

2016

28th Annual
Student
Research
Symposium

Brochure by MORE - RISE Program
August 15- 27

Program & Symposium Goals

The RISE Program encourages and provides research opportunities for undergraduates. This goal is accomplished with four components

- (1) inviting scientists to present seminars and workshops
- (2) freshmen enrolled in introductory research courses
- (3) activities for improving quantitative skills
- (4) arrange for students to participate in research with established scientists during the academic year or in summer programs in the United States of America.

Today's symposium follows two weeks of judging by 19 faculty who evaluated 42 poster presentations by students. Their talks presented the results of research at laboratories and universities over the summer. Their projects were conducted under the supervision of a supporting faculty member (mentor) in their labs. Most students received research credits at Cayey for their efforts and their poster presentations are part of the research experience. Posters can be seen in the North Science Building (NEC).

Graduate education is essential for Cayey alumni to become scientists and improve the world's health and environment. Today we will hear why and how graduate school is a source of innovation and discovery. Future opportunities will be awarded to UPRC alumni that are prepared.

In addition to the testimonials from alumni pictured on the right Dr. Jorge Colón from UPR-Río Piedras will speak on 'How to apply for the Ph.D.' And Dr. Homero Monsanto will speak on 'Why do We need Ph.D.s?'

If you are interested or have a question, please ask the speaker. Your interest acknowledges the success of the presenter.

Thanks to the RISE Staff- Mr. Michael Vicente & Mr. Giovanni Cruz
RISE Director Dr. Vibha Bansal & Coordinator Dr. Robert Ross



Thanks for the collective effort of 19 Science Faculty who interviewed & judged 42 posters.

Dr. Belinda Román	Dr. Edwin Vázquez	Dr. Michael Rubin
Dr. Carlos Ricart	Dr. Elba Reyes	Dr. Robert Ross
Dr. Chad Lozada	Dr. Eneida Díaz	Dr. Rosann O'Neill
Dr. Christian Menéndez	Dr. Enrique Rodríguez	Dr. Víctor Pantojas
Dr. Claudia A. Ospina	Dr. José Molina	Dr. Zulma García
Dr. Dalvin Mendez	Dr. Juan Santana	Prof. Iris Salgado
		Prof. Maria I. De Jesus



Science graduates – **From Cayey** are discovering a bright future through research.

Name of Student	Dept. of Study	Institution of Study	Graduate
Laura Vicente	Anatomy and Neurobiology	UPR- Medical Science	2014
Angelica Gonzalez	Bio-chem. and molecular	Univ. of California, Berkeley	2016
Delaine Zayas		Univ. of Pennsylvania	2016
Jose Cruz		U of Wisconsin-Madison	2016
Ormarie Vazquez		University of Georgia	2013
Carlos Santos	Biology (MD/PhD)	Univ. of Minnesota	2014
Janice Nieves		Harvard University	2012
Joseph Perez		University of Pittsburgh	2015
Lester J. Rosario		UPR- Medical Science	2014
Raquel Montanez		Univ. of Notre Dame	2015
Viviana Vidal		UPRMS-MD Anderson	2015
Claudia B. Colon	Biomedical Science	Ponce Health Sciences	2013
José J. Rosado		UPR, Medical Science, Río	2014
Rossana Colon	Cell & Molecular Biology	University of Washington –	2013
Juan Maldonado		Univ. of Illinois	2016
Amaris C. Borges	Chemistry	Univ. at Buffalo	2013
Antonio Romero		Univ. of California, San	2014
Darryl Lopez		Univ. at Buffalo	2016
Frances Rodriguez		Univ. of California, Berkeley	2011
Jaylissa Torres		Yale University	2014
Karina Tirado		Boston University	2012
Luis de Jesus		Univ. of Texas	2012
Maria Rivera		Univ. at Buffalo	2015
Natalia Rivera		Univ. at Buffalo	2014
Omar Padilla		Cornell University	2015
Vivian Rodriguez		Univ. at Buffalo	2013
Monica Rios	Comparative Medicine	Michigan State Univ.	2012
Dorianmarie Vargas	Genetics & Genomics	Univ. of Central Florida	2013
Nicolle Rosa		Yale Univ.	2016
Maria C. Huertas	Integrated Life Sciences	University of Georgia	2014
Carlos Baez	Material Chemistry	U of Wisconsin-Madison	2014
Isamar Ortiz		Penn State Univ.	2011
Jaritzza Gomez		U of Wisconsin-Madison	2011
Widad Abdalla	Math	University of Iowa	2011
Elvin E. Morales	Microbiology	Univ. of Notre Dame	2013
Wanda Figueroa		Univ. of Missouri, Columbia	2012
Erick X. Guzman	Microbiology and Zoology	UPR- Medical Science	2014
Charlene Rivera		U of Wisconsin-Madison	2016
Jose Rosado		UPR- Medical Science	2014
Jennifer Ocasio	Neuroscience	North Carolina Chapel Hill	2013
Joshua I Rosario	(MD/PhD)	Baylor Univ.	2014
Janice M. Diaz	Pharmacology & toxicology	Michigan State Univ.	2013
Janice M. Nieves		Harvard University	2013
Karina Nieves		Johns Hopkins Univ	2014
Maribel Vazquez		Univ. South Carolina	2011
Melissa Medina		Univ. at Buffalo	2013

Future Scientists – Since 2011 47 RISE summer interns are pursuing the Ph.D.

Poster Presentations – August 15 - 26 **North Science Building**

Program – August 27 **Science Building- Auditorium**

8:30 Coffee- Pastries

8:45 Welcoming Remarks –
Mario Medina, Ph.D.,
– UPR-Cayey, Chancellor

9:00 How to apply for the Ph.D.
Jorge Colón, Ph.D.
– Univ. of P.R.-Río Piedras

9:30 Why Do We Need Ph.D.s?
Homero Monsanto, Ph.D.
– Merck Sharp & Dohme (I.A.) Corp.

10:05 UPR-Cayey Alumni Speak
From Cayey to Graduate School

José Rosado, B.S. – UPR-School of Medicine

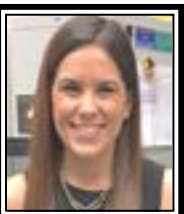
Janice Díaz, B.S. – Michigan State Univ.

Nelson López, Ph.D. – Amgen

11:30 Awarding of Certificates

Refreshments will be provided
from 8:30 until the end of the session.

Provided by the Chancellor's Office at UPR-Cayey



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Mr. Abneil Alicea *

Sex Differences in Drug Responses in the Colon of WT and TpH-1 KO Mice

James Galligan, Ph.D.
Michigan State University



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Mr. José Valentin

Sensitization to Asparaginase can be Mediated by Asparaginase Immune Complexes that Bind to the FcγRIII Receptor of Cells

Christian Fernández, PhD
University of Pittsburgh



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Mr. Emmanuel Santiago

Determining the Role of the Pteptolysin S-associated gene (sag) Cluster in MRSA Pathogenesis

Shaun Lee, Ph.D.
Notre Dame University



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Mr. Jorge Berríos *

Modulation of GluN2B activity by the Major Histocompatibility Complex I (MHCI)

Gabriela Popescu, Ph.D.
University at Buffalo



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Mr. Edwin Alvarado *

Determination of the Optical Absorption and Scattering Coefficients of Inorganic Pigments

Frank Osterloh, Ph.D.
University of California- Davis



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Ms. Jesica Vicente*

The Effects of the Mineralocorticoid Receptor in Basilar Artery TRA1 Channels Expression in Hypertensive Mice

Ann Dorrance, PhD
Michigan State University



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Ms. Dariana Torres

Characterization of Bacterial β-glucuronidase Enzymes

Matthew Redinbo, Ph.D.
University of North Carolina- Chapel Hill



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Ms. Natalia Cartagena

Micro-structured Optical Fibers (MOFs) for Organic Semiconductor Laser Resonators

John Badding, Ph.D.
Penn State University



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Mr. Héctor Barreto

Wdr62 -/- Mice Testis Show Severe Morphological Defects and an Increase Amount of Apoptosis

Stephanie Herlinger, Ph.D.
University of Georgia



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Mr. Carlos Villagrasa

Evaluating *Aspergillus fumigatus* Florescent Strains Using the Mushi Dendritic Cell Line

Amariliz Rivera, Ph.D.
Rutgers University



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Mr. Héctor Torres

A Point mutation in the N-terminal pro-peptide of Serine Proteases increases *in vitro* Translation Rates and is Critical for Recombinant Cytosolic Expression

Brian Paegel, PhD
Scripps Research Institute (Florida)



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Ms. Patricia Claudio *

Analyses of Downstream Targets of DUX4, Gene Involved in Facioscapulohumeral Muscular Dystrophy

Michael Kyba, Ph.D.
University of Minnesota



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Mr. Alexis Cotto

Immunomodulation of Dendritic Cell Function by Attenuated Leishmania Vaccine Candidate

Abhay Satoskar, Ph.D.

Ohio State University



#34

Mr. Freddy Rodríguez

Chemical Conjugation of Rare-Earth Oxchloride Nanocrystals to Hybrid Organic-Inorganic Perovskite Nanoplatelets for Solid-State Lighting Applications

Luis de Jesús, Ph.D.

Texas A & M University



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Ms. Angélica Rivera

Potential Role of UBXN1, a p97 Adaptor Protein Component of the Degradation Machinery, in Regulation of the Female Stress Response

Larry Feig, Ph.D.

Tufts Medical School



#10

Ms. Alejandra Ferrer *

Conditional Deletion of Ube3a Protein in Adult Mice does not Affect Operant Extincion

Michael Sidorov, Ph.D.

University of North Carolina -Chapel Hill



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Mr. Hector Cotto

A Mathematical Model of Coral Reef Response to Destructive Fishing Practices with Predator-Prey Interaction

Carlos Castillo, Ph.D.

Arizona State University



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Ms. Patricia Rodríguez

Using a Fluorescence Polarization Method to Screen for Small Molecule Inhibitors of an RNA-Bindling Protein

Chow Lee, Ph.D.

University of Northern British Columbia



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Ms. Cristina Rivera

Defining the Neurochemistry and Connectivity of Neurotensin Receptor-1 Neurons in the Lateral Preoptic Area

Gina Leininger, Ph.D.

Michigan State University



11 **Mr. Héctor Figueroa**

Alcohol Reward Devaluation & iDisco Brain Mapping

Oliver George, Ph.D.

Scripps Research Institute- La Jolle

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Ms. Nicole Cruz *

FMRP Localizes Adjacent to Mitochondria in Synaptic Spines of Rat Hippocampal Neurons

Elizabeth Jonas, Ph.D.

Marine Biological Laboratory



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Ms. Adriana Santiago

Determining the Apparent Dissociation Constant of Cu²⁺ to Sphingolipids

Paul Cremer, Ph.D.

Penn State University



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Ms. Elys Rodríguez

Synthesis of Novel Heterocycles

Jared Shaw, Ph.D.

University of California - Davis



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Ms. Valerie Flores *

TBA

Marvin Nieman, Ph.D.

Case Western Reserve University



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Ms. Amanda Icazatti *

Developing a Cytometric Assay for Monitoring the Engraftment and Progression of Bcr-Abl-induced Leukemia in Mice

Christian Fernández, Ph.D.

University of Pittsburgh



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Mr. Jariel Ramírez *

Ceramide Importance in Mitochondrial Activity From Mouse Retinas

Julia Busik, Ph.D.

Michigan State University



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Ms. Jessica Ortiz *

Detection of Mismatches Using Ru(II) Complexes

Claudia Turro, Ph.D.

Ohio State University



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Ms. Nahyr López

Silanol Activity of RP-HPLC Columns

Luis Colón, Ph.D.

University at Buffalo



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Mr. Alexander Jaramillo

Dosage Compensation in Aneuploid Lines of *Saccharomyces cerevisiae*

Dave Hall, Ph.D.

University of Georgia



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Ms. Laura Ramos *

Understanding the Role of Mitochondria in *Candida albicans* Virulence

Neeraj Chauhan, Ph.D.

Rutgers University



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Mr. Gabriel Pastrana

Characterization of *Pleurobrachia bachei* Colloblasts

Alison Sweeney, Ph.D.

University of Pennsylvania



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Mr. Roger Machín*

Synthesis of a Chiral Nitrogen-Heterocyclic Carbene: a Macrocyclic Ligand for Catalysis Application

Steven Diver, Ph.D.

University at Buffalo



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Ms. Valeria Laboy

Cloning of Potential Temperature Cycle Responsive Promoters and Measurement of Luciferase Activity

Colleen Doherty, Ph.D.

North Carolina State University



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Mr. Luis Reyes

Developmental Regulation of Ambient Glutamate Controls Interneuron Maturation in Early Postnatal Cortex

Gina Leininger, Ph.D.

Michigan State University



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Mr. Danilo Pérez *

Estimating Proportions of Major Cell Types in the Brain from Composite Tissue Gene Expression Data

Mark Reimers, Ph.D.

Michigan State University



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Mr. Gustavo Martínez*

Identifying the Carrier of the Rare Sugar Psicose by Competitive Inhibition of the Fructose Transporter GLUT5 and the Glucose Transporter SGLT1

Ronaldo P Ferraris, Ph.D.

Rutgers University



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Ms. Marangely Martínez

The Genetic Study of Oncogenic Ras
Signaling in the Nematode

Caenorhabditis briggsae

Helen Chamberlin, Ph.D.

Ohio State University



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Ms. Keisha Ocasio

The Contribution of Phosphatidylinositol
4,5-bisphosphate in the Characteristic Structure
of Actin's Filamentous Networks

Paul Janmey, Ph.D.

University of Pennsylvania



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Mr. Hernán Méndez

Sex differences in Cardiovascular Function
Following Acute Lowerbody Resistance Exercise

Tracy Baynard, Ph.D.

University of Illinois- Chicago



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Ms. María Morales

Mechanism of Bacterial Toxin's Entry
to Mammalian Cells

Dehua Pei, Ph.D.

Ohio State University



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Mr. Mario Ochoa

Modeling the Potential Range
of the Zika Virus Vector *Aedes aegypti*

Zamba Gideon, Ph.D.

The University of Iowa



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Mr. Emanuel Ortiz

Processing of 30S rRNA in *rrnG* and *rrnD*
Operons of *E. coli* in absence of RNase III

Sydney Kushner, Ph.D.

University of Georgia

