

Puerto Rico IDeA Networks of Biomedical Research Excellence (PR-INBRE)

The 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).

UPR-Medical Sciences Campus
San Juan, Puerto Rico

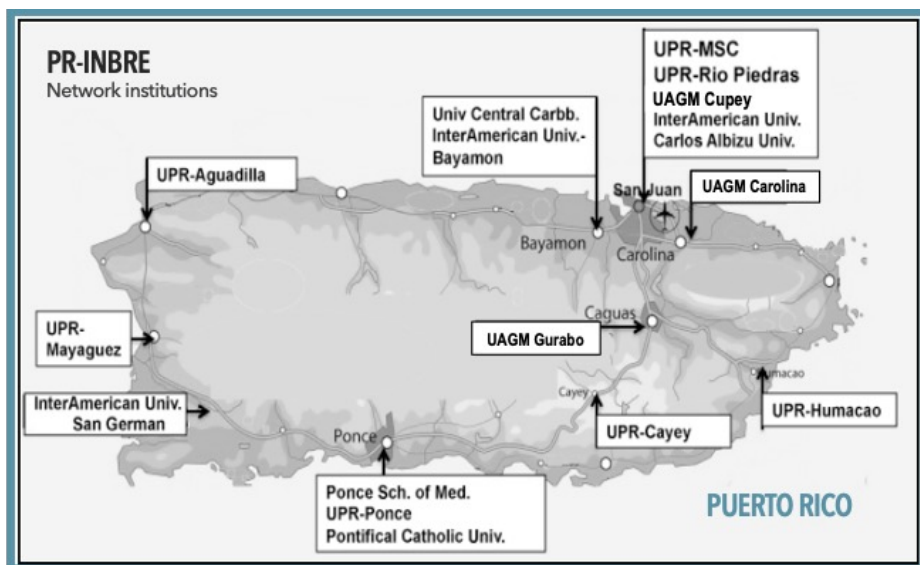
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Impact of [Program] FY21-22

- The PR-INBRE has supported more than 90 faculty research projects (\$7.1M) island-wide, resulting in more than 686 research presentations (local and mainland), 249 peer reviewed publications, 8 teaching modules in Bioinformatics and 2 patents commercialized. Since 2015, 276 grants have been awarded from independent sources (\$26.9M) to PR-INBRE investigators among the network resulting in a Return of Investment (ROI) of \$3.8 per every \$1.
- Network institutions have received approximately \$1.6 M in INBRE funds for instrumentation in the previous cycle (2015-2020) substantially improving their research infrastructure. Since 2009, five Instrumentation facilities have been established at Lead & Partner Institutions that offer state-of-the-art equipment, expertise, and training services for INBRE network users (200 users approx.).
- In the last five years, PR-INBRE has benefited over 1,165 undergraduate and graduate students across our Network most notably via research mentoring, seminars, professional development workshops and biomedical-related courses. Many students that have been mentored directly by PR-INBRE investigators have continued graduate studies in mainland and local programs. (Completed degrees: 7 Post-Docs, 36 PhD, 18 MD, 19 MS, 1 MD/PhD; In-progress: 3 Post-Docs, 30 PhD, 2 MD/PhD, 11 MD, and 3 MS).



Program Overview

The PR-INBRE program is led by an administrative team at the UPR-Medical Sciences Campus, under Dr. Jose Rodriguez Medina, Program Director. Currently, the PR-INBRE program supports 19 institutions across the Island.

Goal: To augment research capacity in Puerto Rico by enhancement of the research infrastructure, providing support for meritorious research projects and providing research experiences for undergraduate and graduate students, postdoctoral associates, and early career investigators.

RESEARCH AREAS

- Bioinformatics
- Neuroscience & Behavior
- Molecular Medicine & Cancer
- Drug Discovery and Development

COMPONENTS

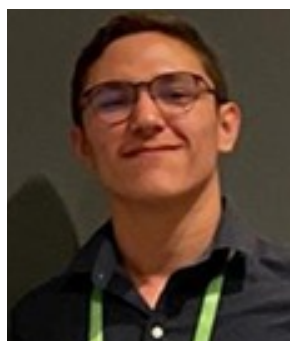
- Research:** Provides mentoring and financial support to investigators and students. Currently there are 20 active research projects (\$1.5 M)
- Instrumentation facilities:** Access to state-of-the-art core research instrumentation for nurturing new and expanding established research collaborations.
- Career development:** Professional development activities (seminars, workshops, specialized courses), travel awards to students and faculty to attend symposia and receive research training at mainland institutions.



Success Stories

Filipa Godoy Vitorino

Dr. Godoy's lab has contributed to improving knowledge of how animal-associated microbiota benefit their hosts, impacting studies of host ecology, evolution, and conservation. As the Principal Investigator of the UPR Microbial Ecology and genomics lab she is focused on understanding patterns of dysbiosis in human microbiomes associated to disease and cancer development, especially those linked to HPV infections. During the past ~8 years she has published 27 peer-reviewed manuscripts indexed to Medline (2018-present) and 40 others in non-biomedical journals (such as in marine biology, soil ecology, microbial ecology). She has obtained ~2.5M in external funds from NIH for the next 4 years including an R21 grant. She stated that "It is very clear that PR-INBRE was the boost she needed to grow her lab and expand its capacity to impact students and researchers in Puerto Rico and the Caribbean".



Brayán Vilanova-Cuevas, B.S., PhD student

PR-INBRE UG Student from 2017 to 2021. PR-INBRE Mentor: Dr. Filipa Godoy

Research project: *Association of Periodontal Disease with the oral Microbiota of high-risk Puerto Ricans*

Outcomes: 14 Presentations, 4 Publications (PMID: 36452304, PMCID: PMC9294514, PMCID: PMC7138329, PMCID: PMC9703052)

Brayán completed a B.S. in Microbiology at the Interamerican University Metro Campus and a post baccalaureate PREP program at University of California, Davis. Currently, Brayán is a PhD student in Microbiology at Cornell University. He received the CALS Stadman Fellowship and the Chemistry and Biology Interfaces Training Grant - T32.

Statewide [NIH/NIGMS IDeA,NSF EPSCoR]Funding FY21-22

Program/Grant Name	Type / Institution	FY	Cong District	Amount
Advancing Competitive Biomedical Research in Puerto Rico (PR-INBRE) (PI: Jose R. Rodriguez Medina, Award #5P20GM103475-20)	University of Puerto Rico, Medical Sciences Campus Lead Institution	2022	98	\$3,834,720
COBRE Phase 2: Center for Neuroplasticity at the University of Puerto Rico (PI: Jose A. Lasalde Dominicci, Award #5P20GM103642-10)	University of Puerto Rico, Medical Sciences Campus	2022	98	\$1,988,498
Hispanic Alliance for Clinical and Translational Research (Alliance) (PI: Carlos A. Luciano, Award #3U54GM133807-03S1)	University of Puerto Rico, Medical Sciences Campus	2022	98	\$59,785
Hispanic Alliance for Clinical and Translational Research (Alliance) (PI: Carlos A. Luciano, Award #5U54GM133807-03)	University of Puerto Rico, Medical Sciences Campus	2022	98	\$3,000,000
MRI: Acquisition of X-Ray Diffraction System, EPSCoR Co-Funding (PI: Wilfredo Otano, Award #32215247)	University of Puerto Rico Cayey	2022	98	\$304,098
Collaborative Research: CISE-MSI: DP: IIS: Hybrid-Architecture Symbolic Parser with Neural Lexicon, EPSCoR Co-Funding (PI: Valentin Hilton, Award #2219712)	University of Puerto Rico Mayaguez	2022	98	\$394,428
REU Site: Molecular Aspects of Pharmaceutical Sciences at UPR (UPR-MAPS), EPSCoR Co-Funding (PI: Torsten Stelzer, Award #2149902)	University of Puerto Rico, Medical Sciences Campus	2022	98	\$291,594
IRES Track I: STEM Advancement through International Learning (SAIL) EPSCoR Co-Funding (PI: Dorcas Torres, Award #2153108)	Inter American University of Puerto Rico	2022	98	\$298,992
OSIB: Neurobiology of Host Manipulation by Parasites, EPSCoR Co-Funding (PI: Mark Miller, Award #2217657)	University of Puerto Rico, Medical Sciences Campus	2022	98	\$350,424
Collaborative Research: Characterizing Iron Deposits in Puerto Rico to Elucidate Metal Transport and Magnetite Mineralization Processes in Skarn Systems, EPSCoR Co-Funding (PI: Thomas Hudgins, Award #2217928)	University of Puerto Rico Mayaguez	2022	98	\$248,406
Collaborative Research: Testing Critical Zone Controls on Mountain-Scale Relief in a Tropical Climate, EPSCoR Co-Funding (PI: Kenneth Hughes, Award #2139895)	University of Puerto Rico Mayaguez	2022	98	\$284,503
Collaborative Research: IRES Track I: Flood Resilience Program - Integrated research experiences to foster understanding on how to increase resilience in flood-prone communities, EPSCoR Co-Funding (PI: Ismael Pagan, Award #2153697)	University of Puerto Rico Mayaguez	2022	98	\$5,955
RII Track-2 FEC: Genomic Logic Underlying Adaptive Morphological Divergence, EPSCoR Co-Funding (PI: Ricardo Papa, Award #1736026)	University of Puerto Rico Rio Piedras	2022	98	4,200,000
Total Funds				\$15,261,403