

RCMI Newsletter

Volume 1, Issue 1

The PHSU Specialized Center in Health Disparities is an NIH-funded grant for Research Centers in Minority Institutions (RCMI) that addresses issues impacting minority health and health disparities. For over 35 years, the RCMI has contributed significantly to Ponce Health Sciences University's (PHSU) development of its human and physical research infrastructure. Through the auspices of the RCMI Program, PHSU has been able to recruit top-notch talent, acquire state-of-the-art facilities, equipment, and other resources required to pursue competitive basic, behavioral, and clinical research.

The Center's primary goal is to promote high-quality translational research with a strong emphasis on health disparities and is composed of five Core activities; Administration Core (AC), Center for Research Resources (CRR), Strategic Academic Research Training (START) Core, the Community Training Institute for Health Disparities (CTIHD); and three full research projects in basic, behavioral, and clinical studies.



RCMI Program Grant U54MD007579

1st RCMI Symposium on Health Disparities

17th PRI ANNUAL SCIENTIFIC CONFERENCE / 1st RCMI SYMPOSIUM ON HEALTH DISPARITIES



The Ponce Research Institute's Research Centers in Minority Institutions (RCMI) is proud to announce its 1st RCMI Symposium on Health Disparities! This year the topics of discussion will include: Obesity, Diabetes & Metabolic Syndromes, and Hypertension & Cardiovascular Disease.

Save the Date!
May 7, 2022

It will be a joint event with the PRI's 17th Annual Scientific Conference at the Hilton Ponce Golf & Casino Resort.

Principal Investigators

The RCMI Administrative Leadership, provided by Dr. José A. Torres- Ruiz and Dr. Richard J. Noel, demonstrates a high level of effectiveness despite challenges posed by the pandemic, ongoing power outages, and earthquakes.



José A. Torres-Ruiz, Ph.D.
RCMI Contact Principal Investigator



Richard Noel Jr., Ph.D.
RCMI Principal Investigator

MEET

CRISTINA PEÑA VARGAS, Ph.D. (Research Associate)



“

My doctoral dissertation focused on the relationship between the expression of neuro-affective pathways with depression, hopelessness, and suicidal ideation. My goal is to apply this critical area of research in the cancer health disparities area by investigating potential protective factors and how they interact with biopsychosocial factors contributing to poor cancer health and quality of life.

”

Administrative Core

Provides administrative and logistical support for all Center activities

Core Leaders: José A. Torres-Ruiz, Ph.D. & Richard Noel Jr., Ph.D.

The Administrative Core demonstrates a high level of effectiveness of RCMI Administrative Leadership provided by Dr. José A. Torres-Ruiz and Dr. Richard J. Noel. Despite challenges posed by the pandemic and lingering effects imposed by ongoing power outages resulting from the previous hurricane and earthquakes, the Ponce RCMI Program continues to make impressive progress toward its overall goal.



RCMI Contact Principal Investigator



RCMI Principal Investigator

Each of the cores and resources was successfully allocated and leveraged to support the projects and additional research and community outreach within Ponce and more broadly throughout Puerto Rico.

Meet the Admin Core Team!



Frances Irizarry,
BA
Database Manager

Soreli M. Santana,
DrPH
Projects Coordinator

Doris A. Andújar,
MPH
RCMI Executive Manager

María Santiago,
BBA
START Coordinator

Stephanie Batista
Data Entry Specialist

Research Infrastructure Core

Center for Research Resources

Designed to enhance the quality and productivity of research projects.

Core Leader: Vanessa Rivera-Amill, Ph.D.

The Center for Research Resources (CRR) offers services, expertise, and training in advanced technology applications. Provides the research infrastructure to projects in diverse areas and is the primary driver of convergent sciences.

Highlight: CRR contributed to the implementation of the SARS-CoV-2 S gene and whole-genome sequencing. In response to the COVID-19 pandemic, CRR developed a molecular test for SARS-CoV-2 Diagnostics Testing. They also addressed the viral transport medium shortage and contributed to diagnostic testing in southern Puerto Rico



Meet the Center for Research Resources Team!



Camille Lugo
Research Data Manager
& Analyst



Katiria Quiñones
Laboratory Assistant



Pablo López
Laboratory Technician



Maria Colón
Laboratory Technician



Yashira García
Laboratory
Technician



Raphael Sánchez
Laboratory
Technician



Andrea Arias
Research
Technologist



Yadira Rodríguez
Laboratory
Technician



Bethzaly Velázquez
Laboratory
Technician



Wanda Vargas
Nurse
Recruiter



Grissell Tirado
Post-Doctoral Fellow

Community Training Institute for Health Disparities by Community Engagement Core

Establishes long-term relationships with community-based organizations

Core Leaders: Julio J. Jiménez, MD & Melissa Marzán, Dr.P.H.

The main goal of this Core is to establish an innovative infrastructure for promoting health disparities research through the strengthening of RCMI/PHSU researchers and their partnerships with community members.

The core provides a sustainable mechanism to promote community empowerment in Community-Based Participatory Research (CBPR) skills and Translational health education skills that will facilitate the expansion of active participation in community-academic research partnerships aimed to increase health equity.



Meet the Community Engagement Core Team!



Fernando Rosario, MPH
CEC Coordinator



Dorimar Rodríguez, BAA
CEC Research Program
Research Assistant



David A. Vélez, MPH
CEC Community Health
Education Program
Research Assistant



Axel Ramos, Ph.D.
CEC Community
Assessment Component
Leader



Gloria Asencio, Ph.D.
CEC Research Program
Leader



Eida Castro, PsyD, MS
CEC Research Program
Leader



Luisa M. Morales, DrPH
CEC Community Health
Education Program Leader

Meet our Community Participants!



The Community Engagement Core's main goal is to promote health disparities research through strengthening RCMI/PHSU researchers and their partnerships with community members to impact health disparity research, community health education, change the dynamic of Hispanic participation in research and increase translational research.



Ada Colón
Community Scientific
Advisory Member
Peñuelas



Ada Rodríguez
Community Scientific
Advisory Member
Yauco



Elidia Rodríguez
Community Scientific
Advisory Member
Ponce



Roberto Ortiz
Community Trained
Workforce Member
Ponce



Geraline García
Community Scientific
Advisory Member
Peñuelas



Ivette Gracia
Community Trained
Workforce Member
Ponce



María Arzola
Community Trained
Workforce Member
Santa Isabel



Juan Pablo Rivera
Community Scientific
Advisory Member
Peñuelas



Harold Martínez
Community Scientific
Advisory Member
Guayanilla



Annette Velázquez
Community Trained
Workforce Member
Peñuelas



Zuleyma Hernández
Community Trained
Workforce Member
Villalba



Carmen Vélez
Community Scientific
Advisory Member
Villalba



Marelyn González
Community Scientific
Advisory Member
Ponce



Lydia Vázquez
Community Trained
Workforce Member
Santa Isabel

STrategic Academic Research Training

Investigator Development Core

Enhances the scientific diversity in junior faculty scholars.

Core Leader: Richard J. Noel Jr., Ph.D.

The Strategic Academic Research Training (START) Program is designed to guide early stage investigators in their academic research career development. Scholars in the two-year-long START curriculum receive monthly training and tailored mentoring. All current and former Scholars are eligible for project funding in a competitive, peer-reviewed process. The main goal is to enhance diversity in the scientific workforce, support career success among PHSU/PRI faculty, and to foster the unique backgrounds and approaches among researchers from all of PHSU's academic programs.



The START core has set an innovative example for other institutions to follow in their efforts to recruit and mentor diverse junior faculty by providing a framework, oversight and independent evaluation to assess progress.

PHSU faculty can enroll in START through the following link:



<https://bit.ly/3Ha23en>



Meet our Graduate Scholars!



Ismael Castillo, Ph.D.
School of Behavioral & Brain
Sciences
Health Disparities



Margarita Bonilla, DMD, Ph.D.
Dental School
Cancer Periodontal Diseases



Caleb Esteban, Ph.D.
School of Behavioral & Brain
Sciences
Sexual Orientation Disparities



Clara Isaza, Ph.D.
Public Health Program
and Basic Sciences
Infectious Disease



Marian Sepúlveda, Ph.D.
Basic Sciences
Neuroscience Addiction



Grissell Tirado, Ph.D.
PRI
HIV-1 Menopause



Eliot Rivera, Ph.D.
School of Behavioral & Brain
Sciences
Health Disparities



Carlos J. Díaz, Ph.D.
Basic Sciences
Cancer

Recruitment Core

Supports the hiring of investigators with track records of independent research support

Core Leader: José A. Torres-Ruiz, Ph.D.

This core aims to recruit ten new research faculty in RCMI targeted research areas:

- Cancer Biology / Oncology
- Neurosciences
- Infectious Diseases
- Cardiovascular / Hypertension
- Human Genetics



Our recruits will assure our quest of expanding the research workforce enterprise and meet our mission of addressing health disparities in Puerto Rico.

Meet RCMI's recruits!



Carlos J. Díaz, Ph.D.
Basic Sciences Department
Cancer



Normarie Torres-Blasco
School of Behavioral and Brain Sciences
Cancer & Community



Marian Sepúlveda, Ph.D.
Basic Sciences Department
Neuroscience



Margarita Bonilla, Ph.D., DMD
Dental School
Cancer and Oral Health

Full Research Projects

Clinical Research

Pediatric Outcomes of Prenatal Zika Exposure II (POPZE II)

Project Leads: Luisa I. Alvarado, MD & Mary Rodríguez, Psy.D.

Zika virus (ZIKV) infection during pregnancy can result in microcephaly and severe brain defects with serious neurodevelopmental consequences. Most exposed children do not have clinically evident birth defects and may be at risk for sensory, neurologic and developmental problems. This study enrolls children born to mothers with and without ZIKV infection during pregnancy to examine the early childhood risks for developmental impairment that can affect school readiness, the impact of the environment, and the role of the health system.

Highlight: Received supplemental funds to understand how “protective responses” to the COVID-19 pandemic improve resilience and reduce disparities in vulnerable children and families.



Meet the Clinical Research Team!

Luisa I. Alvarado, MD
Project Lead

Mary Rodríguez, Psy.D.
Project Co-lead

Marilyn Borges
Administrative
Research Coordinator

Nicole Ruiz
PsyD Graduate Student

Viviana Rosario
Study Coordinator

Irelis Repollet
Research Assistant

Full Research Projects

Basic Biomedical Research

Effects of early-life neglect and cocaine use on PTSD-like behaviors

Project Leads: James Porter, Ph.D. & Devin Mueller, Ph. D.

Childhood neglect, substance use disorder, and post-traumatic stress disorder (PTSD) interact and likely contribute to worse outcomes and health disparities. The study aims to provide a deeper understanding of the cellular, circuit, and behavioral effects of early life neglect and adolescent substance use in an animal model of PTSD. A better understanding of how these factors interact may lead to better treatments for comorbid substance use disorder and PTSD.

Highlight: Drs. Porter and Mueller's training of graduate students is highly commendable for sharing knowledge and expertise with the next generation of scientists dedicated to working on health disparities.



Kent State University



Meet the Basic Biomedical Sciences Research Team!

James Porter, Ph. D.
Project Lead

Emily Ortiz
Undergraduate
PUCPR

Lubriel Sambolín
Graduate Student

Cristina Suárez
Laboratory
Technician

Amanda Baizán
Volunteer from Costa Rica

Anixa Hernández
Laboratory
Supervisor

Yesenia Rivera
Graduate Student

Orlando Torres
Graduate Student

Nashaly Irizarry
Graduate Student

Maria Colón
BRAIN Core Supervisor



Full Research Projects

Behavioral Research

Biopsychosocial predictors of tumor-associated inflammation and progression

Project Lead: Eida M. Castro, Psy.D. & Guillermo Armaiz, Ph.D.

Studies linking chronic psychosocial stress and inflammation markers in breast cancer (BC) patients are emerging, but none have focused on Hispanic/Latinas (H/L). The study addresses this knowledge gap and will demonstrate how exposure to past and current psychosocial stress mediates the relationship between depression symptoms and tumor-associated inflammatory processes in H/L breast cancer patients.

Highlight: Novel strategies are employed to overcome the recruitment challenges presented by the hurricane, earthquakes, and the COVID-19 pandemic.



Meet the Behavioral Research Team!



Eida Castro,
PsyD, MS
Project Lead

Zindie Rodríguez, MD
Project
Coordinator

Margarita Bonilla,
DMD, Ph.D.
Senior Research
Faculty

Nelmit Tollinchi
Natali, Ph.D.
Research Assistant

Cristina Peña,
Ph.D.
Research
Associate

Guillermo Armaiz, Ph.D.
Project Lead

New Equipment at CRR

During the current grant cycle 2019-2024, RCMI has invested \$ 1.78M in state-of-the-art laboratory equipment

The capacity of the instruments listed below is essential to enhancing our institution's cross-cutting technologies, and it benefits intramural and extramural researchers, including graduate and undergraduate students. Especially now, with new space in the Neuroscience Building, all the necessary equipment was relocated to this new space.



Roche Cobas8800

The new equipment supports ongoing research using translational animal models and the recruitment and development of new faculty as our institutional growth continues.

BD - Flow Cytometer With Cell Sorting

Illumina NextSeq 1000 Sequencing System

Sage Scientific - 2nd Generation Multi-fiber Photometry System

Ugo Basile Any Maze Mouse Setup for Fear Conditioning

Perkin Elmer - IVIS Lumina S5 Small Animal Imaging

Thermo Scientific 27 Cu Ft. Deep Freezer

Eppendorf Model 5430R microcentrifuge

Sorvall LYNX 6000 superspeed centrifuge

Bio-Rad OPUS 96 PCR

Nikon C2+ Confocal System

Fast Pack IP System

ACTstor 4600j data storage module

Centralized Data Storage Area Network

EAC Meeting

November 10 - 12, 2021

The External Advisory Committee (EAC) members expressed unanimous praise for the progress of RCMI over the past year. They were able to witness firsthand the significant impact of the RCMI on the local and regional community. For example, the level of community involvement in the RCMI is exemplary and can serve as a model for similar programs across the country and internationally that seek to address health disparities in meaningful ways.



During the meeting, several community members presented and contributed to the conversation, expressing their commitment to and admiration for the RCMI investigators, with whom they share deep mutual respect. Their testimonials explicitly described the RCMI and its valuable team members as meeting essential needs within Ponce and for the broader Puerto Rican community across the island. Moreover, the RCMI, in collaboration with the Ponce Research Institute faculty and staff across campus, has played a critical role in managing the COVID-19 pandemic in Puerto Rico.



The Center for Research Resources Core developed a COVID-19 test in-house when there were no other available COVID-19 tests in Puerto Rico. As another example of the RCMI's high-impact contribution, Dr. Melissa Marzan, who co-leads the Community Training Institute for Health Disparities, was recently appointed by the Governor of Puerto Rico to serve as the Chief Epidemiology Officer of the Department of Health. This appointment extends the program's capacity to affect health outcomes from diverse angles, from the lab and clinical settings to the community and affecting policy at the highest level of government.

The EAC members believe this exemplary Center can offer training and guidance to other institutions conducting health disparities research. Particularly for those investigators working with minority and underserved communities, the RCMI can elucidate creative and effective ways to listen to the community:

- **Identifying research priorities and needs.**
- **Addressing knowledge gaps in basic, behavioral, and clinical science.**
- **Translating findings to tangible interventions designed to improve health outcomes at the community level.**

EAC Meeting

Meet our 2021 EAC Members!



Keith Norris, MD, Ph.D.
University of California,
Los Angeles
Committee Chair
Administrative Core &
Faculty Recruitment Core



Marino De León, Ph.D.
Loma Linda University
Investigator Development
Core (START) & Research
Infrastructure Core (CRR)



**Zoë H. Hammatt, JD,
MPhil**
Z Consulting, LLC
Compliance
EAC Report Compilation &
Editing



**Caroline Palavicino-
Maggio, Ph.D.**
Harvard Medical School
Investigator
Development Core
(START), Research
Infrastructure Core (CRR)
& Basic Full Research
Project



Paula Cupertino, Ph.D.
University of Rochester
Medical Center
Community Engagement
Core
CBPR Research



**Denice Cora-Bramble,
MD, MBA**
Children's National
Hospital
Community Engagement
Core & Clinical Full
Research Project



**Shelley S. Tworogger,
Ph.D.**
H. Lee Moffitt Cancer Center
& Research Institute
Behavioral Full Research
Project



Laura E. O'Dell, Ph.D.
University of Texas, El
Paso
Basic Full Research
Project

Announcements

1st Annual Symposium in Health Disparities

17th PRI ANNUAL SCIENTIFIC CONFERENCE / 1st RCMI SYMPOSIUM ON HEALTH DISPARITIES



PONCE RESEARCH INSTITUTE

May 7th, 2022

The Ponce Research Institute's Research Centers in Minority Institutions (RCMI) is proud to announce its 1st RCMI Symposium on Health Disparities!

The panel discussion topics are:

- **Obesity**
- **Diabetes & Metabolic Syndromes**
- **Hypertension & Cardiovascular Disease**

🕒 From 8:00am to 5:00pm

📍 Hilton Ponce Golf & Casino Resort

CME Credits will be validated with your full attendance to this event.*

Some professions may experience a delay in credit approval due to high demand

Publications



George Scott, BS

Commonly Diagnosed Mental Disorders in a General Hospital System



Ernesto Rosario, Ph.D.

Review of the Internal Structure, Psychometric Properties, and Measurement Invariance of the Work-related Rumination Scale - Spanish Version



Yesenia Castillo-Ocampo

Plasticity of GluN1 at Ventral Hippocampal Synapses in the Infralimbic Cortex

Eida Castro-Figueroa,
PsyD, MS

Depression, Anxiety and Social Environmental Adversity as Potential Modulators of the Immune Tumor Microenvironment in Breast cancer Patients



Jocelyn Rivera-Ortiz

Blockade of beta adrenergic receptors protects the blood brain barrier and reduces systemic pathology caused by HIV-1 Nef protein

Cristina Peña-Vargas,
PsyD

A Biopsychosocial Approach to Grief, Depression, and the Role of Emotion Regulation



Clara Isaza, Ph.D.

Multiple Criteria Optimization (MCO): A Gene Selection Deterministic Tool in RStudio

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