2021-2022

EVALUATION REPORT

Puerto Rico IDeA Network of Biomedical Research Excellence

http://inbre.hpcf.upr.edu

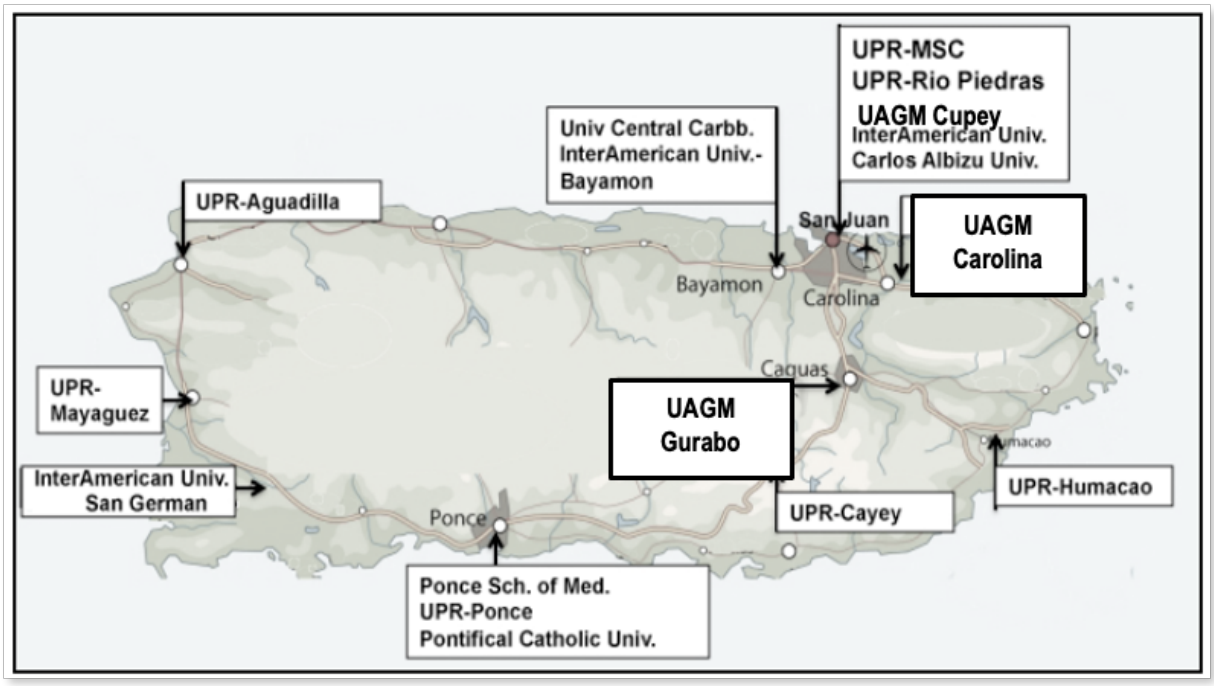
July, 2022

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.

- **Lead Institution**: UPR-Medical Sciences Campus
- **Mentoring Institution**: UPR-Rio Piedras
- **7 Primary Undergraduate Institutions** (PUIs): UAGM-Gurabo, UAGM-Carolina, UAGM-Cupey, UPR-Mayagüez, UPR-Cayey, UPR-Humacao, and InterMetro
- **10 Outreach Institutions (OIs):** UPR-Aguadilla, Inter San Germán, PHSU, UCC, UCA, Pontifical Catholic Univ., UPR-Ponce, Inter-Bayamón, Sagrado Corazón, UPR-Carolina



NETWORK **IMPACT** SUMMARY

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.

62 New **FACULTY** recruited at the Network

4 New **RESEARCH LABORATORIES** at the Network

38 New **EQUIPMENT** at the Network

55 New **GRANTS AWARDED** at the Network

NEW **RESEARCH SPACE**

Four new laboratories were created at the PR-INBRE Network Institutions.

Lead Institution (UPR-MSC)
Research Laboratory
Main Building Dr. Guillermo Arbona Irizarry
School of Dental Medicine
Basement AB-17E
Total space: 423 ft^2

PUIs
3 Research Laboratory at UPR-Cayey
Total space: 1,067 ft^2

Last Report
(yr. 2020):
None (0)

NEW **FACULTY**

Sixty two new faculty were recruited at the Network Institutions during this reporting period 2021-2022.

7 Lead Institution (UPR-MSC)
**names not provided by the Institution

9 Mentoring Institution (UPR-Rio Piedras)

Prof. Chris Nitch	Environmental Science
Prof. Imilce Rodríguez	Biology
Prof. José Lugo Martínez	Computer Science
Prof. Arnaldo Vargas Silva	Physics
Prof. Xianyong Wu	Chemistry
Prof.Raúl Rodríguez	Chemistry

**4 names not provided by the Institution

Last Report (yr. 2020): **6** new Faculty

42 Primary Undergraduate Institutions

Prof. Sandra Barroso	Science & Technology	UAGM.Carolina
Prof. Roberto Masso	Science & Technology	UAGM.Carolina
Prof. Mariel Pérez	Natural Sciences	Inter Metro
Prof. María Barbarena	Natural Sciences	Inter Metro
Prof. Pedro Maldonado	Mathematics & Computer Sci.	Inter Metro
Prof. Maribel Rodríguez	Nursing	Inter Metro
Prof. Isabelle Cintrón García	Biology	UPR-Humacao
Prof. Kevin Alicea Torres	Biology	UPR-Humacao
Prof.Rafael Maldonado	Biology	UPR-Humacao
Prof. Marcos López	Chemistry	UPR-Humacao
Prof. Carmen González Ortíz	Physical Therapy	UPR-Humacao
Prof. Franchezka Lebrón	Mathematics	UPR-Humacao
Prof. Inés Ortíz	Occupational Therapy	UPR-Humacao
Prof. María Santos Rivera	Nursing	UPR-Humacao
Prof. Zonet González Rodríguez	Nursing	UPR-Humacao
Prof. Yeyvann García Arroyo	Nursing	UPR-Humacao
Prof. María Dones Rodríguez	Nursing	UPR-Humacao
Prof. Alex Mercado	Biology	UAGM.Gurabo
Prof. Angel Carrión Tavárez	Social Sciences	UPR-Cayey
Prof. Kati Avilés Vázquez	Social Sciences	UPR-Cayey

CONT. NEW **FACULTY**

Prof. Sergio Medina Ríos	Biology	UPR-Cayey
Prof. Yaria Arroyo Torres	Biology	UPR-Cayey
Prof. Joan Roque Peña	Chemistry	UPR-Cayey
Prof. Antonio Rivera Brown	Chemistry	UPR-Cayey
Prof. Héctor Arbelo López	Chemistry	UPR-Cayey
Prof. Ernes C. Aragonés Geney	Math-Physics	UPR-Cayey
Prof.Mónica López de Victoria	Math-Physics	UPR-Cayey
Prof. Maricarmen Grajales	Science and Technology	UAGM.Cupey
Prof. José Vega	Science and Technology	UAGM.Cupey
Prof. Ana M. Colón Otero	Health Science	UAGM.Cupey
Prof. Damaris Hernández Santana	Health Science	UAGM.Cupey
Prof. Amalia Pimentel Benitez	Health Science	UAGM.Cupey

**10 names not provided by the Institutions

4 Outreach Institutions

Prof. Adalberto Díaz Casas	Natural Sciences	Pontifical Catholic Univ
Prof. Dairaliz Aguilar Figueroa	Biomedical Sciences	Pontifical Catholic Univ
Prof. Jorge L. Báez Morales	Biomedical Sciences	Pontifical Catholic Univ
Prof. Carlos Rivera Barreto	Biomedical Sciences	Pontifical Catholic Univ

Faculty Rank (All Institutions)

Position	N	%
Assistant Professor	18	47%
Instructor	14	37%
Associate Professor	3	8%
Adjunct Professor	2	5%
Professor	1	3%
Not reported (missing value)	24	-

CONT. NEW **FACULTY**

Department (All Institutions)

Position	N	%
Biology	7	18%
Chemistry	6	14%
Nursing	5	12%
Science & Technology	4	10%
Biomedical Sciences	3	7%
Natural Sciences	3	7%
Health Science	3	7%
Social Sciences	2	5%
Math-Physics	2	5%
Mathematics	2	5%
Computer Sciences	1	2%
Occupational Therapy	1	2%
Physical Therapy	1	2%
Physics	1	2%
Environmental Sciences	1	2%
Not reported (missing value)	20	-

NEW **STEM COURSES**

Three new STEM courses were offered at the PR-INBRE Network Institutions.

Undergraduate Level (n=1)

This course was offered at the UPR-Cayey

Course Name	Code	Department	Description
1.Chemistry of Solid Surfaces	QUIM 4180	Chemistry UPR-Cayey	Topics related to solid surface chemistry are discussed. Geometric structure of surfaces and their changes caused by absorption of atoms and molecules. It includes an introduction of scanning microscopy, electron diffraction, spectroscopy, and computational simulation techniques.

Graduate Level (n=2)

These courses were offered at the Pontifical Catholic Univ

Course Name	Code	Department	Description
1. Cognitive Neuropsychology	NSGP 623	Biomedical Sciences Pontifical Catholic Univ	The course addresses the study of concepts in cognitive neuropsychology framed into the development of the psychological processes of the nervous system. Alterations of the cognitive functions will be studied as the result of cerebral injury and how these contribute to understand the normal cognition. In addition, different models of cognitive processing will be studied to distinguish the intact from the impaired capacities.
2. Neuropsychology of Language and Executive Functions	NSGP 625	Biomedical Sciences Pontifical Catholic Univ	The course addresses the study the oral and written language disorders in its various components (sensory, comprehension and production engines). At the same time, alterations related to the processes of conceptualization, reasoning and problem solving and executive functions will be analyzed. In addition, reference will be made to language disorders and the thought process when there is brain damage.

Last Report
(yr. 2020):
18 new Courses

NEW **EQUIPMENT**

Thirty eight new equipment were acquired by the Network Institutions during this period.

33 New instrument @t PUIs

1. Refrigerated microcentrifuge
2. iBind, iBlot, iBright
3. 2 clinical centrifuge
4. Nu-Aire 4ft Class II Type A2NSF Biological Safety Cabinet
5. Nu-Aire 4ft Class II Type A2NSF Biological Safety Cabinet
6. Neon Transfection System
7. IBlot2, Iblind starter kit
8. ND-ONE-W Nanodrop One Spectrophotometer & ND-PP1 Productivity Kit
9. Freezer-80 K21OULY 10 Cu.Ft. Ultra Low
10. Freezer-80 K21OULY 10 Cu.Ft. Ultra Low
11. Freezer -145 Chest Cryogenic CRQ5502
12. 25LCEETSA Freezer/Refrigerator
13. 25LCEETSA Freezer/Refrigerator
14. Vacuum centrifuged Evaporator Savant Speed Vac SPD1030P1-115
15. Ion GeneStudio S5, Ion Chef, Veritri Pro
16. King Fisher Flex Purification System
17. QUBIT 4 Quant Starter Kit Wifi
18. Sorvall X1 Pro 120 TX-400 (Refrigerated Centrifuge)
19. Sorvall X1 Pro 120 TX-400 (Refrigerated Centrifuge)
20. VWR Lab Freezer Manual Defr -30C
21. Fluorescence Trinocular Inverted Microscope AE31E 30W
22. 915MHz Wireles Radio Module, Monitor System
23. NMR 100PRO
24. VWR Incubated Shaker -10L High Capacity
25. VWR Incubated Shaker Pro HEPA
26. Rovotap/Cpntroller Pum 115V/6
27. Zetasizer Advance Series Pro Blue – Malvern
28. MicroRaman Spectrometer - StellarNet
29. Squidstat Plus Potentiostat – Admiral Instruments
30. Autosampler for Inert HPLC – Jasco
31. Analytical balances

** 2 equipment not specified by the Institution

5 New instrument @t Outreach Institutions

1. High Performance Liquid Chromatography (HPLC)
2. RT-PCR
3. Min ION
4. Ice maker machine
5. Autoclaves

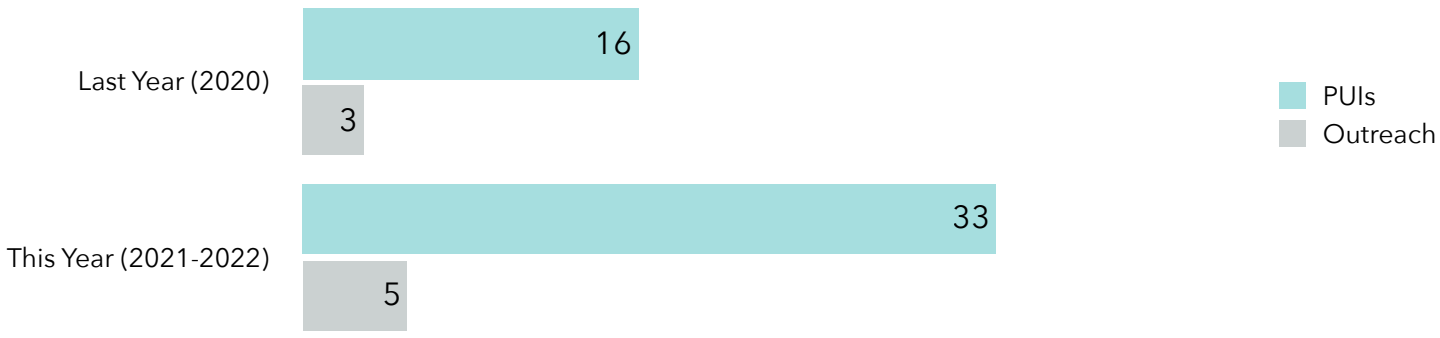
CONT. NEW **EQUIPMENT**

Type	Institution	New Instrument	Number of users
PUIs	UAGM.Carolina	Refrigerated microcentrifuge	8
PUIs	UAGM.Carolina	iBind, iBlot, iBright	8
PUIs	UAGM.Carolina	2 clinical centrifuge	16
PUIs	InterMetro	Nu-Aire 4ft Class II Type A2NSF Biological Safety Cabinet	15
PUIs	InterMetro	Nu-Aire 4ft Class II Type A2NSF Biological Safety Cabinet	15
PUIs	InterMetro	Neon Transfection System	15
PUIs	InterMetro	IBlot2, Iblind starter kit	15
PUIs	InterMetro	ND-ONE-W Nanodrop One Spectrophotometer & ND-PP1 Productivity Kit	15
PUIs	InterMetro	Freezer-80 K21OULY 10 Cu.Ft. Ultra Low	15
PUIs	InterMetro	Freezer-80 K21OULY 10 Cu.Ft. Ultra Low	15
PUIs	InterMetro	Freezer -145 Chest Cryogenic CRQ5502	15
PUIs	InterMetro	25LCEETSA Freezer/Refrigerator	15
PUIs	InterMetro	25LCEETSA Freezer/Refrigerator	15
PUIs	InterMetro	Vacuum centrifuged Evaporator Savant Speed Vac SPD1030P1-115	15
PUIs	InterMetro	Ion GeneStudio S5, Ion Chef, Veritri Pro	15
PUIs	InterMetro	King Fisher Flex Purification System	15
PUIs	InterMetro	QUBIT 4 Quant Starter Kit Wifi	15
PUIs	InterMetro	Sorvall X1 Pro 120 TX-400 (Refrigerated Centrifuge)	15
PUIs	InterMetro	Sorvall X1 Pro 120 TX-400 (Refrigerated Centrifuge)	15
PUIs	InterMetro	VWR Lab Freezer Manual Defr -30C	15
PUIs	InterMetro	Fluorescence Trinocular Inverted Microscope AE31E 30W	15

CONT. NEW **EQUIPMENT**

Type	Institution	New Instrument	Number of users
PUIs	InterMetro	915MHz Wireles Radio Module, Monitor System	15
PUIs	InterMetro	NMR 100PRO	15
PUIs	InterMetro	VWR Incubated Shaker -10L High Capacity	15
PUIs	InterMetro	VWR Incubated Shaker Pro HEPA	15
PUIs	InterMetro	Rovotap/Cpntroller Pum 115V/6	15
PUIs	UAGM.Gurabo	Zetasizer Advance Series Pro Blue – Malvern	15
PUIs	UAGM.Gurabo	MicroRaman Spectrometer - StellarNet	15
PUIs	UAGM.Gurabo	Squidstat Plus Potentiostat – Admiral Instruments	15
PUIs	UAGM.Gurabo	Autosampler for Inert HPLC – Jasco	10
PUIs	UAGM.Cupey	Analytical balances	15
OI	Pontificia	High Performance Liquid Chromatography (HPLC)	2
OI	Pontificia	RT-PCR	1
OI	Pontificia	Min ION	1
OI	Pontificia	Ice maker machine	1
OI	Pontificia	Autoclaves	2

Comparison of New Equipment at the Network Institution



NEW **GRANTS**

Fifty five new grants were awarded to the Network Institutions during this reporting period

Grants by Institutions

PUIs

Grants Submitted: 34

Grants Awarded: 16

Total Awarded: $15,668

Outreach Institutions

Grants Submitted: 40

Grants Awarded: 8

Total Awarded: $819,766

Lead Institution

Grants Submitted: 58

Grants Awarded: 31

Total Awarded:$8,250, 275

Type	Institutions	Grants Submitted	Grants Awarded	Total Awarded ($)
L	UPR-MSC	58	31	$8,250, 275
O	PHSU	37	6	$400,265
P	UPR-Humacao	9	4	$6,127,652
P	UPR-Cayey	9	5	$273,000
P	UAGM.Gurabo	7	1	$3,000
P	Inter-Metro	5	4	$9,178,210
O	Pontificia Catholic Univ.	3	2	$419,501
P	UAGM.Carolina	2	1	$11,766
P	UPR-Mayaguez	2	1	$75,000
	TOTAL	**132**	**55**	**$24,738,669**

CONT. NEW **GRANTS**

Grants at the PR-INBRE Network by SOURCE

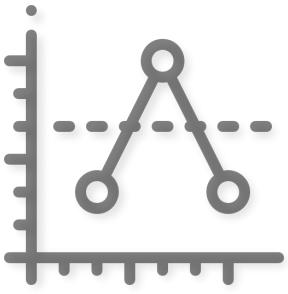
Source	Grants Awarded	Total Awarded ($)
NIH	9	$15,220,193
NSF	3	$788,043
Other Federal Agency	15	$3,894,143
Foundations	3	$401,056
Other	21	$4,154,673
Not specified	4	$280,561
Total	**55**	**$24,738,669**

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**

*Yr. 2019, PHSU was awarded with a U54 ($21M)

Grants include NIH, NSF, Department of Education, Other federal agencies, Foundations, and State Funds



AVERAGE (yrs. 2015-2020)

Grant Submitted: 141

Grant Awarded: 44

STEM **STUDENTS**

Two thousand one hundred twenty eight STEM degrees were awarded at the PR-INBRE Network Institutions this reporting period.

2,128
STEM DEGREES AWARDED

STEM Degrees at the Network Institutions

Associates: 181

Bachelors: 1,571

Master: 254

Doctorate: 20

Medical (MD): 102

CONT. STEM **STUDENTS**

12,722
STEM STUDENTS ENROLLED

STEM Students at the Network Institutions (Enrolled)

Associates: 510

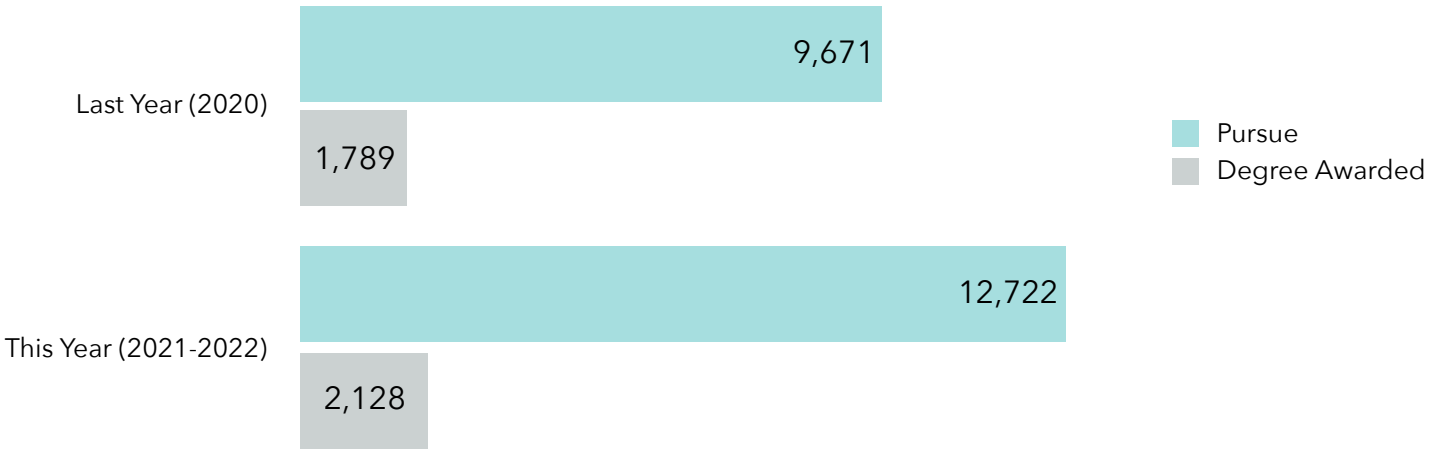
Bachelors: 8,995

Master: 1,401

Doctorate: 920

Medical (MD): 936

Comparison of STEM Students & Degrees Awarded at the Network Institution



Indicator	Last Year	This Year	
New **Research Space**	0	4	▲
New **STEM Courses**	18	3	▼
New **equipment**	19	38	▲
New **Grants awarded**	27	55	▲
STEM Degrees Awarded	1,789	2,128	▲
New **Faculty**	6	62	▲

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 2021-2022)

4 Pilot Projects Investigators renewed

Investigators	Institution	Thematic Area
Iris Salgado	UCC	Drug Discovery
Marian Sepúlveda	PHSU	Neuroscience
Ceidy Torres	Pont. Cat. U.	Molecular Medicine
Yaliz Loperena	Pont. Cat. U.	Molecular Medicine

6 New Pilot Projects pending approval

Investigators	Institution	Thematic Area
Lisandro Cunci	UAGM Gurabo	Neuroscience
Natasha De León	InterMetro	Molecular Medicine
Claudia Ospina	InterAmerican, Bayamón	Drug Discovery
Marcos López	UPR Humaco	Drug Discovery
Elsie Pares	UPR Mayagüez	Drug Discovery
Edu Suárez	UPR Ponce	Molecular Medicine

Total: 10 DRPP projects

- 4 PUIs
- 6 Outreach Institutions

INVESTIGATORS PRODUCTIVITY SUMMARY

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

21 Undergraduates and Graduate students **mentored**

10 Peer **review panels** served

2 New **research collaboration**

3 **Awards** received

NEW **PUBLICATIONS**

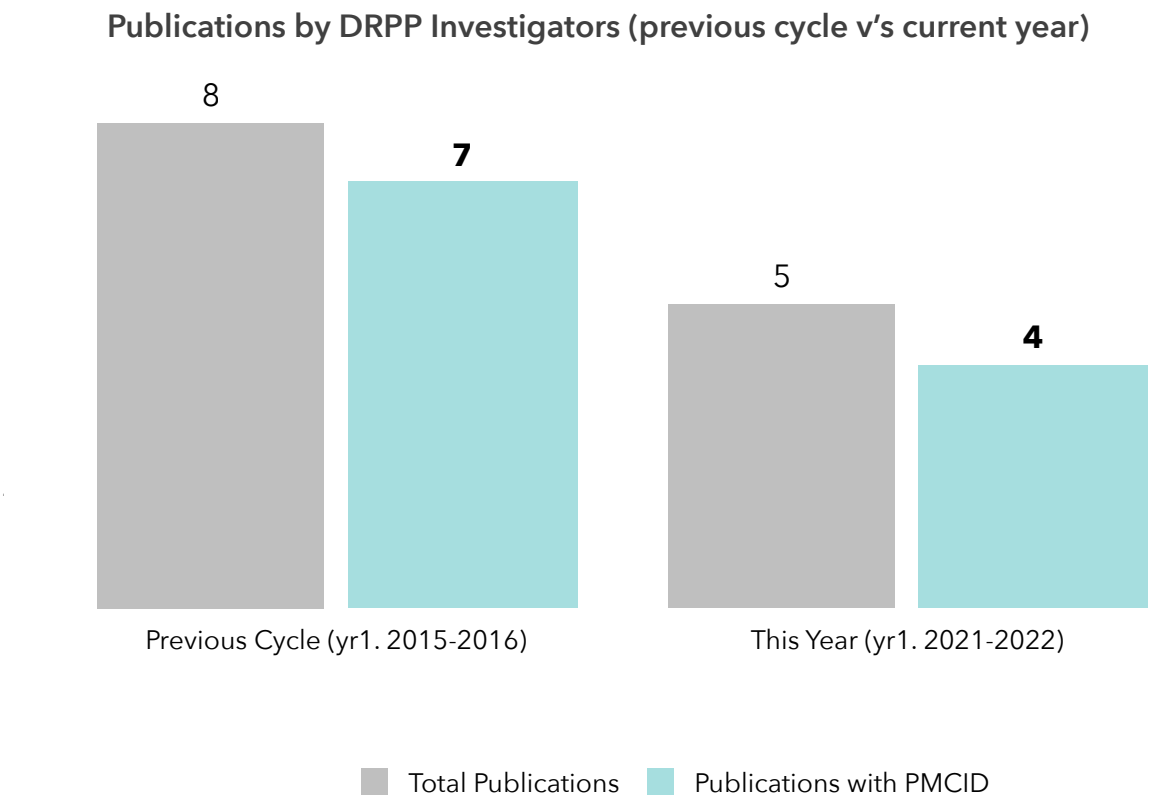
Pilot Projects Investigators & Graduate DRPP Investigators

5 Publications

- All publications acknowledge PR-INBRE program
- 4 with PMCID number

Investigator	Publications
Marian Sepúlveda	**1.** Marrero-Cristobal G, Gelpi-Dominguez U, Morales-Silva R, Alvarado-Torres J, Perez-Torres J, Perez-Perez Y, **Sepulveda-Orengo M**. Aerobic exercise as a promising nonpharmacological therapy for the treatment of substance use disorders. J Neurosci Res. 2021 Dec 1;. doi: 10.1002/jnr.24990. [Epub ahead of print] Review. PubMed PMID: 34850988; NIHMSID:NIHMS1750411, **PMCID: PMC9156662**.
Filipa Godoy Michelle Martínez	**2.** Lacourt-Ventura MY, Vilanova-Cuevas B, Rivera-Rodríguez D, Rosario-Acevedo R, Miranda C, Maldonado-Martínez G, Maysonet J, Vargas D, Ruiz Y, Hunter-Mellado R, Cubano LA, Dharmawardhane S, Lampe JW, Baerga-Ortiz A, **Godoy-Vitorino F, Martínez-Montemayor MM**. Soy and Frequent Dairy Consumption with Subsequent Equol Production Reveals Decreased Gut Health in a Cohort of Healthy Puerto Rican Women. Int J Environ Res Public Health. 2021 Aug 4;18(16). doi: 10.3390/ijerph18168254. PubMed PMID: 34444002; PubMed Central **PMCID: PMC8391519**.
Caroline Appleyard	**3. Appleyard, Caroline B**., et al. "Voluntary Wheel Running Reduces Vesicle Development in an Endometriosis Animal Model through Modulation of Immune Parameters." Frontiers in Reproductive Health, vol. 3, 26 Jan. 2022, 10.3389/frph.2021.826541.
Linette Castillo	**4.** Cruz-Collazo A, Ruiz-Calderon JF, Picon H, Borrero-Garcia LD, Lopez I, **Castillo-Pichardo L**, Del Mar Maldonado M, Duconge J, Medina JI, Bayro MJ, Hernández-O'Farrill E, Vlaar CP, Dharmawardhane S. Efficacy of Rac and Cdc42 Inhibitor MBQ-167 in Triple-negative Breast Cancer. Mol Cancer Ther. 2021 Dec;20(12):2420-2432. doi: 10.1158/1535-7163.MCT-21-0348. Epub 2021 Oct 4. PubMed PMID: 34607932; PubMed Central **PMCID: PMC8643341**.
Lisandro Cunci	**5.** Díaz-Ayala R, López-Nieves M, Colón Berlingeri ES, Cabrera CR, **Cunci L,** González CI, Escobar PF. Test Strip Platform Spin-Off for Telomerase Activity Detection: Development of an Electrochemical Biosensor. ACS Omega. 2022 Mar 9;7(11):9964-9972. doi: 10.1021/acsomega.2c00713. PMID: 35356692; **PMCID: PMC8944542.**

CONT. NEW **PUBLICATIONS**



NEW **GRANTS**

Five grants awarded to the DRPP investigators (active & graduate) in this reporting period

1 GRANT SUBMITTED

Investigator	Role	Agency	Type	Proposal Tittle	STATUS June 2022
Iris Salgado	PI	NIH-NIAID	R16 SURE First	Initial preclinical studies of novel influenza-A antivirals	**Not granted** Expected to be resubmitted on September

5 GRANTS AWARDED

Active DRPP Investigator

Investigator	Role	Agency	Type	Project Tittle	Budget
Lisandro Cunci	PI	NIH	R21 1R21MH129 037-01	Development and Validation of an NPY-sensitive Microelectrode for Measuring NPY Release from Hippocampus	$381,684

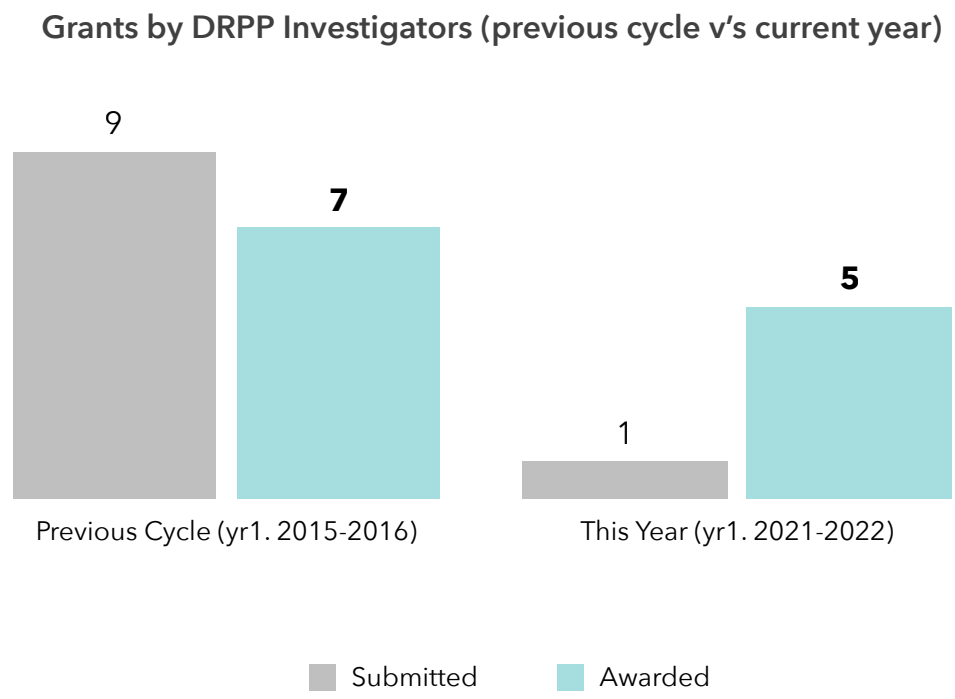
Graduate DRPP Investigator

Investigator	Role	Agency	Type	Project Tittle	Budget
Caroline Appleyard	PI	NIH-NIGMS	T32 1T32GM144 896-01	G-RISE at Ponce Health Sciences University	$636,986
Michelle Martínez	PI	NIH-NIGMS	R16 1R16GM145 488-01	Validating the mode of action of ergosterol peroxide as a selective breast cancer inhibitor	$117,029

NEW **GRANTS**

Cont. Graduate DRPP Investigator

Investigator	Role	Agency	Type	Project Tittle	Budget
Ivette Suárez	PI	NIH-NIGMS	SC2 1SC2GM141720-01	SCAMP3 as a regulator of EGFR/STAT3 axis in triple-negative breast cancer	$378,402.00
David Rivera	Co-Pi	NIH-NINDS	SC2 1SC2NS124907-01	Hippocampal astrocytic Kir4.1 channel function in Type 2 diabetic mice: impact on neuronal hyperexcitability	$118,329



NEW **PRESENTATIONS**

Two presentations were reported by the DRPP investigators.

NEW **PRESENTATIONS**

POSTER PRESENTATION

- **Iris Salgado,** Universidad Central del Caribe

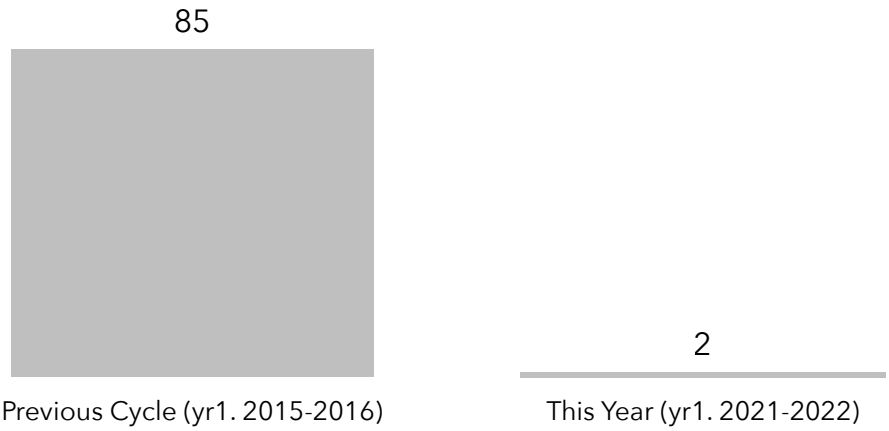
  IK. Salgado, AO. Díaz-Quiñones, N. Mayol, MT. González, WI. Silva, and H.M. Maldonado. Characterization of lead compounds with significant influenza antiviral activity. **Southeast Regional IDeA Conference 2021**, Royal Sonesta Resort, in San Juan, PR, November 12 – 14, 2021.

- **Yaliz Loperena,** Pontificia Catholic University

  Yaliz Loperena-Álvarez, Rodney Colón-Reyes and Lukazs Kozobowski. Macrophage Conditioned Media Induces Titanization in the Cryptotococcus neoformans/gattii complex. **SE-IDeA conferences,** San Juan PR, November 12-14, 2021.

CONT. NEW **PRESENTATIONS**

Presentations by DRPP Investigators (previous cycle v's current year)



STUDENTS MENTORED BY DRPP INVESTIGATORS

39 Undergraduate students were mentored by DRPP Investigators

- **1** UG completed their degree this year

12 Graduate students were mentored by DRPP Investigators

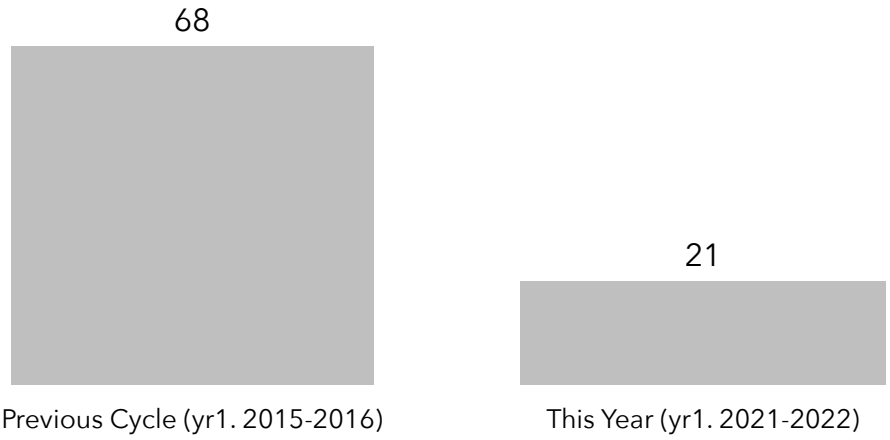
- 2 M.S. student
- 7 Ph.D. student
- 3 M.D. student

21

Students mentored by DRPP Investigators

CONT. STUDENTS MENTORED BY DRPP INVESTIGATORS

Students mentored by DRPP Investigators (previous cycle v's current year)



SERVICE IN PEER REVIEW PANELS
BY DRPP INVESTIGATORS

Investigators collaborated in 10 peer review panels

3 Panels Outside the PR-INBRE Network Institution

Investigator	Type of Panel	Agency or Organization
Marian Sepúlveda	Review of Manuscript	Journal Cognitive Neurodynamics
	Review of Manuscript	Journal Addiction Neuroscience
Yaliz Loperena	NSF includes - STEM Higher Ed 1	NSF

7 Panels Inside the PR-INBRE Network

Investigator	Type of Panel	Agency or Organization
Iris Salgado	IACUC	Universidad Central del Caribe
	Thesis Committee: Gabriel Rodriguez Vázquez PhDc	Universidad Central del Caribe
	Thesis Committee: Nicole Nieves Avilés PhDc	Universidad Central del Caribe
	Thesis Committee: Ivonne Arias Méndez - PhDc	Universidad Central del Caribe
	Thesis Committee: Pedro Vegas de Paramo -PhDc	Universidad Central del Caribe
Marian Sepúlveda	Thesis Committee: Yesenia Castillo	PHSU
	Thesis Committee: Joaris Soto Hernandez	PHSU

NEW RESEARCH COLLABORATIONS
BY DRPP INVESTIGATORS

2 research collaborations were established during this period

Dr. Ceidy Torres

Pontifical Catholic University of Puerto Rico

Project Tittle: Mitophagy and SOD1 G93A Mutation Associated to Amyotrophic Lateral Sclerosis using Yeast Model

New Collaboration

- Collaborator: Dr. Elsie Pares - UPR Mayagüez
- Description of the collaboration: Provide consulting about bioinformatic tools and analysis of Sod1 protein.

Dr. Iris Salgado

Universidad Central del Caribe

Project Tittle: Potential mechanism of action of selected lead compounds with influenza antiviral activity

New Collaboration

- Collaborator: Dr. Luis J. Montaner - The Wistar Institute, Philadelphia, PA
- Description of the collaboration: Dr. Montaner is a highly qualified scientist who will bring his experience in the discovery and pharmacognosy of small molecule antivirals to our project. In addition, he will guide us in the establishment of animal models for the development of antiviral drugs. The collaboration of Dr. Montaner will guide us to take this project to the preclinical phase of drug development.

AWARDS RECEIVED BY DRPP INVESTIGATORS

3 award received by DRPP investigator this period

Dr. Marian Sepúlveda

Ponce Health Sciences University

Award received	Date of the award	Place
Marian Sepúlveda Award to participate in the Scientific Communication in Clinical and Translational Research (ALLIANCE)	January to May 30, 2022	Online course
Hispanic Alliance for Clinical and Translational Research (ALLIANCE) Award to participate in The Mentor-Mentee Teams' Program (2021-2023)	2021-2023	ALLIANCE
Travel Award Recipient, Annual Meeting (Puerto Rico)	December 1, 2021	American College of Neuropsychopharmacology (ACNP)

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 2021-2022)

Undergraduate Students

	Student	Institution	Program	Mentor
1	Jonathan J. Cruz	UAGM.Carolina	Psychology	Dr. Nilda Medina
2	Edwin T. Laboy Torres	PCUPR	Neurosciences	Dr. Ceidy Torres
3	Kiara L. Matos González	UAGM.Carolina	Psychology	Dr. Nilda Medina
4	Daviana L. Méndez Escalera	UAGM.Carolina	Microbiology	Dr. Loyda Méndez

Graduate Students

	Student	Institution	Program	Mentor
1	Carlos Garcia Cortés	UPR-May	Chemistry	Dr. Elsie Pares
2	Jailenne Quiñones Rodríguez	PHSU	Cellular Molecular Biology	Dr. Thomas Schikorski
3	Elliott Rodríguez López	UPR-May	Biomedical Sciences	Dr. Vanessa Rivera

CONT. JUNIOR RESEARCH ASSOCIATE

Graduate Students

	Student	Institution	Program	Mentor
4	Lysmarie Santos	UPR-Mayagüez	PhD Biophysics	Dr. Juan López Garriga
5	Axel Ufarry Alvarado	PCUPR	Neurosciences	Dr. Ceidy Torres
6	Gabriela Ortiz Soto	UCC	Cellular and Molecular Biology	Dr. Michelle Martínez
7	Grace E. Vélez Crespo	UCC	Biomedical Sciences	Dr. Linnette Castillo
8	Jescelica Ortiz Rivera	UCC	Cellular and Molecular Biology	Dr. Lilia Kucheryavykh

STUDENTS PRODUCTIVITY SUMMARY

5 New **publications**

18 Oral and Poster Presentations

6 JRAs completed **degree**

7 New **Honors** & **Awards**

JRAS NEW PUBLICATIONS

Graduate Students

Jailenne Quiñones
Ponce Health Sciences University

1. Jailenne I Quiñones-Rodríguez et al., (2022) Unusual Innervation to the Gluteus Maximus and it's Clinical Implications. Journal of Clinical and Diagnostic Research. 2022 May, Vol-16(5): AD01-AD03

2. Jailenne I. Quiñones-Rodríguez*, Valeria Lozada-Miranda, Natalia del Mazo-Arbona, and Martin Rosario. (2022) Case Report: Unilateral Double Subscapular Artery: A Case Report. Journal of Clinical and Diagnostic Research. 2022 Apr, Vol-16(4): AD01-AD03. DOI: 10.7860/JCDR/2022/52633.16183

JRAs Alumni (Past-Trainees)

Darya Marchany-Rivera
UPR-Mayagüez

3. Frankenfield K, Marchany-Rivera D, Flanders KG, Cruz-Balberdy A, Lopez-Garriga J, Cerda JF. Fluoride binding to characteristic heme-pocket centers: Insights into ligand stability. J Inorg Biochem. 2021 Nov;224:111578. doi: 10.1016/j.jinorgbio.2021.111578. Epub 2021 Aug 17. PubMed PMID: 34481348; PubMed Central **PMCID: PMC8463504**.

Brayan Vilanova
Inter Metro

4. Lacourt-Ventura MY, Vilanova-Cuevas B, Rivera-Rodríguez D, Rosario-Acevedo R, Miranda C, Maldonado-Martínez G, Maysonet J, Vargas D, Ruiz Y, Hunter-Mellado R, Cubano LA, Dharmawardhane S, Lampe JW, Baerga-Ortiz A, Godoy-Vitorino F, Martínez-Montemayor MM. Soy and Frequent Dairy Consumption with Subsequent Equol Production Reveals Decreased Gut Health in a Cohort of Healthy Puerto Rican Women. Int J Environ Res Public Health. 2021 Aug 4;18(16). doi: 10.3390/ijerph18168254. PubMed PMID: 34444002; PubMed Central **PMCID: PMC8391519.**

Sofia Pérez
UPR-Rio Piedras

5. Gaur K, Pérez Otero SC, Benjamín-Rivera JA, Rodríguez I, Loza-Rosas SA, Vázquez Salgado AM, Akam EA, Hernández-Matias L, Sharma RK, Alicea N, Kowaleff M, Washington AV, Astashkin AV, Tomat E, Tinoco AD. Iron Chelator Transmetalative Approach to Inhibit Human Ribonucleotide Reductase. JACS Au. 2021 Jun 28;1(6):865-878. doi: 10.1021/jacsau.1c00078. Epub 2021 May 25. PMID: 34240081; **PMCID: PMC8243325.**

CONT. NEW **PUBLICATIONS**

Total

- 5 Publications (3 with PMCID)
- 5 Manuscripts in preparation

Manuscripts in preparation

Jailenne I. Quiñones-Rodríguez*, Valeria Lozada-Miranda, Natalia del Mazo-Arbona, and Martin Rosario. Case Report: Bilateral double subscapular arteries. (2022) In press: Journal of Clinical and Diagnostic Research.

Jailenne I. Quiñones-Rodríguez, Thomas Schikorski*. Advancing electron microscopy and immunogold protein localization by using modern glyoxal fixation. (2022) To be submitted to PLOS One.

Elliott Rodríguez, Pablo López, Thibault Mesplède, Vanessa Rivera-Amill; May 2023; Changes in Viral Replication of HIV-1 Viral Particles Harboring T218I/S Integrase Polymorphisms.

Jescelica Ortiz-Rivera, Alejandro Albors, Yuriy Kucheryavykh, Jeffrey K. Harrison and Lilia Kucheryavykh, May 2022, Dynamics of Microglial activation and Cytokines Expression Profile in Glioma Resection Site During Post-Surgical Period in Mice, Brain Sciences MDPI.

Lysmarie Santos- citation not provided

NEW **PRESENTATIONS**

PRESENTATIONS

- **8** Oral Presentations (3 UG Student, 5 Grad Student)
- **10** Poster Presentations (3 UG Student, 7 Grad Student)

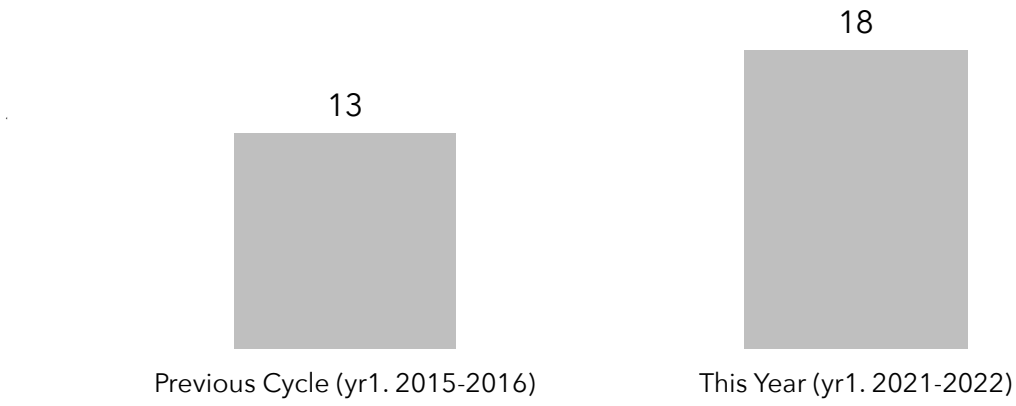
	Oral Presentation
1	Jailenne I. Quiñones-Rodríguez (2021) Glyoxal a nontoxic substitute to achieve superior preservation for modern electron microscopy. **Fundación Garcia Rinaldi**. Universidad Central del Caribe.
2	Elliott Rodríguez López, PhDc, Richard Noel, Ph.D., Thibault Mespléde, Ph.D., James Porter, Ph.D., Griselle Tirado, Ph.D., Vanessa Rivera-Amill, Ph.D., "Effect of HIV-1 Integrase Polymorphisms on DNA-Protein Interactions and Integrase Inhibitors Efficacy" at the **Ponce Health Sciences University Data Blitz** (2021) September 24, 2021
3	Santos-Velázquez, L; López-Garriga, J. Fluorescence Spectroscopy as a Novel Method for Sulfhemoglobin Detection. **American Chemical Society Local Section**, Puerto Rico, November 6, 2021.
4	Vélez, GE; Vlaar, C; Hernández, A; Castillo-Pichardo, L; Dharmawardhane, S; Kucheryavykh, L. HV-107 and HV-118 as potential therapeutics for triple negative metastatic breast cancer . **Graduate Student Research Seminar**,UCC, Bayamón, PR. December 6, 2021.
5	Ortiz-Rivera, J. Dynamics of microglial activation and expression of cytokines in the site of glioblastoma tumor resection. **Research Seminar, UCC-School of Medicine,** P.R, 7 de Febrero, 2022
6	Laboy-Torres, E. The Structure of the Mutant Sod1-G92A Protein Related to ALS in Yeast Model. **BBB Zeta-Delta Chapter research presentation**, Zoom, February 4, 2022.
7	Medina, N.; Matos, K; Cruz, J. Coversatorio: Los Estudiantes Hablan: Aprendizaje Remoto Durante la Pandemia. **68va Covencion Annual- APPR Psicologia como Vinculo y Conexion.**, San Juan, Puerto Rico, Noviembre 5, 2021
8	Medina Santiago, N. G., Matos, K., Cruz Torres, J. (November 5, 2021). Conversatorio: Los estudiantes hablan: Aprendizaje remoto durante la pandemia. **68th Puerto Rico Psychology Asociation Virtual Convention**

STUDENTS **PRESENTATIONS**

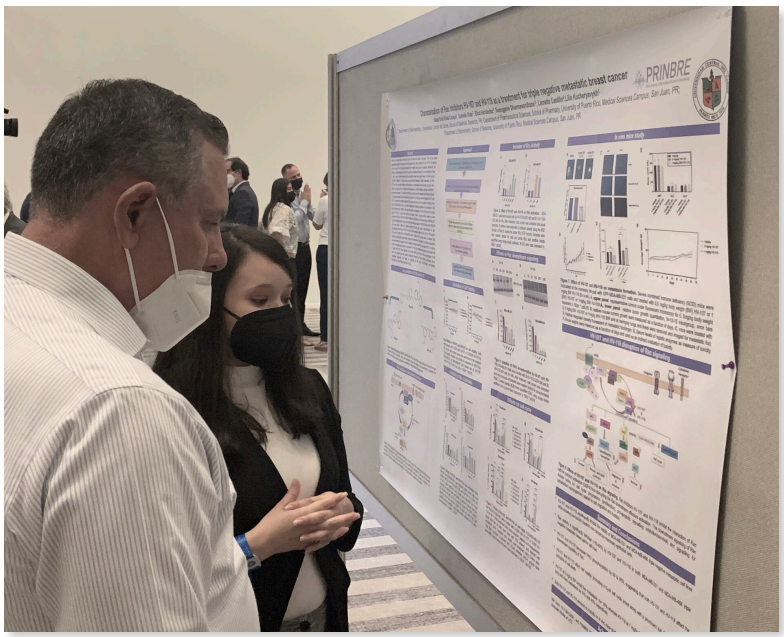
CONT. NEW **PRESENTATIONS**

	Poster Presentation
1	Jailenne I. Quiñones-Rodríguez and Thomas Schikorski (2021) The First Non-Cancerogenic Fixative for Modern Chemical Fixation in Electron and Light Microscopy. **Puerto Rico Southeast IDeA Regional Meeting.** San Juan, PR. November 13, 2021
2	Jailenne I. Quiñones-Rodríguez and Thomas Schikorski (2021) Glyoxal modern fixation for light and electron microscopy. **Puerto Rico Neuroscience Meeting.** San Juan, PR. December 4, 2021
3	Elliott Rodríguez López, PhDc, Richard Noel, Ph.D., Thibault Mespléde, Ph.D., Vanessa Rivera-Amill, Ph.D., "Effect of HIV-1 Integrase Polymorphisms on DNA-Protein Interactions and Integrase Inhibitors Efficacy" at 2021 **Southeast Regional IDeA Conference**. November 13, 2021
4	Santos-Velázquez, L; López-Garriga, J. Fluorescence Spectroscopy as a Novel Method for Sulfhemoglobin Detection. 2021 **Southeast Regional IDeA Conference**, San Juan,Puerto Rico, November 13,2021.
5	Vélez, GE; Vlaar, C; Hernández, A; Castillo-Pichardo, L; Dharmawardhane, S; Kucheryavykh, L. HV-107 and HV-118 as potential therapeutics for triple negative metastatic breast cancer . **3rd Forward Research and Innovation Summit,** San Juan,PR. December 10, 2021.
6	Ortiz-Rivera J, Albors, A, Kucheryavykh, K. Dynamics of microglial activation and expression of cytokines in the site of glioblastoma tumor resection. **29th P.R Neuroscience Conference**, Universidad Interamericana P.R, 2021.4 de Diciembre, 2021
7	Ortiz-Rivera J, Albors, A, Kucheryavykh, K. Dynamics of microglial activation and expression of cytokines in the site of glioblastoma tumor resection. **Forward Research and Innovation.** Online, 2021. 10 de Diciembre, 2021
8	Pagán-Torres, N. A.; Rosa, H. J.; Menéndez, D.L.; Casillas, K. M.; Méndez, L.B. Diesel Exhaust Particles Induced Inflammatory Responses are Associated with Executive Functions Deficits in Juvenile Mice. **Immunology 2022**, Portland, Oregon, May 6th, 2022
9	Matos, K. (November 11, 2021) Reliability of the Spanish version of the Cognitive Assessment System 2nd Edition: Rating Scale (CAS2:RS). **Annual Biomedical Research Conference for Minority Students** (ABRCMS) Virtual.
10	Matos, K. (November 13, 2021) Reliability of the Spanish version of the Cognitive Assessment System 2nd Edition: Rating Scale (CAS2:RS). **Southeast Regional IDeA Conference** (SEIDeA), San Juan, Puerto Rico

Presentations by JRAs students (previous cycle v's current year)



STUDENTS **PRESENTATIONS**



JRAS **COMPLETED** DEGREE

Undergraduate Students

1. Jonathan Cruz
Completed B.S. in Psychology at UAGM Carolina

- Status: Accepted in PhD Clinical Psychology at Universidad Carlos Albizu

2. Kiara Matos
Completed B.S. in Psychology at UAGM Carolina

- Status: Accepted in PhD Clinical Psychology at Universidad Carlos Albizu

3. Edwin Laboy
Completed B.S. in Neurosciences at Pontificia Catholic University

- Status: Accepted in Biophysics PhD program at University of Wisconsin Madison

☑ 3 undergraduates out of 4 completed their B.S. and were accepted in Graduate Schools.

Daviana Menéndez

Status: Currently, studying B.S. at UAGM. Carolina. Accepted in *PR-INBRE UG Summer Internship 2022*.

CONT. JRAS COMPLETED DEGREE

Graduate Students

1. Carlos García
Completed M.S in Chemistry at UPR.Mayaguez

- Status: Enrolled in MD Program at Universidad Autónoma de Guadalajara.

2. Jailenne I. Quiñones
Completed PhD in Anatomy and Cell Biology at UCC

☑ 2 graduates out of 8 completed their degrees

Lysmarie Santos
Ph.D. student at UPR-Mayaguez
Expected Graduation: December 2022

Jescelica Ortiz
Ph.D. student at UCC
Expected Graduation: December 2022

Axel Ufarry
M.S. student at PUCPR
Expected Graduation: May 2023

Elliot Rodríguez
Ph.D. student at PHSU
Expected Graduation: May 2023

Grace Vélez
Ph.D. student at UCC
Expected Graduation: May 2023

Gabriela Ortiz
Ph.D. student at UCC

JRAS **HONORS** & **AWARDS**

Undergraduate Students

Kiara Matos, UAGM.Carolina

- Award: Presentation Awards 2021, ABRCMS

Daviana Menéndez, UAGM.Carolina

- Award: Committee on Diversity Undergraduate Travel Award - Annual Meeting of the Society of Toxicology

Graduate Students

Jailenne I. Quinones, UCC

- Awards: Fellow, Anatomy Scholars Program, American Association for Anatomy.

  Fellow, Yale Ciencia Academy, Yale School of Medicine's Office of the Diversity, Equity, and Inclusion.

Elliot Rodríguez, PHSU

- Awards: Fundación Intellectus Scholarship

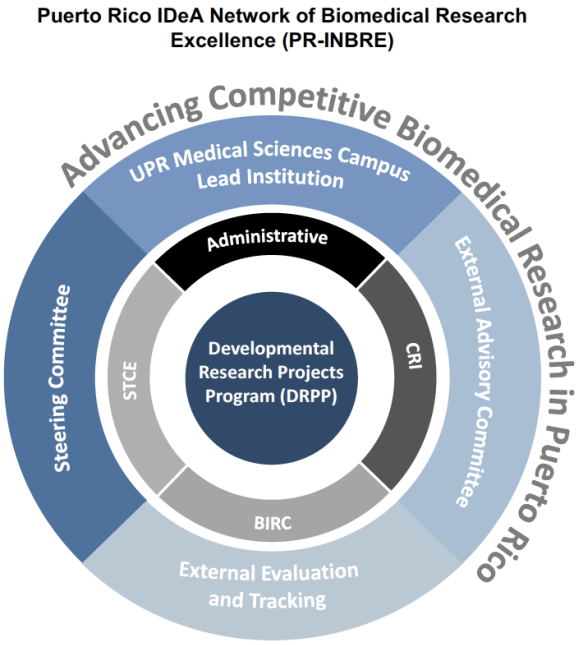
Grace Vélez, UCC

- Awards: 2022 AACR Minority Scholar in Cancer Research Award

CORES
ADM, CRI & 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-MSC, 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-MSC, 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.

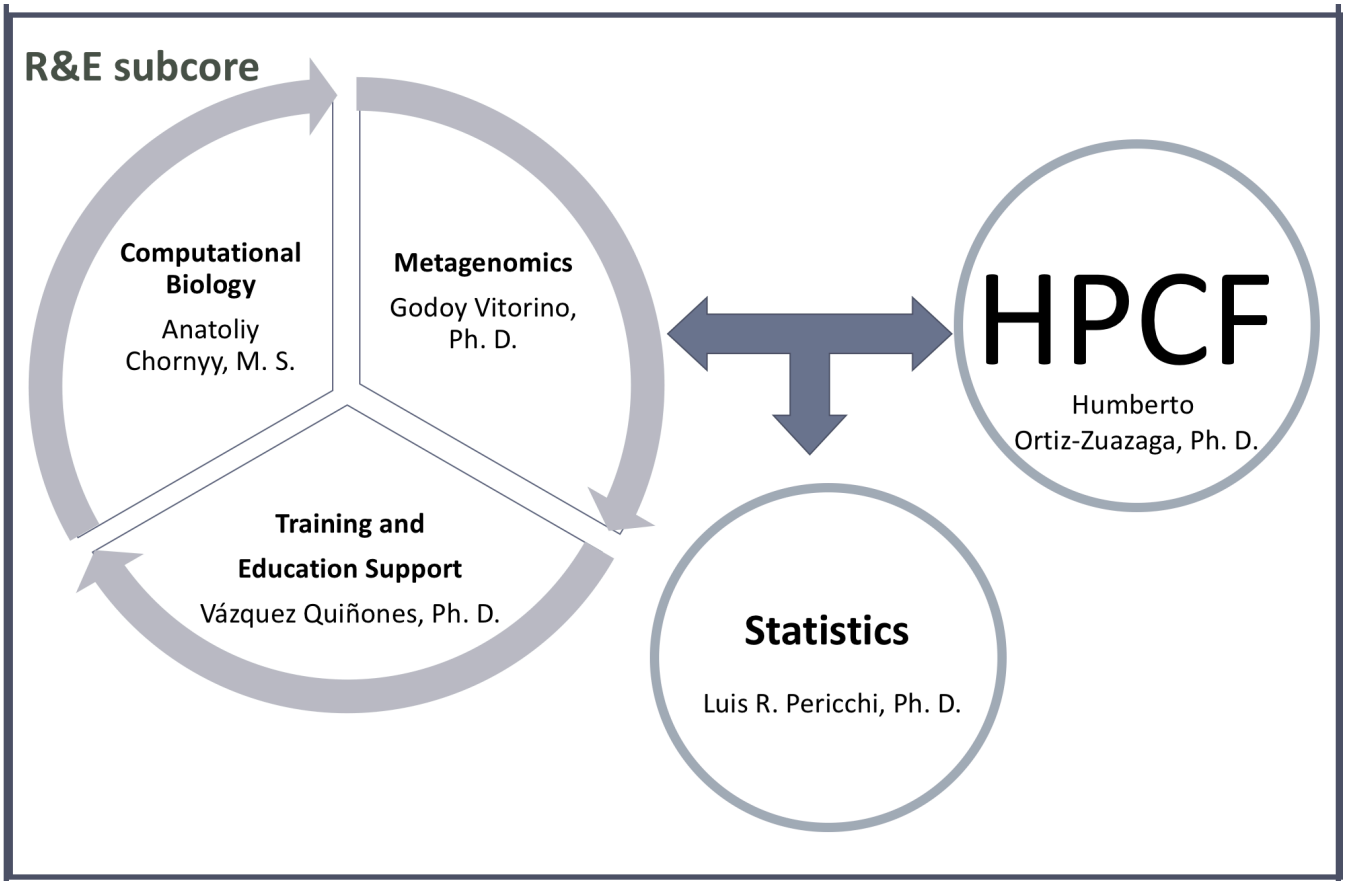
- **Translational Proteomics Center:** The main goal of the Center is to provide an integrated Proteomics platform for biomarker discovery and protein identification and to interface between basic and clinical research conducted in Puerto Rico for the diagnosis and therapeutic monitoring of human diseases. 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

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

10 Grants **awarded**

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

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

CORES NEW **PUBLICATIONS**

- BIRC Core
  1. Fernández-Félix TC, **Santana JA**. Atomic Structures of Single-Layer Nanoislands of Ni, Cu, Rh, Pd, Ag, Ir, Pt, Au Supported on Au(111) from Density Functional Theory Calculations. Surf Sci. 2022 Feb;716. doi: 10.1016/j.susc.2021.121960. Epub 2021 Oct 6. PubMed PMID: 34737461; PubMed Central **PMCID: PMC8562674**.
  2. Vázquez-Lizardi GA, Ruiz-Casanova LA, Cruz-Sánchez RM, **Santana JA**. Simulation of Metal-Supported Metal-Nanoislands: A Comparison of DFT Methods. Surf Sci. 2021 Oct;712. doi: 10.1016/j.susc.2021.121889. Epub 2021 Jun 10. PubMed PMID: 34176977; PubMed Central **PMCID: PMC8224827**.
  3. Reynoso-García J, Narganes-Storde Y, Santiago-Rodriguez TM, **Toranzos GA**. Mycobiome-Host Coevolution? The Mycobiome of Ancestral Human Populations Seems to Be Different and Less Diverse Than Those of Extant Native and Urban-Industrialized Populations. Microorganisms. 2022 Feb 16;10(2):459. doi: 10.3390/microorganisms10020459. PMID: 35208912; **PMCID: PMC8877467**.
  4. **Santana JA**, Meléndez-Rivera J. Hydrogen Adsorption on Au-Supported Pt and Pd Nanoislands: A Computational Study of Hydrogen Coverage Effects. J Phys Chem C Nanomater Interfaces. 2021 Mar 11;125(9):5110-5115. doi: 10.1021/acs.jpcc.0c11566. Epub 2021 Mar 1. PubMed PMID: 34178204; PubMed Central **PMCID: PMC8225257**.
  5. Vélez-Torres LN, Bolaños-Rosero B, **Godoy-Vitorino F**, Rivera-Mariani FE, Maestre JP, Kinney K, Cavallin H. Hurricane María drives increased indoor proliferation of filamentous fungi in San Juan, Puerto Rico: a two-year culture-based approach. PeerJ. 2022 Mar 3;10:e12730. doi: 10.7717/peerj.12730. PMID: 35261816; **PMCID: PMC8898552**.

- BIRC & CRI Core
  1. Anqueira-González A, Acevedo-González JP, Montes-Mercado A, Irizarry-Hernández C, Fuenzalida-Uribe NL, Ghezzi A. Transcriptional Correlates of Chronic Alcohol Neuroadaptation in Drosophila Larvae. Front Behav Neurosci. 2021 Nov 4;15:768694. doi: 10.3389/fnbeh.2021.768694. PMID: 34803626; **PMCID: PMC8599819**.
  2. Rodríguez-Barreras R, Tosado-Rodríguez EL, Godoy-Vitorino F. Trophic niches reflect compositional differences in microbiota among Caribbean sea urchins. PeerJ. 2021 Aug 31;9:e12084. doi: 10.7717/peerj.12084. PMID: 34540373; **PMCID: PMC8415288**.

- BIRC & ADM Core
  1. **Rolón-Martínez S**, Habib MR, Mansour TA, Díaz-Ríos M, Rosenthal JJC, Zhou XN, Croll RP, **Miller MW.** FMRF-NH2 -related neuropeptides in Biomphalaria spp., intermediate hosts for schistosomiasis: Precursor organization and immunohistochemical localization. J Comp Neurol. 2021 Sep;529(13):3336-3358. doi: 10.1002/cne.25195. Epub 2021 Jun 11. PubMed PMID: 34041754; PubMed Central **PMCID: PMC8273141**.

CONT. CORE NEW **PUBLICATIONS**

- CRI Core
  1. Rosario-Rodríguez LJ, Gerena Y, García-Requena LA, Cartagena-Isern LJ, Cuadrado-Ruiz JC, Borges-Vélez G, **Meléndez LM**. Cannabinoid receptor type 2 agonist JWH-133 decreases cathepsin B secretion and neurotoxicity from HIV-infected macrophages. Sci Rep. 2022 Jan 7;12(1):233. doi: 10.1038/s41598-021-03896-3. PubMed PMID: 34996989; PubMed Central **PMCID: PMC8741953**.
  2. Van Belleghem SM, Cole JM, Montejo-Kovacevich G, Bacquet CN, McMillan WO, **Papa R**, Counterman BA. Selection and isolation define a heterogeneous divergence landscape between hybridizing Heliconius butterflies. Evolution. 2021 Sep;75(9):2251-2268. doi: 10.1111/evo.14272. Epub 2021 Jun 6. PubMed PMID: 34019308; PubMed Central **PMCID: PMC8454027**.
  3. Borges-Vélez G, Rosado-Philippi J, Cantres-Rosario YM, Carrasquillo-Carrion K, Roche-Lima A, Pérez-Vargas J, González-Martínez A, Correa-Rivas MS, **Meléndez LM**. Zika virus infection of the placenta alters extracellular matrix proteome. J Mol Histol. 2021 Jul 15;. doi: 10.1007/s10735-021-09994-w. [Epub ahead of print] PubMed PMID: 34264436; PubMed Central **PMCID: PMC8760362**.
  4. Carrasquillo G, Pinet-Velez N, Velez C, **Zayas, B.** et al. 2021;9(5):219-225. DOI: 10.15406/ppij.2021.09.00348. Cell death induction of dibutyl phthalate (DBP) on primary brain cells from adult zebrafish. Pharm & Pharmacology Int J. 2021;9(5):219-225. DOI: 10.15406/ppij.2021.09.00348. **[Not in PMC]**
  5. Rodríguez-Graciani KM, Chapa-Dubocq XR, Ayala-Arroyo EJ, Chaves-Negrón I, Jang S, **Chorna N**, S Maskrey T, Wipf P, Javadov S. Effects of Ferroptosis on the Metabolome in Cardiac Cells: The Role of Glutaminolysis. Antioxidants (Basel). 2022 Jan 29;11(2):278. doi: 10.3390/antiox11020278. PMID: 35204160; **PMCID: PMC8868370**.
  6. Rabelo-Fernández RJ, Santiago-Sánchez GS, Sharma RK, Roche-Lima A, Carrion KC, Rivera RAN, Quiñones-Díaz BI, Rajasekaran S, Siddiqui J, Miles W, Rivera YS, Valiyeva F, Vivas-Mejia PE. Reduced RBPMS Levels Promote Cell Proliferation and Decrease Cisplatin Sensitivity in Ovarian Cancer Cells. Int J Mol Sci. 2022 Jan 4;23(1):535. doi: 10.3390/ijms23010535. PMID: 35008958; **PMCID: PMC8745614**.
  7. Zenón-Meléndez CN, Carrasquillo Carrión K, Cantres Rosario Y, Roche Lima A, **Meléndez LM**. Inhibition of Cathepsin B and SAPC Secreted by HIV-Infected Macrophages Reverses Common and Unique Apoptosis Pathways. J Proteome Res. 2022 Feb 4;21(2):301-312. doi: 10.1021/acs.jproteome.1c00187. Epub 2022 Jan 7. PMID: 34994563. **PMCID: PMC9169015.**

- DRPP Core
  1. Díaz-Ayala R, López-Nieves M, Colón Berlingeri ES, Cabrera CR, **Cunci L,** González CI, Escobar PF. Test Strip Platform Spin-Off for Telomerase Activity Detection: Development of an Electrochemical Biosensor. ACS Omega. 2022 Mar 9;7(11):9964-9972. doi: 10.1021/acsomega.2c00713. PMID: 35356692; **PMCID: PMC8944542**.

CONT. CORE NEW **PUBLICATIONS**

- cont. DRPP Core

2. **Appleyard, Caroline B.**, et al. "Voluntary Wheel Running Reduces Vesicle Development in an Endometriosis Animal Model through Modulation of Immune Parameters." Frontiers in Reproductive Health, vol. 3, 26 Jan. 2022, 10.3389/frph.2021.826541. **[Not in PMC]**
3. Marrero-Cristobal G, Gelpi-Dominguez U, Morales-Silva R, Alvarado-Torres J, Perez-Torres J, Perez-Perez Y, **Sepulveda-Orengo M.** Aerobic exercise as a promising nonpharmacological therapy for the treatment of substance use disorders. J Neurosci Res. 2021 Dec 1;. doi: 10.1002/jnr.24990. [Epub ahead of print] Review. PubMed PMID: 34850988; **PMCID: PMC9156662**.
4. Cruz-Collazo A, Ruiz-Calderon JF, Picon H, Borrero-Garcia LD, Lopez I, **Castillo-Pichardo L**, Del Mar Maldonado M, Duconge J, Medina JI, Bayro MJ, Hernández-O'Farrill E, Vlaar CP, **Dharmawardhane S**. Efficacy of Rac and Cdc42 Inhibitor MBQ-167 in Triple-negative Breast Cancer. Mol Cancer Ther. 2021 Dec;20(12):2420-2432. doi: 10.1158/1535-7163.MCT-21-0348. Epub 2021 Oct 4. PubMed PMID: 34607932; PubMed Central **PMCID: PMC8643341**.

- DRPP , BIRC & STCE Core

1. Lacourt-Ventura MY, **Vilanova-Cuevas B**, Rivera-Rodríguez D, Rosario-Acevedo R, Miranda C, Maldonado-Martínez G, Maysonet J, Vargas D, Ruiz Y, Hunter-Mellado R, Cubano LA, **Dharmawardhane S**, Lampe JW, Baerga-Ortiz A, **Godoy-Vitorino F, Martínez-Montemayor MM**. Soy and Frequent Dairy Consumption with Subsequent Equol Production Reveals Decreased Gut Health in a Cohort of Healthy Puerto Rican Women. Int J Environ Res Public Health. 2021 Aug 4;18(16). doi: 10.3390/ijerph18168254. PubMed PMID: 34444002; PubMed Central **PMCID: PMC8391519**.

- STCE

1. **Jailenne I. Quiñones-Rodríguez***, Valeria Lozada-Miranda, Natalia del Mazo-Arbona, and Martin Rosario. (2022) Case Report: Unilateral Double Subscapular Artery: A Case Report. Journal of Clinical and Diagnostic Research. 2022 Apr, Vol-16(4): AD01-AD03. DOI: 10.7860/JCDR/2022/52633.16183 **[Not in PMC]**
2. **Jailenne I Quiñones-Rodríguez** et al., (2022) Unusual Innervation to the Gluteus Maximus and it's Clinical Implications. Journal of Clinical and Diagnostic Research. 2022 May, Vol-16(5): AD01-AD03 **[Not in PMC]**

- STCE (JRA alumni) & ADM Core

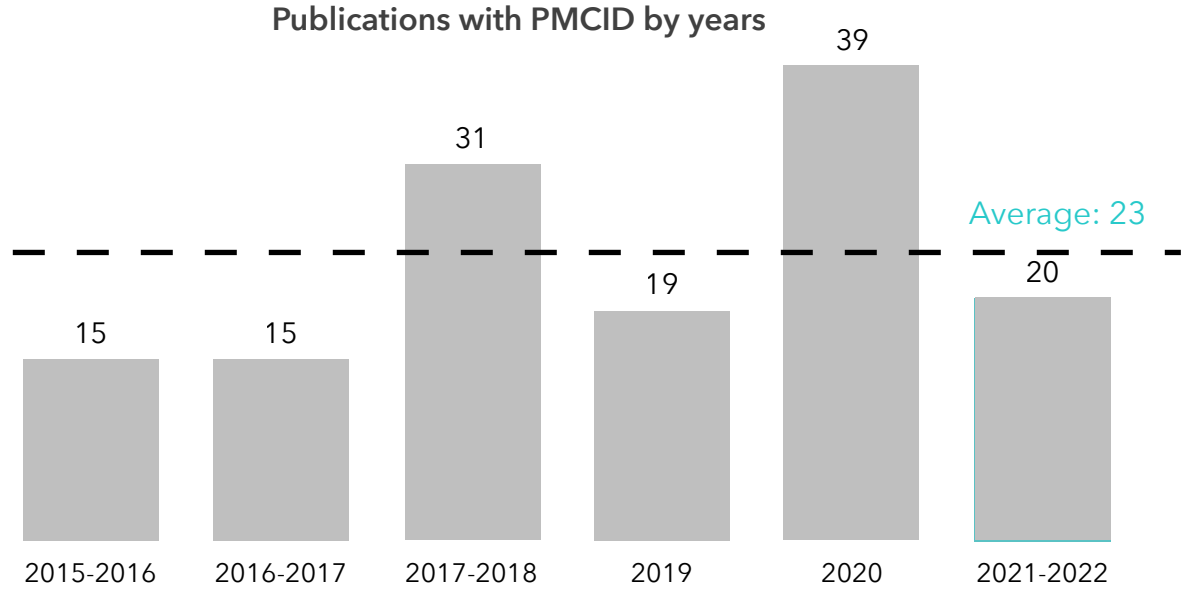
1. Frankenfield K, **Marchany-Rivera D**, Flanders KG, Cruz-Balberdy A, **Lopez-Garriga J**, Cerda JF. Fluoride binding to characteristic heme-pocket centers: Insights into ligand stability. J Inorg Biochem. 2021 Nov;224:111578. doi: 10.1016/j.jinorgbio.2021.111578. Epub 2021 Aug 17. PubMed PMID: 34481348; PubMed Central **PMCID: PMC8463504**.
2. Gaur K, **Pérez Otero SC,** Benjamín-Rivera JA, Rodríguez I, Loza-Rosas SA, Vázquez Salgado AM, Akam EA, Hernández-Matias L, Sharma RK, Alicea N, Kowaleff M, **Washington AV**, Astashkin AV, Tomat E, Tinoco AD. Iron Chelator Transmetalative Approach to Inhibit Human Ribonucleotide Reductase. JACS Au. 2021 Jun 28;1(6):865-878. doi: 10.1021/jacsau.1c00078. Epub 2021 May 25. PMID: 34240081; **PMCID: PMC8243325.**

CONT. CORE NEW **PUBLICATIONS**

- Total Publications: 24
  - 20 Publications with acknowledgment & PMCID
  - 4 Publications without PMCID (not submitted in PMC)

- Distribution by Cores

CORES	Total Publications	Publications with PMCID#
DRPP	4	3
DRPP + BIRC + STCE	1	1
STCE	2	0
STCE + ADM	2	2
CRI	7	6
BiRC	5	5
BiRC + CRI	2	2
BiRC + ADM	1	1
Total	**24**	**20**



*2017-2018 (Hurricane Maria, 1.6 months)

**2020-2021 (Carryover, 1.6 months)

NEW **GRANTS**

GRANTS SUBMITTED

- Total proposal: 15
- Cores: 1DRPP Investigator, 14 CRI Core
- Source of Grants:
  - 93% NIH proposal
  - 7% NSF proposal
- Type of Proposals: 1 T32, 1R01, 2R15, 2R21, 1R25, 1 U54, 1U54 (Pilot), 1K22, 1K00, 1F99

GRANTS SUBMITTED

DRPP Investigator (active)

Investigator	Role	Agency	Type	Proposal Tittle	STATUS July, 2022
Iris Salgado (Pilot Project)	PI	NIH-National Institute of Allergy and Infectious Diseases (NIAID)	R16	Initial Pre-Clinical Studies of Novel influenza-A antivirals	Not granted. Expected to be resubmitted on September, 2022

CRI Core

NIH Proposals: 1 T32, 1R01, 2R15, 2R21, 1R25, 1 U54, 1U54 (Pilot), 1K22, 1K00, 1F99, 1Not specified

T32

G-RISE at the University of Puerto Rico Medical Sciences Campus

Carmen Cadilla, PI

R01

Genotypic and phenotypic host determinants associated to PASC and the nervous system

Loyda Méndez, PI

R15

Neuronal mechanisms of alcohol-induced sleep disruption in Drosophila

Ricardo Papa, PI

NEW **GRANTS**

GRANTS SUBMITTED

Cont. CRI Core

NIH Proposals

R15

A Roadmap for intestinal regeneration

Ricardo Papa, PI

R21

Impact of environmental enrichment on modulation of age-related imbalance of serotonin and dopamine in the rat brain by the gut microbiota

Ricardo Papa, CoPI

R21

Astrocyte-derived exosomes contribute to HIV neuropathogenesis

Nataliya Chorna, Consultant

R25

Increasing diversity in genomics for the next generation

Ricardo Papa, PI

U54

Research Capacity Building-

RCMI Translational Proteomics Center

Loyda Méndez, Co-Leader

U-54 (Alliance Pillot)

The Opioid Crisis in Puerto Rico: Behavioral, Molecular and Translational Approaches

Loyda Méndez, Consultant

K22

Disrupted Innate Immunity Responses In Monocytes: Contribution To Neurodegeneration

Loyda Méndez (Post-doc)

F99 & K00

Loyda Méndez (Graduate students)

NeuroGRAD@UPR- Neuroscience Graduate, Resilience, Affirmation and Diversity Program at the University of Puerto Rico

Ricardo Papa, CoPI

National Science Foundation (NSF)

RaMP: Research and Mentoring for Postbaccalaureates in Biological Sciences at the University of Puerto Rico

Ricardo Papa, PI

CONT. NEW **GRANTS**

GRANTS AWARDED

- Total grants: 10
- Cores: 5 DRPP Investigator, 4 CRI Core, 1 STCE Core
- Source of Grants:
  - 60% NIH grants
  - 20% Institutional Funds
  - 20% Other source
- Type of Grants: 1R21, 1R16, 1T32, 2SC2, 1SC1, U01

1 **DRPP Investigator** (Active)

R21, 1R21MH129037-01 9/21/2021- 8/31/2023

Development and Validation of an NPY-sensitive Microelectrode for Measuring NPY Release from Hippocampus

Lisandro Cunci, PI

4 **DRPP Investigator** (Graduates)

R16, 1R16GM145488-01 4/15/2022-3/31/2026

Validating the mode of action of ergosterol peroxide as a selective breast cancer inhibitor

Michelle Martínez, PI

T32, 1T32GM144896-01 05/01/2022-4/30/2027

G-RISE at Ponce Health Sciences University

Caroline Appleyard, PI

SC2, 1SC2GM141720-01 07/01/2021-06/30/2024

SCAMP3 as a regulator of EGFR/STAT3 axis in triple-negative breast cancer

Ivette Suárez, PI

SC2, 1SC2NS124907-01 8/1/2021-7/31/2024

Hippocampal astrocytic Kir4.1 channel function in Type 2 diabetic mice: impact on neuronal hyperexcitability

David Rivera Aponte, Co-PI Miguel Méndez, PI

CONT. NEW **GRANTS**

STCE Core (Coordinator)

U01, 1U01MD017426-01 01/01/2022- 11/30/2023

Development and Validation of an NPY-sensitive Microelectrode for Measuring NPY Release Puerto Rico Community Action Research and Engagement (PR-CARE) to Eliminate Disparities in Diagnostic of COVID-19 among Rural Underserved and Vulnerable Populations.

Edna Acosta, CoPI Marcia Cruz, PI

CRI Core

SC1, SC1GM139706 07/01/2021 to 06/20/2025

Mechanisms of TWIST bHLH Transcription Factors Binding to Functional Target Regions

Carmen Cadilla, PI

U54, Administrative Suplement 07/01/2021- 06/30/2022

Association of Alzheimer's with gut microbiota in Puerto Rican

Nataliya Chorna, Investigator

Institutional Funds 05/01/2021 - 10/30/2022

Effects of running exercise on the regulation of tryptophan metabolism along the microbiota-gut-brain axis

Nataliya Chorna, PI

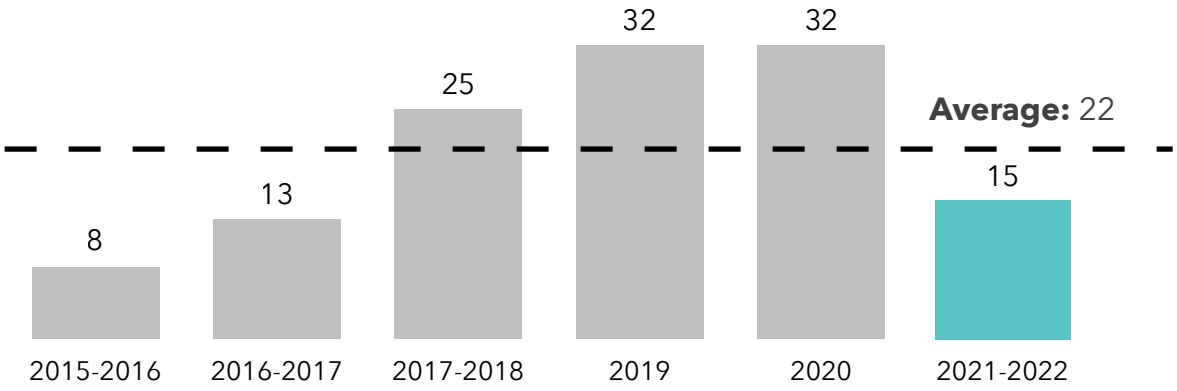
Puerto Rico Science Trust 09/01/2021-08/31/2023

Determine the effect of Tamoxifen in metabolite production and Muscle Physiology after spinal cord injury in male and female rats

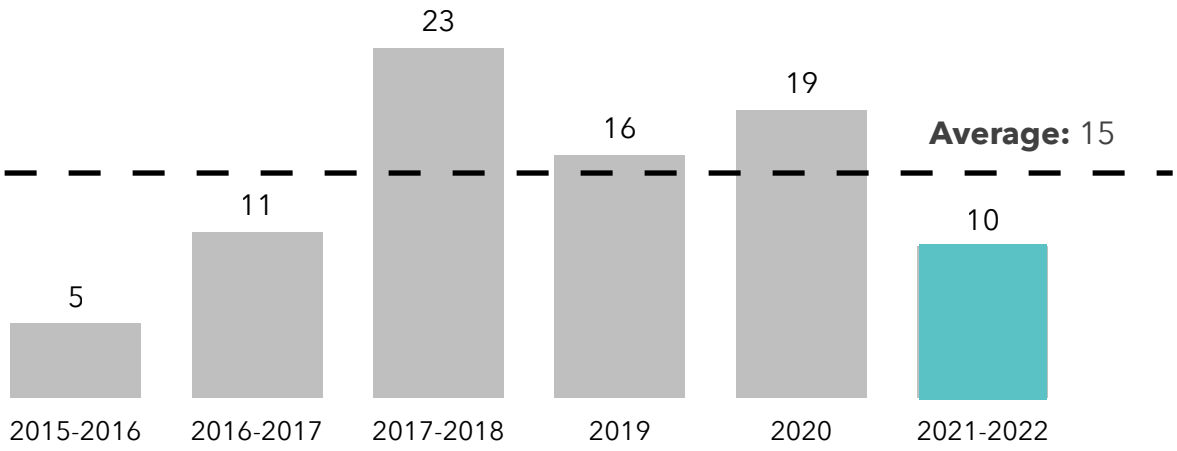
Nataliya Chorna, Consultant

CONT. NEW **GRANTS**

Grants submitted by years



Grants awarded by years



*2017-2018 (Hurricane Maria, 1.6 months)

**2020-2021 (Carryover, 1.6 months)

NEW **PRESENTATIONS**

PRESENTATIONS

26 Oral Presentations

- 8 STCE Core, 7 BiRC Core, 11 CRI Core
- 84% In person, 8% Virtual, 8% Data not available

	Citation	Type	Core
1	Nataliya Chorna Multi-omics approaches in health and disease. **Southeast Regional IDeA Conference**.San Juan, PR November 12-14, 2021 (Keynote speaker)	In-person	CRI
2	Nataliya Chorna Multi-omics approaches in health and disease. **24th Annual Basic Sciences Research Symposium**, Loma Linda University, online November 4, 2021 (Keynote speaker)	In-person	CRI
3	Díaz Burgos, A.; Rivera, A.; Rios, K.; & Zayas, B. Toxicity Effects of Lead (Pb) and Mercury (Hg) on Zebrafish Brain Cells. Presented at the **PRCEN Monthly meeting** (Virtual) by Zoom February 23, 2022	Virtual	CRI
4	Vivir Con Salud. COVID-19 Delta variant. **Interview with Luz Nereida Velez Noti Uno**. August 9, 2021. https://www.revistavida.net/a-mantener-la-guardia-contra-la-variante-delta/	In-person	CRI
5	Radio Interview on COVID-19 Variants. **Las mañanas con Joel**: August 9, 2021. https://www.facebook.com/lasmananasconjoelrivera/videos/1496917273976739/	In-person	CRI
6	Press Interview: Tercera Dosis contra el Coronavirus?. **Revista Buena Vida.** August 25, 2021. https://www.revistavida.net/tercera-dosis-contra-el-coronavirus-2/	In-person	CRI
7	TV Panelist in **Jugando Pelota Dura**: COVID-19 vaccine and the Pandemia. Channel 11. August 6, 13, and 27. https://youtu.be/hKRBhVauwas	In-person	CRI
8	Meléndez LM, Cantres Rosario Y, Rodríguez de Jesús A, Carrasquillo K, Méndez L, Roche-Lima A, Cadilla C, Irizarry C, Cartagena-Isern L, Casiano D, Beltrán J. Proteomics and cytokine analysis of Host factors associated with COVID-19 disease severity in Puerto Rico. **42nd Annual Research and Education Forum**. March 30-April 1,2022	In-person	CRI
9	Meléndez LM, Cantres Rosario Y, Rodríguez de Jesús A, Carrasquillo K, Méndez L, Roche-Lima A, Cantres-Rosario Y, Rosario-Rodríguez L, Rivera-Nieves V, Beltrán J. Proteomics and cytokine analysis of Host factors associated with COVID-19 disease severity in Puerto Rico. **SNIP Annual Meeting,** June 1-3, 2022.	In-person	CRI
10	Rosario-Rodríguez LJ; Gerena Y; Cantres-Rosario Y; Carrasquillo-Carrión K, Cartagena-Isern LJ, García-Requena LA; Cuadrado-Ruiz JC, Rodríguez-De Jesús AE, Borges-Vélez G, Roche-Lima A, and Meléndez LM. CB2R Agonist JWH-133 Decreases CATB Secretion and Neurotoxicity from HIV-Infected Macrophages by Attenuating NF-κB Activation, Oxidative Stress, and Lysosomal Exocytosis. **SNIP Meeting**. Memphis, Tennessee. June 1-3, 2022.	In-person	CRI
11	Rivera-Escobales Y. Effects of single prolonged stress on the rat infra limbic cortex proteome. **Neuroscience**, October, 2021.	In-person	CRI

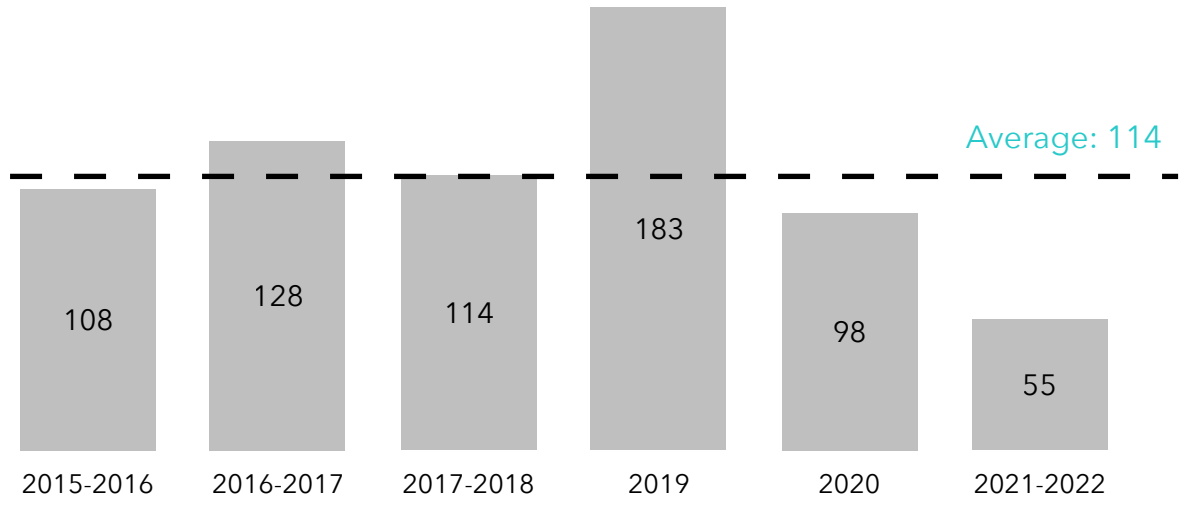
CONT. NEW **PRESENTATIONS**

	Citation	Type	Core
12	Álvarez-Vargas, F. (presenter), M. A. Villa, and C. Restrepo. 2021. Demand for ecosystem services in areas prone to landslides drive large-scale shifts in land-use in small mountainous watersheds in the tropics. **Ecological Society of America Annual Meeting**. August 6, 2021	In-person	BiRC
13	Ospina, L. (presenter), R. Bussman, P. Lozano, A. Hemp, P. R. Stevenson, C. Restrepo. 2021. Global patterns of plant taxonomic and functional diversity on landslides are modulated by climate. **Ecological Society of America Annual Meeting**.August 6, 2021	In-person	BiRC
14	García-Arrarás, José E. Nervous system regeneration: Basic science studies with a novel model system. **The International Online Spinal Cord Injury Research Seminars**. Feb. 15 2022	Data not available	BiRC
15	Nervous system regeneration in echinoderms. Invited speaker- **Biology Department, Carnegie Mellon University**. March 23, 2022	Data not available	BiRC
16	García-Arrarás, José E. Intestinal regeneration in adult sea cucumbers; cellular events and signaling pathways. **DBSUOMI XXVI Annual Meeting, MBL, Woods Hole** April 5-9 2022	In-person	BiRC
17	Álvarez-Vargas, F. (presenter), M. A. Villa, and C. Restrepo. 2021. Demand for ecosystem services in areas prone to landslides drive large-scale shifts in land-use in small mountainous watersheds in the tropics. **Ecological Society of America Annual Meeting**. August 6, 2021	In-person	BiRC
18	Ospina, L. (presenter), R. Bussman, P. Lozano, A. Hemp, P. R. Stevenson, C. Restrepo. 2021. Global patterns of plant taxonomic and functional diversity on landslides are modulated by climate. **Ecological Society of America Annual Meeting**., August 6, 2021	In-person	BiRC
19	Jailenne I. Quiñones-Rodríguez (2021) Glyoxal a nontoxic substitute to achieve superior preservation for modern electron microscopy. **Fundación Garcia Rinaldi. Universidad Central del Caribe.**	In-person	STCE
20	Elliott Rodríguez López, PhDc, Richard Noel, Ph.D., Thibault Mespléde, Ph.D., James Porter, Ph.D., Griselle Tirado, Ph.D., Vanessa Rivera-Amill, Ph.D., "Effect of HIV-1 Integrase Polymorphisms on DNA-Protein Interactions and Integrase Inhibitors Efficacy" at the **Ponce Health Sciences University Data Blitz** (2021) September 24, 2021	In-person	STCE
21	Santos-Velázquez, L; López-Garriga, J. Fluorescence Spectroscopy as a Novel Method for Sulfhemoglobin Detection. **American Chemical Society Local Section**, Puerto Rico, November 6, 2021.	In-person	STCE
22	Vélez, GE; Vlaar, C; Hernández, A; Castillo-Pichardo, L; Dharmawardhane, S; Kucheryavykh, L. HV-107 and HV-118 as potential therapeutics for triple negative metastatic breast cancer **. Graduate Student Research Seminar**,UCC, Bayamón, PR. December 6, 2021.	In-person	STCE

CONT. NEW **PRESENTATIONS**

	Citation	Type	Core
23	Ortiz-Rivera, J. Dynamics of microglial activation and expression of cytokines in the site of glioblastoma tumor resection. R**esearch Seminar, UCC-School of Medicine**, P.R, 7 de Febrero, 2022	In-person	STCE
24	Laboy-Torres, E. The Structure of the Mutant Sod1-G92A Protein Related to ALS in Yeast Model. **BBB Zeta-Delta Chapter research presentation**, Zoom, February 4, 2022.	Virtual	STCE
25	Medina, N.; Matos, K; Cruz, J. Coversatorio: Los Estudiantes Hablan: Aprendizaje Remoto Durante la Pandemia. **68va Covencion Annual- APPR Psicologia como Vinculo y Conexion.**, San Juan, Puerto Rico, Noviembre 5, 2021	In-person	STCE
26	Medina Santiago, N. G., Matos, K., Cruz Torres, J. (November 5, 2021). Conversatorio: Los estudiantes hablan: Aprendizaje remoto durante la pandemia. **68th Puerto Rico Psychology Asociation Virtual Convention**	In-person	STCE

Presentations (oral and poster) by years



*2017-2018 (Hurricane Maria, 1.6 months)

**2020-2021 (Carryover, 1.6 months)

CONT. NEW **PRESENTATIONS**

29 Poster Presentations

- 2 DRPP Investigators
- 10 STCE Core (students)
- 14 CRI Core
- 3 BiRC Core
- 17% virtual, 21% Mainland and 62% Local

	Citation	Core	Place
1	IK. Salgado, AO. Díaz-Quiñones, N. Mayol, MT. González, WI. Silva, and H.M. Maldonado. Characterization of lead compounds with significant influenza antiviral activity. **Southeast Regional IDeA Conference** 2021, Royal Sonesta Resort, in San Juan, PR, November 12 – 14, 2021	DRPP	Local
2	Yaliz Loperena-Álvarez, Rodney Colón-Reyes and Lukazs Kozobowski. Macrophage Conditioned Media Induces Titanization in the Cryptotococcus neoformans/gattii complex. **SE-IDeA conferences**, San Juan PR, November 12-14, 2021	DRPP	Local
3	Jailenne I. Quiñones-Rodríguez and Thomas Schikorski (2021) The First Non-Cancerogenic Fixative for Modern Chemical Fixation in Electron and Light Microscopy. Puerto Rico **Southeast IDeA Regional Meeting.** San Juan, PR. November 13, 2021	STCE	Local
4	Jailenne I. Quiñones-Rodríguez and Thomas Schikorski (2021) Glyoxal modern fixation for light and electron microscopy. **Puerto Rico Neuroscience Meeting**. San Juan, PR. December 4, 2021	STCE	Local
5	Elliott Rodríguez López, PhDc, Richard Noel, Ph.D., Thibault Mespléde, Ph.D., Vanessa Rivera-Amill, Ph.D., "Effect of HIV-1 Integrase Polymorphisms on DNA-Protein Interactions and Integrase Inhibitors Efficacy" at **2021 Southeast Regional IDeA Conference.** November 13, 2021	STCE	Local
6	Santos-Velázquez, L; López-Garriga, J. Fluorescence Spectroscopy as a Novel Method for Sulfhemoglobin Detection. **2021 Southeast Regional IDeA Conference**, San Juan,Puerto Rico, November 13,2021.	STCE	Local
7	Vélez, GE; Vlaar, C; Hernández, A; Castillo-Pichardo, L; Dharmawardhane, S; Kucheryavykh, L. HV-107 and HV-118 as potential therapeutics for triple negative metastatic breast cancer . **3rd Forward Research and Innovation Summit,** San Juan,PR. December 10, 2021.	STCE	Local
8	Ortiz-Rivera J, Albors, A, Kucheryavykh, K. Dynamics of microglial activation and expression of cytokines in the site of glioblastoma tumor resection. **29th P.R Neuroscience**, Universidad Interamericana P.R, 2021.4 de Diciembre, 2021	STCE	Local
9	Ortiz-Rivera J, Albors, A, Kucheryavykh, K. Dynamics of microglial activation and expression of cytokines in the site of glioblastoma tumor resection. **Forward Research and Innovation**. Online, 2021. 10 de Diciembre, 2021	STCE	Local
10	Pagán-Torres, N. A.; Rosa, H. J.; Menéndez, D.L.; Casillas, K. M.; Méndez, L.B. Diesel Exhaust Particles Induced Inflammatory Responses are Associated with Executive Functions Deficits in Juvenile Mice. I**mmunology 2022,** Portland, Oregon, May 6th, 2022	STCE	Mainland

CONT. NEW **PRESENTATIONS**

	Citation	Core
11	Matos, K. (November 11, 2021) Reliability of the Spanish version of the Cognitive Assessment System 2nd Edition: Rating Scale (CAS2:RS). **Annual Biomedical Research Conference for Minority Students** (ABRCMS) Virtual.	Virtual
12	Matos, K. (November 13, 2021) Reliability of the Spanish version of the Cognitive Assessment System 2nd Edition: Rating Scale (CAS2:RS). **Southeast Regional IDeA Conference** (SEIDeA), San Juan, Puerto Rico	Local
13	Serrano González J, IMontes Rodríguez IM, Renta JY, Rojas R and Cadilla CL (2021) Genetic Testing of a Puerto Rican Family with Oculocutaneous Albinism Revealed a Misdiagnosis of Hermansky-Pudlak Syndrome. Poster Presentation in **2021 Southeast Regional IDEA Conference**, San Juan PR, November 11-13, 2021.	Local
14	Torres-Bracero A, Crespo-Hernández N, Cadilla CL (2021) Assessing DNA Binding Activity of Transcription Factor TWIST1 Basic Domain Mutants. Poster Presentation in **2021 Southeast Regional IDEA Conference**, San Juan PR, November 12-14, 2021.	Local
15	García-Amado M.; Rudolf C.; Fuentes-Fuentes M.; Martínez M.;, Chorna N.; Godoy-Vitorino F. Caracterización taxonómica y funcional de la microbiota del tracto digestivo del Aruco (Anhima cornuta), un ave herbívora. **Virtual Congress of the Venezuelan Union of Ornithologists,** On-line, December 13 -15, 2021	Virtual
16	Marini, F.; Rodriguez N.;Angeli R.; Caussade G.; Ayuso K.; Vazquez A.;Chorna N. Metabolic Reprogramming of the Serine-Glycine-One-Carbon Biosynthetic Pathway as a possible target for neuroblastoma therapy. **Annual PR Neuroscience Meeting,** INTER-Bayamon, Bayamon, December 4, 2021	Local
17	Pérez D.; Ruíz-Díaz C.; Meléndez N.; Chorna N.; Toledo-Hernández C.; Godoy-Vitorino F. Differences in the phyllosphere microbiota between invasive and native seagrasses in the Caribbean ISME18: **18th International Symposium on Microbial Ecology,** Lausanne, Switzerland, August 19, 2022	Mainland
18	Montes A, Dasta-Cruz C, Ramos-Rodriguez L, Del Valle-Colon C, Kuchibhotla M, Agosto JL, Ghezzi A. The role of histone acetyltransferase activity in alcohol-induced neuroadaptations. Poster presented at the Society for Neuroscience, **Neuroscience 2021;** Online; Nov 3-7, 2021.	Local
19	Kuchibhotla M. Montes A, Ortiz-Elias EW, Rodríguez JA, Agosto JL, Ghezzi A. Pumilio -a translational regulator- as a modulator of alcohol tolerance via macrophages. Poster presented at the Society for Neuroscience, **Neuroscience 2021**; Online; Nov 3-7, 2021.	Virtual
20	Melvyn E. Acosta-Montalvo, Melanie Carrión-Laureano1, Xavier Bittman-Soto, Esther Peterson-Peguero, and Josué Pérez-Santiago. Inhibition of GPR30 Reveals Putative Genes Involved in the Pathogenesis of Inflammatory Breast Cancer. Poster will be presented at **Association for Clinical and Translational Science annual meeting** en abril 20-22, 2022, Chicago.	Mainland
21	Steven M. Van Belleghem, Angelo Ruggieri, Carolina Concha, Luca Livraghi, Laura Hebberecht, Ian Warren, Owen W. McMillan, Brian Counterman, Chris Jiggins, and Riccardo Papa. Surprising evolutionary flexibility of chromatin remodeling links mutations to developmental switches. **2021 Southeast Regional IDeA Conference** November 12-14, 2021, San Juan, Puerto Rico	Local

CONT. NEW **PRESENTATIONS**

	Citation	Core
22	Cora Huertas, L.; Van Belleghem, S.;Papa, R.; Muñoz-Jordan, J.L.; Santiago, G. Genomic surveillance of SARS-CoV-2 in Puerto Rico reveals emergence of an 2 autochthonous lineage and early detection of variants. Genomic surveillance of SARS-CoV-2 in Puerto Rico, March 2022.	Local
23	Hernández-Luciano GD, Rivera-Escobales Y, Carrasquillo-Carrión K, Cantres-Rosario YM, A. Rodríguez-De Jesús A, Castillo-Ocampoo Y, Suárez-Gómez C, Sambolín-Escobales L, M. Colón-Romero M, Roche-Lima A, Meléndez-Aponte LM, Porter J. Effects of single prolonged stress on the rat medial prefrontal cortex proteome. **PR Neuro Virtual Meeting**. December4, 2021	Virtual
24	Burgos, A.; Rivera, A.; Rios, K.; & Zayas, B. Toxicity Effects of Lead (Pb) and Mercury (Hg) on Zebrafish Brain Cells. Presented at the 2021 Southeast Regional IDeA, Presented at the **2021 Southeast Regional IDeA.** San Juan, Puerto Rico November 12-14, 2021.	Local
25	Aysha Díaz Burgos, Alejandra Rivera, Karoline Ríos, & Beatriz Zayas, PhD. Toxicity Effects of Lead (Pb) and Mercury (Hg) on Zebrafish Brain Cells.Presented at the **2022 61st SOT Annual Meeting and ToxExpo.** San Diego, California. Convention Center. March 27-31,2022	Mainland
26	Andy Acevedo-Roman, Karoline Ríos, Alejandra Nieves, Roland González, Aysha Diaz & Beatriz Zayas PhD. Cell Death Mechanisms of DEHP (Di-ethylhexyl phthalate) Exposure on Neural Cells from Zebrafish (Danio rerio).Presented at the **2022 61st SOT Annual Meeting and ToxExpo**. San Diego, California. Convention Center. March 27-31,2022	Mainland
27	Montes A, Dasta-Cruz C, Ramos-Rodriguez L, Del Valle-Colon C, Kuchibhotla M, Agosto JL, Ghezzi A. The role of histone acetyltransferase activity in alcohol-induced neuroadaptations. Poster presented at the Society for Neuroscience, **Neuroscience 2021**; Online; Nov 3-7, 2021.	Virtual
28	Miranda-Negrón, Yamil, Quesada-Díaz, Eduardo, Figueroa-Delgado, Paola, Castro-Ruíz, Christian, Garcia-Arraras, Jose E. Establishing effective parameters for electroporation of echinoderm nerve cord explants. **29th Annual Puerto Rico Neuroscience Conference**. Dec. 4, 2021UPR-RCM	Local
29	Miranda-Negrón, Yamil, Amanda Morales-Rivera, José E. García-Arrarás. Establishing Effective Parameters for Electroporation of Echinoderm Nerve Cord Explant. **DBSUOMI XXVI Annual Meeting**, MBL, Woods Hole April 2022.	Mainland

STUDENTS MENTORED BY CORES DIRECTORS & COORDINATORS

52 Undergraduate students were mentored by PR-INBRE Cores

- 39 students by CRI Core
- 9 students by DRPP Investigators
- 4 students by STCE Core (JRAs)

14 UG completed their B.S. degree in this period.

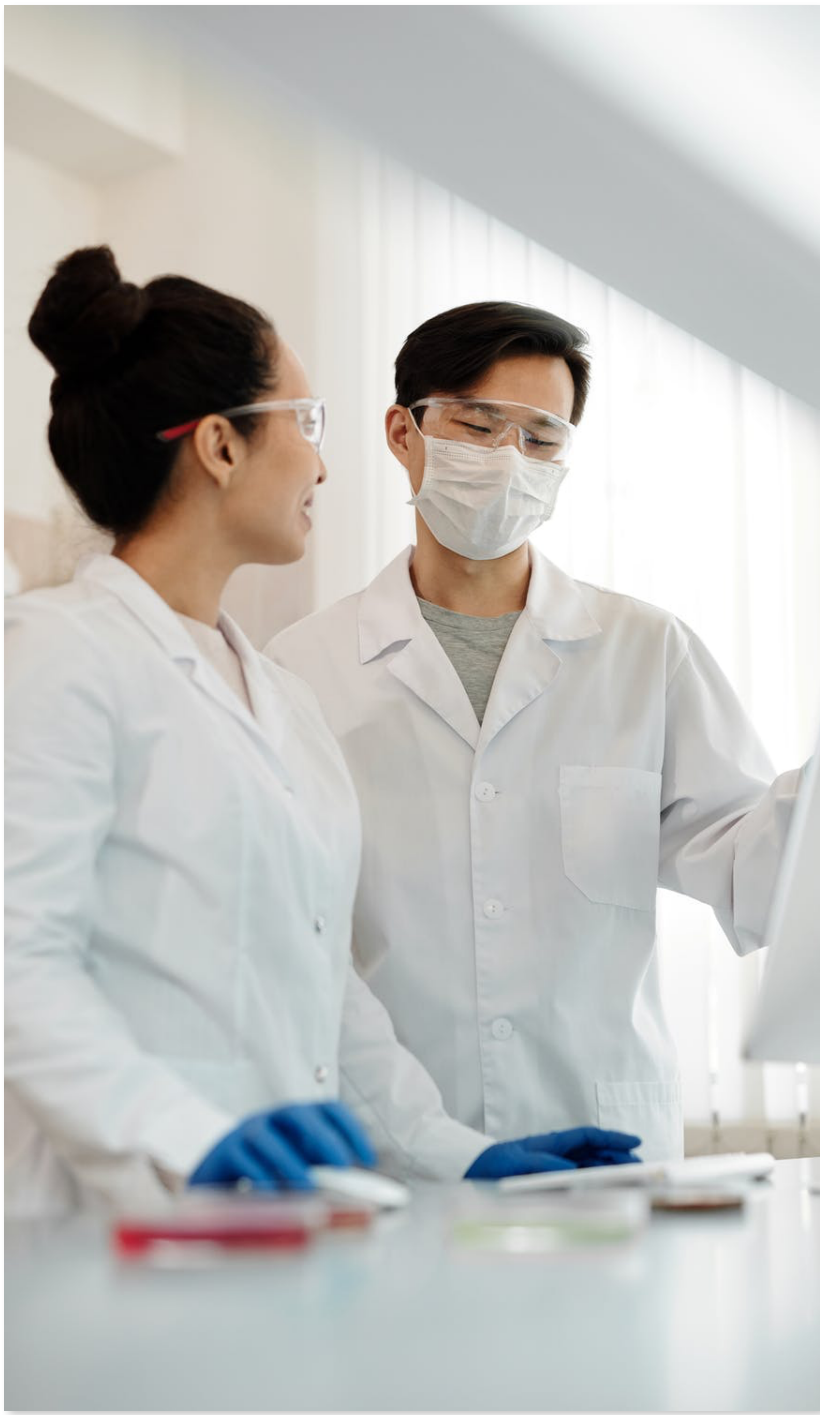
65 Graduate students were mentored by PR-INBRE Cores

- 18 M.S. student (2 DRPP, 14 CRI, 2 JRAs)
- 37 Ph.D. student (7 DRPP, 30 CRI, 6 JRAs)
- 4 M.D. student (3 DRPP, 1 CRI)

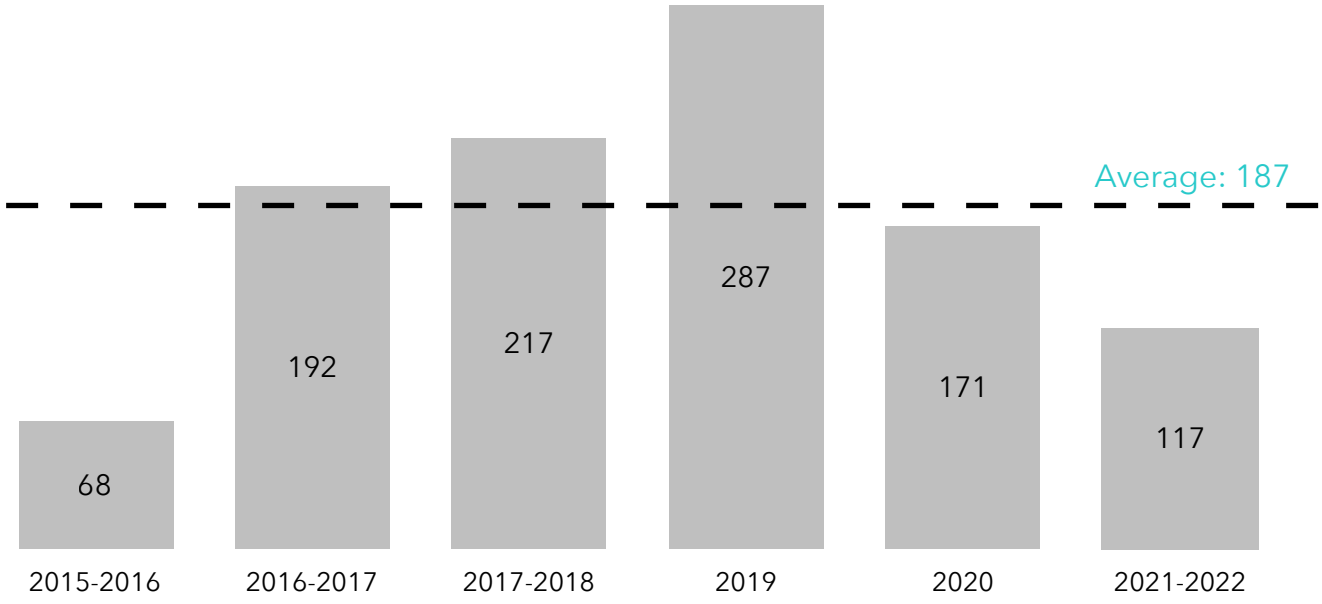
8 Graduates students completed their degree in this period (5 Ph.D., 1 M.S., 2MD)

117

Students mentored by PR-INBRE Cores



Students mentored by years (All CORES)



*2017-2018 (Hurricane Maria, 1.6 months)

**2020-2021 (Carryover, 1.6 months)

NEW EQUIPMENT ACQUIRED BY PR-INBRE

19 New Equipment acquired by PR-INBRE

DRPP Core

$536,096 in instrument support to nineteen projects in the PR-INBRE network.

	Investigator	Institution	Instrument	Cost
1	Luis Álamo	PCUPR	HPLC	25,000
2	Sonia Bailon	PCUPR	Centrifuge	25,000
3	Claribel Báez	UAGM	Synthesizer	25,513
4	Lisandro Cunci	UAGM	Balance	49,701
5	Loyda Méndez	UAGM	Animal facility	25,000
6	Jose Pérez	UAGM	Sequencer	11,400
7	Elsie Pares	UPR-Mayagüez	Crystallography	23,000
8	Celine Casse	UPR-Mayagüez	Lyophilizer	25,000
9	Antonio Colón	IAUPR	Spectofotometer	17,747
10	Alondra Díaz	UPR-Mayagüez	Sequencer	15,770
11	Maribella Domenech	UPR-Mayagüez	Microtester	50,000
12	Yancy Ferrer	UCC	Nanotrac	25,000
13	Claudia Ospina	Inter Bayamón	Polarimeter	85,000
14	Joan Roque	UPR-Carolina	Labs	22,965

NEW EQUIPMENT ACQUIRED BY PR-INBRE

	Investigator	Institution	Instrument	Cost
15	Enrique Rodríguez	UPR-Carolina	Incubator and spec	25,000
16	Abigail Ruíz	UPRP	PCR	25,000
17	David Sanabria	UIAM	Homogenizer	15,000
18	Ceidy Torres	UPRP	Keyencesoftware	30,000
19	Omar Vélez	UPRP	Shaker	15,000
			Total	**$536,096**

USERS OF CORE FACILITIES

DRPP CORE

Feasibility Awards

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

5 Awards recipients

	Investigator & Institution	CORE Facility to be used
1	Filipa Godoy, UPR-Medical Sciences	Metabolomics UPR-Medical Sciences, Dr. Chorna
2	Celine Casse, UPR-Medical Sciences	ChemTox UAGM, Dr. Zayas
3	Mirna Rivera, UPR-Humacao	ChemTox UAGM, Dr. Zayas
4	Claudia Ospina, Inter Bayamón	Proteomics UPR-Medical Sciences, Dr. Meléndez
5	Omar Vélez, UPR-Rio Piedras	Genomics UPR-Rio Piedras, Dr. Papa

CRI Core

193 PR-INBRE users of CRI Core Facility

Position	HGC	Proteomics	SGF	ChemTox	Metabolomics	SubTotal
Faculty	15	3	15	4	18	**55**
Post doc	2	3	5	0	2	**12**
Staff	9	6	5	1	3	**24**
Graduate students	25	6	12	4	11	**58**
Undergraduate students	7	2	20	5	10	**44**
					Total	193

USERS OF CORE FACILITIES

BiRC Core

Users of the High Performance Facility Computer (HPCf)

- **137** new user accounts in 18 new research groups

**Including 33 new user account on the Boquerón cluster from BiCoP training participants.

- A total of 385 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

NEW COLLABORATIONS WITH PR-INBRE CORES

Administrative Core

1. PR-INBRE-COBRE Collaboration to strengthen research infrastructure

CO6 Proposal for construction of a UPR Center for Incubator and Technology Transfer at the Molecular Sciences Research Center submitted April 2022 by Dr. J. Lasalde PI, Dr. J Rodriguez-Medina, Collaborator.

2. Held the Southeast Regional IDeA Conference 2021 in San Juan, Puerto Rico. The Puerto Rico IDeA Network of Biomedical Research Excellence host the 2021 Southeast Regional IDeA Conference in San Juan, Puerto Rico on November 12-14, 2021. The Regional Conference has served as an important platform for faculty, postdoctoral, and student scientists of the Southeastern IDeA States and Puerto Rico to discuss matters of science, administrative policy, and best practices in a cordial and interactive scholarly environment.

- Total 270 participants from IDeA programs, CTR, COBRE and SEPA
- Collaborators: Center for Collaborative Research in Health Disparities (RCMI), National Association of IDeA Principal Investigators, Puerto Rico Science, Technology and Research Trust, AAAS Caribbean Division, PINE Biotech, PR Tourism Company, Tittle V Coop

NEW COLLABORATIONS WITH PR-INBRE CORES

Cont. Administrative Core

3. Co-Sponsored the 11th Annual Conference of the American Council for Medicinally Active Plants (ACMAP). The conference was held on June 28 -July 2 at Inter American University of Puerto Rico.

Bioinformatics Core

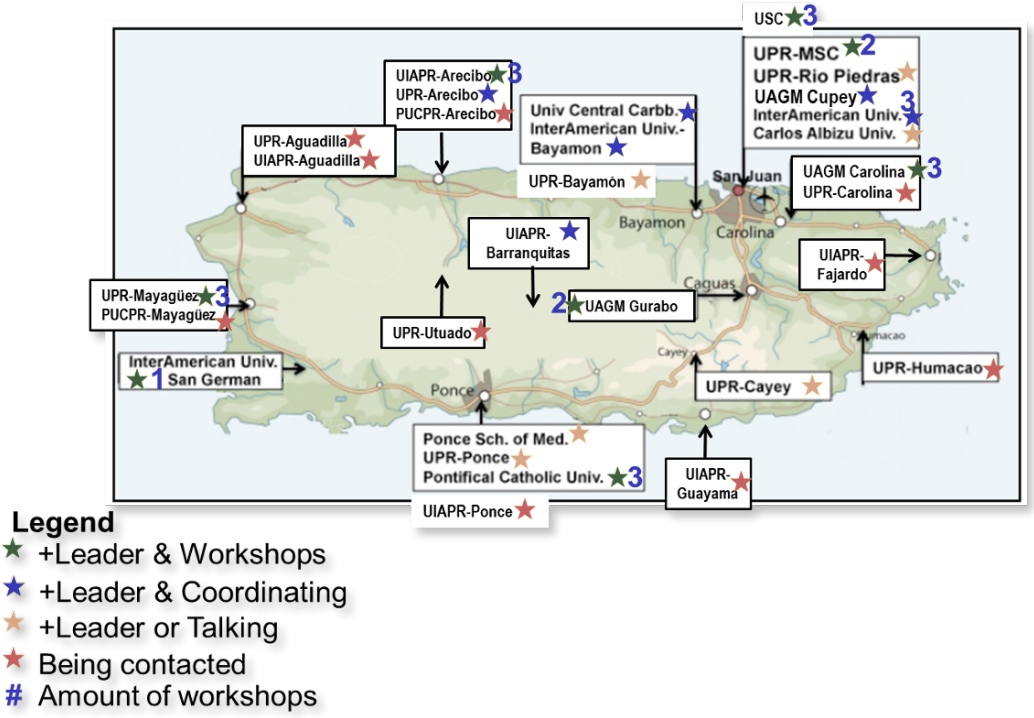
1. Established a Community of Practice (BiCoP) inside and outside the PR-INBRE network institutions.

- All the PR-INBRE Network Institutions have been initially contacted (n=19) to participate of BiCOP
- Also, 11 institutions outside the PR-INBRE network have been invited to BiCOP

NEW COLLABORATIONS WITH PR-INBRE CORES

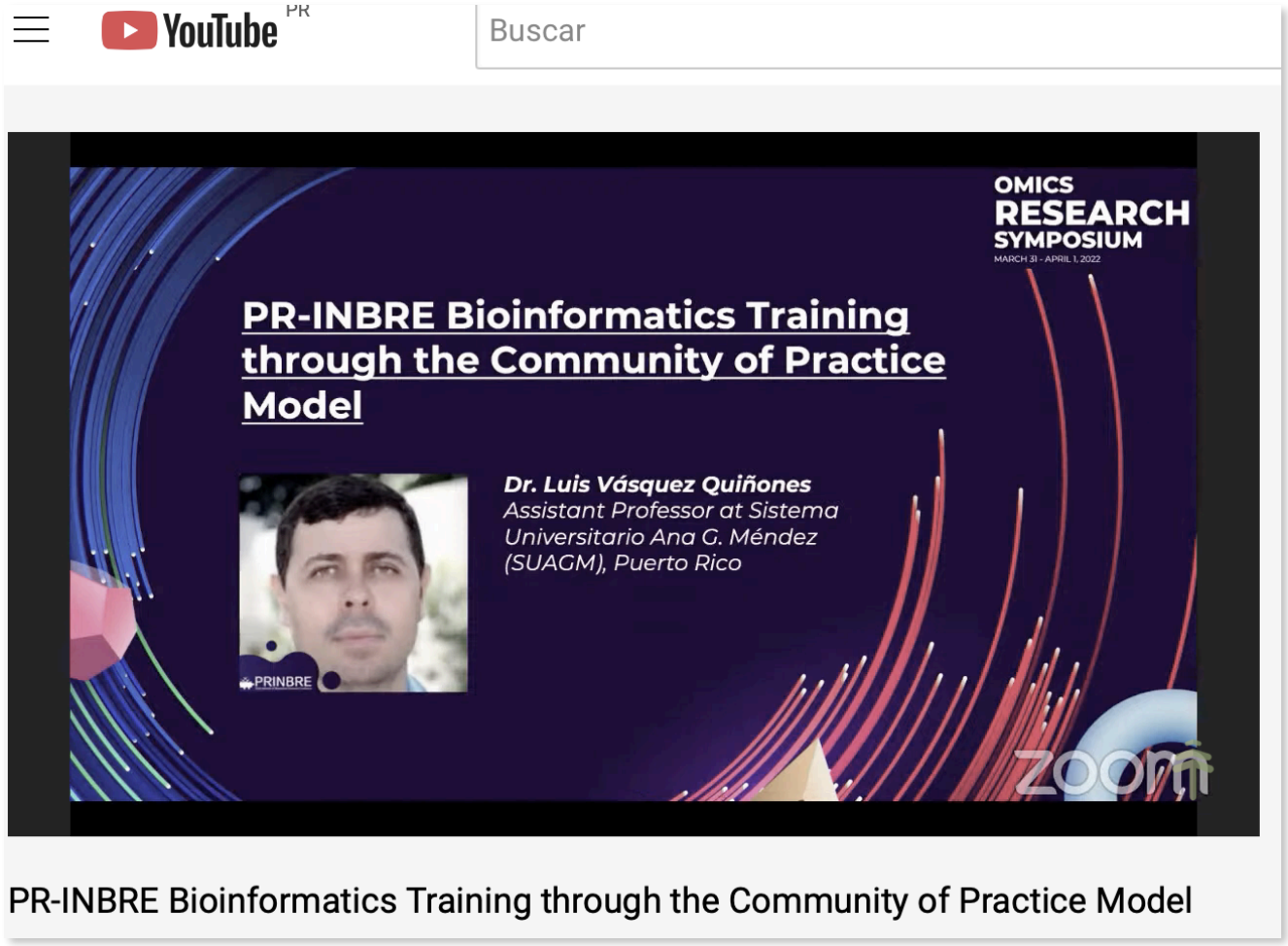
Cont. Bionformatics Core

- Until April 2022, Dr. Luis Vázquez has carried out 24 instances of the 3 workshops developed for BiCoP: Linux Boquerón Cluster Operating System for Bioinformatics & Computation Parts 1, 2, and 3.
  - BiCOP workshops completed or in progress in 9 out of 19 network institutions
    - 1 Lead: UPR-RCM
    - 4 PUIs: UPR-Mayagüez, UAGM Gurabo, UAGM Carolina, UAGM Cupey
    - 4 Outreach: Sagrado, UCC, PUCPR, Inter-San Germán



2. On April 1, 2022, Dr. Vázquez-Quiñones gave a 20-minute talk titled *"PR-INBRE - Bioinformatics Training Opportunities through the Community of Practice Model"* at the **Pine Biotech's Omics Research Symposium 2022**. Afterward, he participated in a discussion panel with NAIPI PIs - Research projects, opportunities, and ways to standardize translatable research. PR-INBRE got the opportunity to share our efforts in implementing the Bioinformatics Community of Practice and the training.

NEW COLLABORATIONS WITH PR-INBRE CORES



Centralized Research & Instrumentation Core

1. Human Genetics and Genomics established 3 new research collaborations:

Investigator	Collaboration
RCMI Integrated Informatics Core	Genome analysis for UPR COVID-19 project titled "Host factors associated to COVID-19 severity" ; DNA 120 subjects
Dr. Bianca Torres	Pilot project "Polymorphism in neuroplasticity-related genes and association depression
Dr. Juan Martínez , UPR-May	Genetics of diabetic nephropathy.

NEW COLLABORATIONS WITH PR-INBRE CORES

Cont. Centralized Research and instrumentation Core

2. · ChEMTOx Biotesting Facility Translational Proteomics Center

Investigator	Collaboration
Dr. Mirna Rivera UPR- Humacao	Provided Toxicological analysis of novel compounds on multiple cancer cell lines.
Dr. Joseph Bloom & grad student School of Pharmacy, UPR, Medical Campus	Characterization of drug metabolism in patients (UPLC-MS instrument (Waters Corp). Project titled "Determination of Clopidogrel and its metabolites by LC/MS/MS"
Dr. Mark Miller, COBRE	NSF PR Center Environmental Neurotoxicity (PRCEN)

3. Sequencing and Genomic Facility

Investigator	Collaboration
Dr Jorge Muñoz (CDC)	RNA Sequencing to get the Genomic surveillance of SARS-CoV-2 in Puerto Rico
Dr Gilberto Santiago (CDC)	RNA Sequencing to get the Genomic surveillance of SARS-CoV-2 in Puerto Rico

4. Metabolomics Research Core

Investigator	Collaboration
Dr. Magaly Martínez (CCC)	Metabolomic profile of HPV+ and HPV- human penile cancer tumors.
Dr. Carla Restrepo (UPR-RP)	Soil Metabolomics
Dr. Claudia A Ospina (Inter Bayamón)	Medicinal plants to target breast cancer

NEW COLLABORATIONS WITH PR-INBRE CORES

Cont. Centralized Research and instrumentation Core

5. Translation Proteomics Facility

A collaboration between Genomics and Proteomics Cores was established by submission of a COVID-19 proposal to University of Puerto Rico Central Administration. The proposal entitled "Host factors associated with COVID-19 disease severity" was awarded and study resulted in recruitment of 121 men and women participants.

CORE WORKSHOPS & SEMINARS

Total of **42** Activities Implemented

Administrative Core	Date	Speaker	Place	Participants
1. EAC Meeting & Retreat	April 23-24, 2022	Various	Hotel Wydham Rio Mar	50
2. American Council for Medicinally Active Plants (ACMAP)	June 28 - July 2, 2022	Various	UIAPR - Recinto de Barranquitas	Not available

Administrative Core & BiRC	Date	Speaker	Place	Participants
1. Orientation on the OmicsLogic environment for Bioinformatics Education, Training, and Research as a tool to enhance curriculum	January 25, 2022	Various	Online	48

BiRC Core	Date	Speaker	Place	Participants
1. Linux – Boquerón Cluster Operating System for Bioinformatics & Computation	September 17 & October 29,2021	Luis E. Vázquez Quiñones	UPR - Medical Sciences Campus	4
2. Linux – Boquerón Cluster Operating System for Bioinformatics & Computation	October 1 & 15 2021	Luis E. Vázquez Quiñones	UAGM - Recinto de Gurabo	6
3. Linux – Boquerón Cluster Operating System for Bioinformatics & Computation	January 18-20, 2022	Luis E. Vázquez Quiñones	UIAPR - Recinto de Arecibo	9

CONT. CORE WORKSHOPS & SEMINARS

BiRC Core	Date	Speaker	Place	Participants
4. Linux – Boquerón Cluster Operating System for Bioinformatics & Computation	January 21 - February 18 & 25, 2022	Luis E. Vázquez Quiñones	Universidad del Sagrado Corazón	4
5. Linux - Boquerón Cluster Operating System for Bioinformatics & Computation	February 10, 17 & 24, 2022	Luis E. Vázquez Quiñones	On-line	3
6. Linux - Boquerón Cluster Operating System for Bioinformatics & Computation	February 4, 18 & March 4, 2022	Luis E. Vázquez Quiñones	On-line	7
7. Linux - Boquerón Cluster Operating System for Bioinformatics & Computation	March 11, 2022	Luis E. Vázquez Quiñones	UAGM Carolina	3
8. Microbiomes in the Anthropocene	March 16, 2022	Filipa Godoy	School of Medicine	56
9. Linux - Boquerón Cluster Operating System for Bioinformatics & Computation	March 18-25, 2022	Luis E. Vázquez Quiñones	UAGM Cupey	3
10. R Data Analysis - The Basics	April 8 June & 29, 2022	Luis E. Vázquez Quiñones	PUCPR	4
11. Linux - Boquerón Cluster Operating System for Bioinformatics & Computation	April 29, 2022	Luis E. Vázquez Quiñones	UCC	8
12. Linux - Boquerón Cluster Operating System for Bioinformatics & Computation	May 27, 2022	Luis E. Vázquez Quiñones	UIAPR San Germán	1
13. R Data Analysis - The Basics	June 10, 17 & 24, 2022	Luis E. Vázquez Quiñones	On-line-JRA students	18
14. R Data Analysis - The Basics	June 13-15, 2022	Luis E. Vázquez Quiñones	UAGM Carolina	5
15. R Data Analysis - The Basics	June 28, 2022	Luis E. Vázquez Quiñones	UPR Ponce	6
			Total participants	137

CONT. CORE WORKSHOPS & SEMINARS

CRI Core	Date	Speaker	Place	Participants
1. Illumina iScan Infinium Assays workflow	July 12-16, 2021	Carmen Cadilla	Human Genetics and Genomics UPR-MSC	Not available
2. Analysis of cancer cells metabolome	August 25, 2021	Nataliya Chorna	On-line	2
3. Analysis of metabolite content in the soil	August 27, 2021	Nataliya Chorna	On-line	2
4. 10X Genomics	October 25-27, 2021	Ricardo Papa	Molecular Science Research Center UPR, SGF	21
5. King Fisher robot	January 31, 2022	Ricardo Papa	Molecular Science Research Center UPR, SGF	6
6. In-vitro Research Techniques in Molecular Toxicology	February 11, 2022	Beatriz Zayas	"Biotesting Facility Core Lab (CheMTox)-UAGM CUPEY)"	35
7. Hands-On Basic Cell Culture Methods	March 10, 2022	Beatriz Zayas	Biotesting Facility Core Lab (CheMTox)-UAGM CUPEY)	8
8. Hands-On Basic Cell Culture Methods	March 17, 2022	Beatriz Zayas	Biotesting Facility Core Lab (CheMTox)-UAGM CUPEY)	6
9. New analytical tools for GC/MS raw data analysis	April 1, 2022	Nataliya Chorna	On-line	18
			Total participants	98

DRPP Core	Date	Speaker	Place	Participants
1. PR-INBRE Progress Report Workshop	February 25, 2022	Evaluation Team	On-line	11

CONT. CORE WORKSHOPS & SEMINARS

STCE Core	Date	Speaker	Place	Participants
2. Development Individual Experimental Plan	September 25, 2021	Juan López Garriga	Universidad Ana G. Méndez, Carolina Campus	13
3. Artificial Intelligence, Drug Discovery and Protein-Protein Interactions: A New love Triangle	February 18, 2022	Jose Rodríguez Medina	On-line	40
4. Experimental Design: A Research Life-Time Integrated Skills	February 18, 2022	Juan López Garriga	On-line	16
5. Design thinking and brainstorming sessions for project definition section 1	March 12, 2022	Jose Rodríguez Orengo	UAGM - Recinto de Gurabo	12
6. Customer discovery	March 19, 2022	Jose Rodríguez Orengo	UAGM - Recinto de Carolina	8
7. License to kill: a 'natural killer' approach to cellular therapies against cancer	April 4, 2022	Jose Rodríguez Orengo	UPR - Medical Sciences Campus	28
8. An experience of becoming a Puerto Rican physician-scientist: taking the long and difficult (but rewarding) road	April 5, 2022	Jose Rodríguez Orengo	On-line	15
9. Retos y Oportunidades para Amplificar las Voces de la Comunidad en la Investigación para el Desarrollo Sostenible	May 13, 2022	Edna Acosta	On-line	27
10. Storytelling and Pitch	May 14, 2022	Jose Rodríguez Orengo	UPR - Rio Piedras	5
11. Mechanisms of Successful Aging	May 17, 2022	Jose Rodríguez Orengo	UPR - Medical Sciences Campus	-
12. Curso de ética	May 2022	Edna Acosta	UPR - Medical Sciences Campus	41
13. Transcriptional and epigenetic profiles of human tumors at single-cell resolution nominate salient cancer specific enhancers	June 23, 2022	Jose Rodríguez Orengo	UPR - Medical Sciences Campus	59
14. Seminar Tour Dr. Joseph Horzempa	June 28, 2022	Jose Rodríguez Orengo	UIAPR Bayamón	9
			Total participants	**273**

CONT. CORE WORKSHOPS & SEMINARS

CORES	Number of Activities	Total participants
STCE	14	273
DRPP	1	11
CRI	9	98
BiRC	15	137
ADM	3	48
Total	**42**	**617**
		Average: 16 participants

Participants	Total
Faculty	87
Undergraduate student	82
Graduate student	87
Other	46
Not specified	108

The attendance sheet or the position of the participants were unavailable for some of the activities.

Evaluation	Total
Activities Evaluated	32
Activities Not Evaluated*	10

The attendance sheet was unavailable for the evaluation team for the workshops and seminars that were not evaluated.

Sponsored	Total
Activities INBRE Sponsored	31
Activities INBRE Co-sponsored	11

CONT. CORE WORKSHOPS & SEMINARS

Satisfaction with Workshops & Seminars

Average: 95.3%

Usefulness of the Workshops & Seminars

95% reported the seminar/workshop was useful for their professional performance

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.
    - 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.
    - Faculty-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.

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.

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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