Post doc	1	5	2	0	1	<b>9</b>
Staff	5	10	3	4	1	<b>23</b>
Graduate students	7	25	-	-	11	<b>43</b>
Undergraduate students	14	4	19	8	8	<b>53</b>
Total						169

### CRI Facility Users by Years



.Year 2021-2022: Started a new grant cycle period

## CONT. **USERS OF CORE FACILITIES**

### BiRC Core

Users of the High Performance Facility Computer (HPCf)

- ▶ **100** new user accounts in 8 new research groups

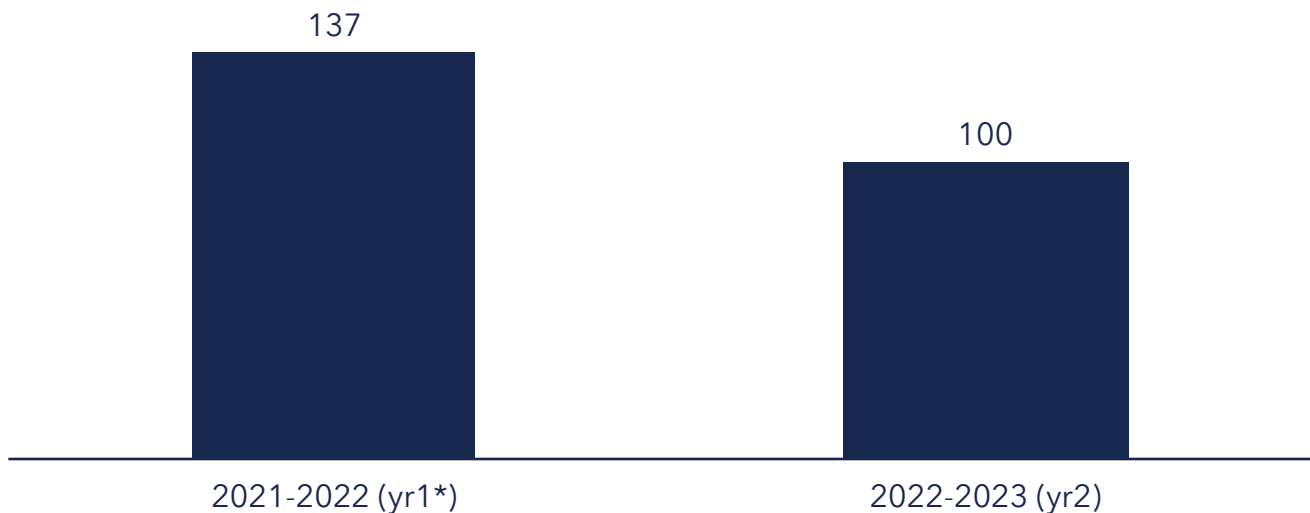
\*\*Including 18 new user account on the Boquerón cluster from BiCoP training participants.

- ▶ A total of 250 support requests from users of cyberinfrastructure, HPCf

#### **Examples of support requests**

- Boqueron-Status of my submitted job
- Request of temporary password
- User Account Request - HPCf www
- Forget account password - Boqueron
- Group Account Request - HPCf www
- Request to install NanoPack
- Password reset
- BWA error
- Plotsr

**BIRC New Users Accounts by Years**



.Year 2021-2022: Started a new grant cycle period

# CORE WORKSHOPS & SEMINARS

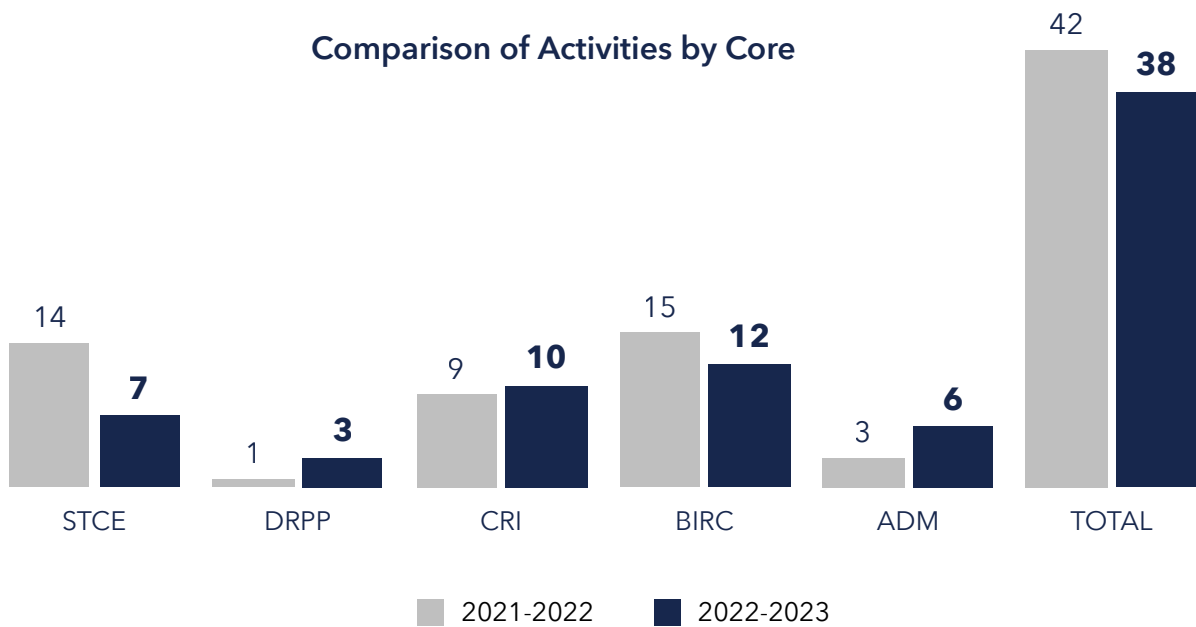


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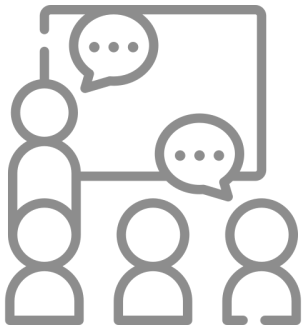
Seminars, Workshops and Conferences were sponsored by PR-INBRE

CORES	Number of Activities
STCE	7
DRPP	3
CRI	10
BiRC	12
ADM	6

### Comparison of Activities by Core



## CONT.CORE WORKSHOPS & SEMINARS



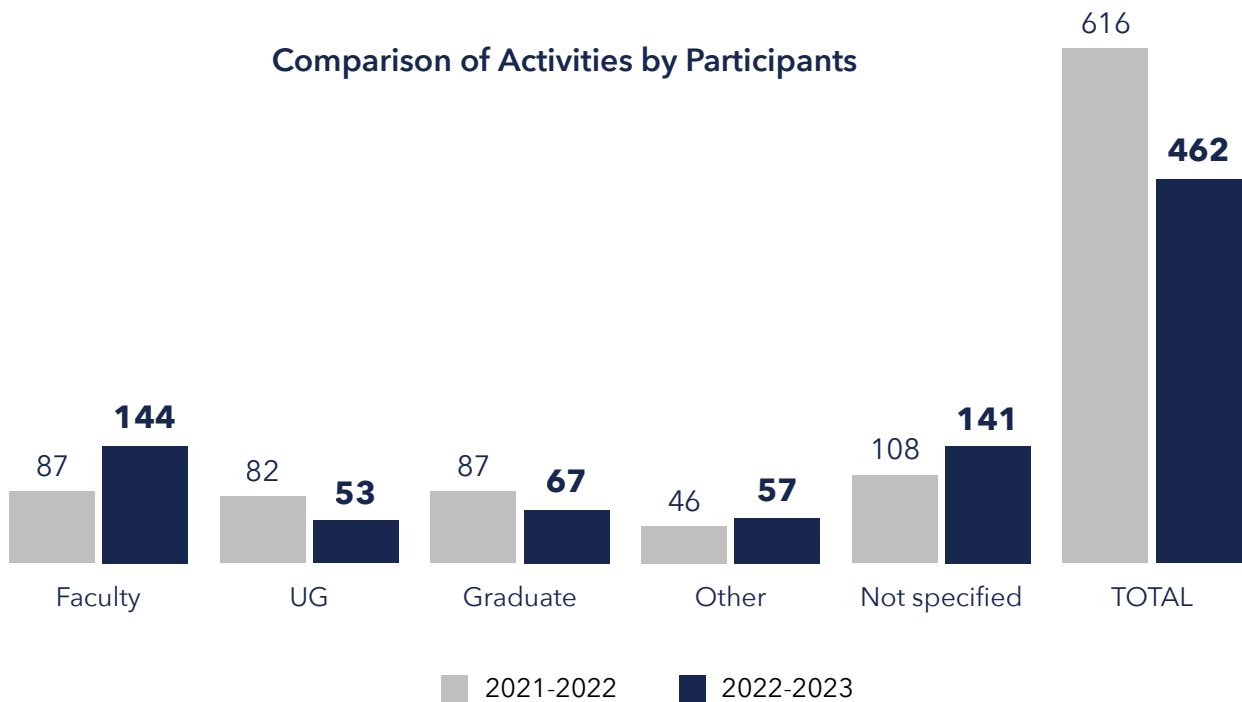
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Activities Participants

Participants	Total
Faculty	144
Undergraduate student	53
Graduate student	67
Other	57
Not specified	141

Average: 15 participants

### Comparison of Activities by Participants





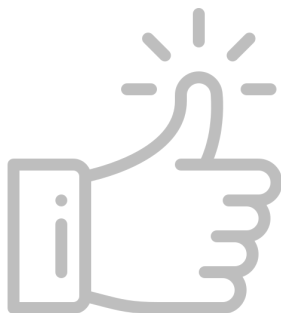
## CONT.CORE WORKSHOPS & SEMINARS



<b>Evaluation</b>	<b>Total</b>
Activities Evaluated	29
Activities Not Evaluated*	9

\*attendance sheet unavailable or not coordinated with evaluation team

<b>Sponsored</b>	<b>Total</b>
Activities PR-INBRE Sponsored	25
Activities PR-INBRE Co-sponsored	13



### **Satisfaction** with Workshops & Seminars

Average: 99% (very satisfied or satisfied)

### **Usefulness** of the Workshops & Seminars

Average: 97% reported the seminar/workshop was useful for their professional performance



### **Evaluation Response Rate**

Average: 62%

## CONT. CORE WORKSHOPS & SEMINARS

### ADMINISTRATIVE CORE

Activity	Date	Location	Participants	Evaluated
Steering Committee Meeting	September 29, 2022	In person	31	Y
Keyence Microscope Training Session	November 17-18, 2022	UPR Medical Sciences Campus	-	N*
Introduction to NanoString's Spatial & Gene Expression Technology at UPR	February 21, 2023	Hybrid (In person + online)UPR MSC	12	Y^
Identification of biologically active Ganoderma lucidum compounds in aggressive breast cancer models	March 14, 2023	UPR Medical Sciences Campus	12	Y^
Integrated Pipeline for the Accelerated Discovery of Anti Hipnozoite Drugs	May 8, 2023	UPR Medical Sciences Campus	-	N*
EAC Meeting	March 17-19, 2023	Hyatt Regency Hotel	49	Y

### STCE CORE

Activity	Date	Location	Participants	Evaluated
1st Summer Internship Program Poster and Oral Research Presentations	August 12, 2022	UPR Medical Sciences Campus	30	Y
Lanifibranor (a pan-PPAR agonist) improves markers of cardiometabolic health and glycemic control in p with NASH.	October 6, 2022	Hybrid (In person + online) UPR MSC	7	Y
Characterization of the Inflammatory Breast Cancer Population in Puerto Rico	October 14, 2022	Hybrid (In person + online) UCC	42	Y
Individual Development and Experimental Design Plans: Life-Time Integrated Skills.	November 5, 2022	UPR Cayey	7	Y
Small Business Innovation Research Proposal & Design Thinking	April 15, 2023	UPR Rio Piedras	13	Y

\*Eval Not Requested/ Attendance Sheet Not Available

^Eval Request received after the activity completion

## CONT.CORE WORKSHOPS & SEMINARS

### STCE CORE

Activity	Date	Location	Participants	Evaluated
Small Business Innovation Research Research Certificate Value Proposal and Customer Discovery (Second Section)	April 22, 2023	UPR Rio Piedras	-	N*
Infinium HD Methylation Assay Training Invitation	April 18, 2023	UPR Medical Sciences Campus	13	Y

### DRPP CORE

Activity	Date	Location	Participants	Evaluated
PRINBRE Peer Review Meeting	September 29, 2022	Hybrid (In person + online)	20	N*
PRINBRE Peer Review Meeting	November 4, 2022	Hybrid (In person + online)	9	Y
Progress Report Workshop	January 26, 2023	On-line	11	Y

### CRI CORE

Activity	Date	Location	Participants	Evaluated
Orientation Seminar Analysis and Instrumentation Facilities Available	September 7, 2022	On-line	20	Y
Hands-on Basic Cell Culture Methods (AM)	October 14, 2022	In person	10	Y
Hands-on Basic Cell Culture Methods (PM)	October 14, 2022	In person	8	Y

\*Eval Not Requested/ Attendance Sheet Not Available

## CONT.CORE WORKSHOPS & SEMINARS

### CRI CORE

<b>Activity</b>	<b>Date</b>	<b>Location</b>	<b>Participants</b>	<b>Evaluated</b>
Metabolomics analysis for beginners	November 30, 2022	On-line	6	Y
Targeted proteomics	January 24 & 25, 2023	Comprehensive Cancer Center	25	Y
Blood metabolomics	January 25-26, 2023	UPR Medical Sciences Campus	3	Y
Metabolomics Raw Data Analysis	February 17, 2023	On-line	7	Y
Basic Cell Culture Methods: Hands-on Workshop	February 17, 2023	UAGM Gurabo	5	Y
Basic Cell Culture Methods: Hands-on Workshop	February 24, 2023	UAGM Gurabo	3	Y
Metabolomics raw data analysis	March 22, 2023	On-line	3	Y

### BIRC CORE

<b>Activity</b>	<b>Date</b>	<b>Location</b>	<b>Participants</b>	<b>Evaluated</b>
Data Processing in R with dplyr	September 9, 2022	UPR Ponce	7	Y
R Data Analysis - The Basics	June 28 & August 19, 2022	UPR Ponce	-	Y
R Data Analysis - The Basics	November 4, 18, December 1, 9 & 16, 2022	UAGM Gurabo	28	Y







## CONT.CORE WORKSHOPS & SEMINARS

### BIRC CORE

<b>Activity</b>	<b>Date</b>	<b>Location</b>	<b>Participants</b>	<b>Evaluated</b>
R Data Analysis - The Basics	October 14, 21, 2022	Hybrid (In person + online)	25	Y
Linux - Boquerón Cluster Operating System for Bioinformatics & Computation	September 16, October 7 & 28, 2022	Hybrid (In person + online)	6	Y*
Linux - Boquerón Cluster Operating System for Bioinformatics & Computation	January 27, February 10 & 24, 2023	UIAPR Bayamón	-	N*
R Data Analysis - The Basics	March 3 & 10, 2023	PUCPR	19	Y
The base R graphic system	March 17, 2023	PUCPR	-	N*
Graphics with Gplot2	March 24, 2023	PUCPR	-	N*
Data Processing in R	March 31, 2023	PUCPR	-	N*
Linux - Boquerón Cluster Operating System for Bioinformatics & Computation	April 14, 21 & 28, 2023	PUCPR	-	N*
R Data Analysis Part I	March 3, 2023	PUCPR	19	Y

\*Eval Not Requested/ Attendance Sheet Not Available

# CORE INDICATORS

Indicator	Last Year	This Year	
New <b>Publications</b>	24	31	
New <b>Grants</b> awarded	10	9	
Oral + Poster <b>Presentations</b>	55	130	
Students <b>Mentored</b>	117	248	
New <b>Equipment</b>	19	7	
Activity <b>Participants</b>	616	462	

# RECCOMENDATIONS



Increase utilization of *Evaluation Request Form* (online version) and PR-INBRE attendance sheet format. Submission of the *Evaluation Request Form* must occur at least one week before the activity proposed date. The activity coordinator must submit flyer, agenda and participants registration (if apply)

- 📌 helps reduce participant missing data
- 📌 improve evaluation coordination and eval survey response rate



Evaluate all program activities and complete Post Activity Section in the *Evaluation Request Form* (online version). Follow up submission of activity photos and summary of accomplishments.

- 📌 helps program dissemination and tracking of outcomes



Establish a calendar of seminars/workshop by CORE, preferably by semester.

- 📌 increase dissemination efforts and potentially augment participation
- 📌 improve activity coordination/administrative tasks organization



Incorporate a hand-on session for BioSketch & Other Support preparation during PR-INBRE Retreat.

- 📌 enhance investigators skills/proficiency
- 📌 reduce reporting burden

## CONT. RECCOMENDATIONS



Add a publication requirement for investigators with 2 or more years with PR-INBRE support.

📌 increase publications rate



Request an updated productivity report at the end of the reporting period.

📌 comprehensive productivity data/outcomes





# REFERENCES

Creswell, J. and Clark, V. (2011) *Designing and Conducting Mixed Methods Research*. California: SAGE Publications.

Guest, G. Namey, E., & Mitchell, M. (2013). *Collection Qualitative Data*. California: SAGE Publications.

Pole, K. (2007). *Mixed Method Designs: A review of Strategies for Blending Quantitative and Qualitative Methodologies*. *Mid-Western Educational Researcher* 20(4).



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