

2008

19th Annual
Student
Research
Symposium



Thanks to the RISE Staff-

Ms. Evelyn Rodríguez

Ms. Yadira Ortiz

Ms. Jannette Rodríguez

Coordinators

Dr. Eneida Diaz

Dr. Chantelle MacPhee

Dr. Nelson Vicente

Brochure by MORE - RISE Program

August 17- 29

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 English language skills
- (4) arranging 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 28 faculty who evaluated poster presentations by students. Their talks presented the results of research at laboratories and universities in the United States. 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. 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. José Velázquez from the National Institute of Aging (NIH)

will speak on –
'Succeeding on Your Path in the Biomedical Sciences'

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

Financial Support & Mentoring were provided by the following institutions:

Arizona State University
Baylor College of Medicine
Cornell University
Harvard University
Kansas State University
Memorial University of Newfoundland, Canada
Merck Research Laboratories, New Jersey
Michigan State University
North Carolina State University
Pennsylvania State University
Tufts University, Boston
University of Arizona
University of Buffalo, New York
University of California - Los Angeles
University of Colorado
University of Georgia - Athens
University of Massachusetts - Amherst
University of Medicine and Dentistry of New Jersey – Newark
University of Minnesota
University of North Carolina
University of Pennsylvania
University of Pittsburgh
University of Puerto Rico- Cayey
University of Puerto Rico- Medical Sciences
University of Wisconsin-Madison

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Merck & Co.
University of Puerto Rico– Cayey



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Ms. Yeseida Garay

Quantification of urease covalently immobilized on carboxyl-modified polystyrene microspheres

Ayusman Sen, Ph.D.

Penn State University



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Ms. Aslín Rodríguez

Methodology to Assess the Inhibition of α -Amylase
By Plant Extracts with Anti-diabetic Potential

Jannette Gavillán, Ph.D.

University of Puerto Rico-Cayey

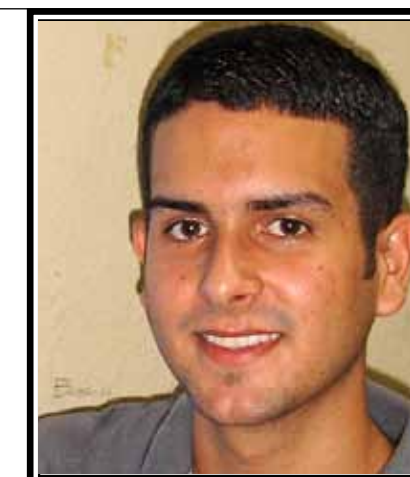
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Mr. Norberto Hernández

Synthesis and Characterization
of Aluminum Thin Films: Crystal Growth

Wilfredo Otaño, Ph.D.

University of Puerto Rico-Cayey



Poster Symposium – August 17- 29

Old Science Building – MMM
8:30– 2:00 Posters on Display

Program – Aug. 30, 2008

New Science Building - Auditorium

8:30 Coffee- Pastries

8:45 Welcoming Remarks –

Gloria Butron Ph.D., UPR-Cayey, Academic Dean
Robert Ross, Ph.D., RISE Program

9:00 Why Do We Need Ph.D.s? A Perspective

Homero Monsanto, Ph.D. – Merck, Sharp & Dohme.

9:20 UPR-Cayey Alumni Speak

From Cayey to Graduate School

Brenda Montalvo, ABD.– UPR- Río Piedras

Amy Brewster, Ph.D. – Baylor School of Medicine

10:20 Succeeding on Your Path in the Biomedical Sciences

José Velázquez, Ph.D. - National Institute of Aging, NIH

11:30 Awarding of Certificates & Prizes

Refreshments will be provided from 9:00 until the end of the session.

Provided by the Chancellor's Office at UPR-Cayey

If you would like to email any of these speakers,
please speak with Robert Ross.



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Ms. Ana Rivera

Synthesis of Magnetic Fe Oxide Nanoparticles for Biological Applications

Christopher Thode, Ph.D.

Penn State University



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Ms. Yaira González

Molecular Transfer Printing:
Cheap & Robust Method for Fabricating
Nanoscale Chemical Patterns

Paul Nealey, Ph.D.

University of Wisconsin –Madison



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Mr. Wilfredo Soto

Morphine Stimulates Lymphangiogenesis
& Metastasis

Kalpna Gupta, Ph.D.

University of Minnesota



#4

Ms. Angiemar Maldonado

Effect of Estrogen on Mast Cell Activation

T.C. Theoharides, Ph.D.

Tufts University



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Mr. Andrés Betancourt

High-Throughput Assay For The Repair Of DNA
Lesions By Human Alkyladenine-DNA Glycosylase
(hAAG).

Barry Gold, Ph.D.

University of Pittsburgh



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Ms. Yamilette Rivera

Determining the Role of IRF5 in DNA Damage
Induced Apoptosis Signaling

Betsy Barnes, Ph.D.

University of Med. & Dent. of New Jersey



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Mr. William Feliciano

A Tale of Two Regions:
A Mathematical Model for Chagas' Disease

Alha Cherif, Ph.D.

Arizona State University



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Ms. Annette Negroni

Possible Effect of an Environmental Metal
on a Model Cell for Amyotrophic Lateral
Sclerosis (ALS)

William Atchison, Ph.D.

Michigan State University

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Ms. Ángela Rivera

Caenorhabditis elegans as a Model
For Neurotoxicology Studies

William Atchison, Ph.D.

Michigan State University



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Ms. Yaritza Suárez

The Affects of
Telomeric Repeat Mutations
On Repair Mechanism

Michael McEachern, Ph.D.

University of Georgia



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Ms. Yaditza Narváez

Control of Polymer Molecular Weight Distributions
Using Atom Transfer Radical Polymerization

Mahesh Mahanthappa, Ph.D.

North Carolina State University



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Mr. Carlos Román

The Effects of Nickel Sulfate
On Sustentacular Cells

Colleen Hegg, Ph.D.

Michigan State University



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Ms. Cláudia Rodríguez

Testing & Optimizations of Planar Membraneless
Microchannel Fuel Cells

Hactor Abruña, Ph.D.

Cornell University



#58

Ms. Solimar Jiménez

Investigation of Chromophore Aggregation, Poling
Ability, and Relaxation of Poled Order in Electro-
Optic Materials by UV-Visible Spectroscopy

Padma Gopalan, Ph.D.

University of Wisconsin



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Ms. Ruth Maldonado

The Role of APC in Thymic Epithelial cells

Nancy Manely, Ph.D.

University of Georgia



#10

Ms. Deylen Aponte

Effect of cold temperature on vein density
and photosynthetic capacity in plants
using a symplastic route of sugar export

Barbara Demmig, Ph.D.

University of Colorado



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Ms. Darimar Hernández

Capillary Electrophoresis for Complex Mixture
Analysis and Stokes Radius Calculation

Luis Colón, Ph.D.

University at Buffalo



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Ms. Valérie Suárez

Cigarette Smoke and
Oxidative Stress Decreases Adiponectin Levels
In 3T3-L1 Adipocytes

RubinTuder, Ph.D.

University of Colorado



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Ms. Sara Armaiz

pH effect on k_{cat} for the WT OMPDecarboxylase & On Site
Directed Mutations of OMPDecarboxylase Catalyzed Decar-
boxylation of 5-Fluoro-Orotidine 5'-Monophosphate

John Richard, Ph.D.

University at Buffalo, SUNY



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Ms. Edmarie Martínez

Presence of Chytrid Fungus *Batrachochytrium*
dendrobatidis in Itasca State Park

Sehoya Cotner, Ph.D.

Univ. of Minnesota

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Mr. David Nachi

Macromolecules' Quenching Modeling
For Photovoltaic Applications

Sankaran Thayumanavan, Ph.D.

University of Massachusetts- Amherst



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Ms. Vanessa Suárez

Reversal of Tumor Resistance to Immune
Cell Killing by a Small Molecule Inhibitor of
Anti-apoptotic Gene Products

Benjamin Bonavida, Ph.D.

University of California - LA



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Ms. Sheyla Benítez

Exploring Synthesis Methods for
Colored Solutions of Silver Nanoparticles

Katie Cadwell, Ph.D.

University of Wisconsin



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Ms. Eileen Rodríguez

R-type Calcium Channels and Inhibitory
Neurotransmission in the
Enteric Nervous System

James Galligan, Ph.D.

Michigan State University



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Ms. *Eníxa Charriéz*

Summer Vertical Migration
of Zooplankton in Lake Itasca, Minnesota

Leif Hembre, Ph.D.

University of Minnesota



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Ms. *Rosan Nieves*

Overexpression of Androgen Receptor
In Breast Cancer Cells

Suzanne Fuqua, Ph.D.

Baylor School of Medicine



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Mr. *Ramón Figueroa*

Dye-Sensitized ZnO Fibers
From Electrospinning and Photovoltaic Cells

Jorge Santiago, Ph.D.

University of Pennsylvania



#16 Ms. *Frances Casillas*

A Role For Nuclear LIMK1
In Breast Cancer Metastasis

Arthur Gutierrez, Ph.D.

University of Colorado



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Mr. *Erick Aponte*

Using siRNA to Understand the Roles
Of Fatty Acid Metabolism
In Peroxisomes versus Mitochondria

Katrina Dipple, Ph.D.

University of California at LA



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Ms. *Roselín Rosario*

High-throughput Cell Surface FMA_t Assay
For LDL Receptor Levels
On Living Human Liver Cells

Lyndon Mitnaul, Ph.D.

Merck Research Laboratory



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Ms. *Rhaisa Castrodad*

N/O₂ Acts through KATP Channels to Persistently
Hyperpolarize Orexin Neurons

Michiru Hirasawa, Ph.D.

Memorial University at Newfoundland, Canada



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Ms. *Frances Rodríguez*

Synthesis Of Gold Nanoparticles
Inside Engineered Ferritin

Ivan Dmochowski, Ph.D.

University of Pennsylvania

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Ms. *Ericka Vélez*

CB2 Agonists Inhibit
Breast Cancer Cell Proliferation *in vitro*
In a non- IL-6 Dependent Manner

Todd Vanderah, Ph.D.

University of Arizona



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Ms. *Ruby Otero*

How Environmental Contaminants
Affect Brain Development

Thomas Zoeller, Ph.D.

Univ. of Massachusetts-Amherst



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Ms. *Rita Medina*

Kinetic Characterization of Catalytic Reactions
By Metal Nanoparticles

Peng Chen, Ph.D.

Cornell University



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Ms. *Francheska Vega*

The Role of Central Dopamine
& BMP-7 in Obesity

Emmanuel Pothos, Ph.D.

Michigan State University



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Mr. Giovanni Cruz

Electron Detachment Dissociation
Of Peptides and Proteins

Gary L. Glish, Ph.D.

University of North Carolina



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Ms. Olga González

Effect of RppH and YhbJ Mutations
On Growth Rates of *Escherichia coli*

Sidney Kushner, Ph.D.

University of Georgia



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Ms. Nashicel Rodríguez

Exploring Nanoslit Devices
With Electrokinetically Driven
Latex Nanoparticles

Kristy Kounosky, Ph.D.

University of Wisconsin



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Mr. Humberto Cruz

Generation of Virus Specific T-cells
From Cord Blood T-cells.

Brent Palmer, Ph.D.

University of Colorado



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Ms. Gloriell Cardona

Evaluating Treatment of Hepatitis C
For Hemolytic Anemia Management

Christopher Kribs-Zaleta, Ph.D.

Arizona State University



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Ms. Orielyz Flores

Single-Wall Carbon Nanotube/Poly(p-Napthe-
neethynylene) Composites as Electrode Materi-
als for Electrical Double-Layer Capacitors

Jorge Santiago, M.D.

University of Pennsylvania



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Ms. Natalia Rodríguez

A Cyclic Compartmental Model Approach to the
Nemesis of Consciousness: Alzheimer's

Abdessamad Tridane Ph.D.

Arizona State University



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Ms. Ivette Tapia

A Single Amino Acid Change
In the nsP1 Protein of Ross River Virus
Affects IFN Induction

Mark Heise, Ph.D.
Univ. of North Carolina at Chapell Hill



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Ms. Glórimar Meléndez

A Tale of Regions:
A Mathematical Model for Chagas' Disease

Christopher Kribs-Zaleta, Ph.D.

Arizona State University



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Ms. Patricia Solíván

Migration of Fibroblasts on Hydrogels
With Stiffness Gradient

Paul A. Janmey, Ph.D.

University of Pennsylvania



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Ms. Noélia Alemar

Synthesis of Quinolines for the Enhancement
of Gap Junction Intercellular Communication
and Anti-breast Cancer

Duy H. Hua, Ph.D.

Kansas State University



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Ms. Jaritza Gómez

Surface Modification
Of ZnO Nanocrystals

Robert Hamers, Ph.D.

University of Wisconsin



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Mr. Jessian Muñoz

Functional Characterization of Human Transient Receptor Potential Channel 7 (hTRPC7)

David Clapham, M.D./Ph.D

Harvard University



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Ms. Milly Ortiz

Size Tunable Ordered Anodic Alumina Template

Qiming Zhang, Ph.D.

Penn State University



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Ms. Maralísi Rivera

Analysis of Small Molecule Ras/Raf Interaction Inhibitor in *C. elegans*

Adrienne Cox, Ph.D.

University of North Carolina



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Mr. José Cotto

Interaction of *Streptococcus gordonii* Adhesin Hsa with Human Platelets

Mark Herzberg, Ph.D.

University of Minnesota



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Ms. Jessica Torres

Rapid Microwave-Assisted Synthesis Of Non-natural Amino Acids

Alexander Deiters, Ph.D.

North Carolina State University



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Ms. Myraída Rodríguez

Effect of Benzamil on Salt-sensitive Hypertension: A Study of Angiotensin II Actions in the Central Nervous System

John Osborn, Ph.D.

University of Minnesota



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Ms. Marívee Borges

Estrogen Modulates Mu-Opioid Receptor Immunoreactivity In The Nucleus Accumbens Of The Female Rat

Annabell Segarra, Ph.D.

University of Puerto Rico-Medical Sciences



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Mr. José Rodríguez

Androgen Deprivation by Activating the Pregnane X Receptor (PXR)

Wen Xie, Ph.D.

University of Pittsburgh



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Ms. Joan Roque

Olfactory Titrations Using Glucosinolates Extracted From Rutabaga

Maria Oliver, Ph.D.

North Carolina State University



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Ms. Myriam Hernández

Localization of Integrin-linked kinase and Associated Proteins in Trophoblast Cells

Daniel MacPhee, Ph.D.

Memorial University of Newfoundland Canada



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Mr. Martín Carrasquillo

Fatty Acids Profile on Different Stages in The Periparturient Period of Dairy Cows

Lorraine Sordillo, Ph.D.

Michigan State University



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Mr. José Peña

Complete Genome Amplification of SIVmne Variants from Intra-Rectally Infected Pigtail Macaques Demonstrating Control of Viremia

J.T. Kimata, Ph.D.

Baylor School of Medicine



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Mr. José Suárez

Optimization of Lentiviral Vector Production for Use in Generation of B Lymphocyte Models

Norbert Kaminski, Ph.D.

Michigan State University



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Ms. Leslie Montañez

Does Down-regulation of Insulin Receptor Affect Cell Cycle Progression in Breast Cancer Cells?

Douglas Yee, Ph.D.

University of Minnesota



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Ms. Koralíz Santiago

Synthesis of a Simple Model for Bacteriochlorophyll c

Jonathan S. Lindsey, Ph.D.

North Carolina State University



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Mr. Leroy Pérez

Synthesis and Characterization of Nicotinic Acid Adenine Dinucleotide 2'-phosphate (NAADP) Analogs

Timothy F. Walseth, Ph.D.

University of Minnesota



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Ms. Lorraine Angeli

Recurrent Insulin-Induced Hypoglycemia Blunts the Counterregulatory Response

V.H. Routh Ph.D.

University of Med & Dent. of N.J.



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Ms. Liz Rivera

Synthesis of Pyrodinopyrones

Duy Hua, Ph.D.

Kansas State University

