

Future Scientists — Since 1998 40 RISE summer interns are pursuing the PhD.

Name of student	Dept. of Degree	Institution of Study
Finns, Samuel	Analytical Chemistry	Corwell U
Abdallah, Faia		U of Buffalo-NY
Martínez, Eaven		U of Florida
Rodríguez, Abelis		U of Indiana
Lebrón, Ariel		U of Arizona
Vicente, Glorimar		U of Buffalo-NY
Brewster, Amy	Anatomy & Neurobiology	UCLA
Sotano, Gaidy		UPR- MS
Rivera, Félix	Biochemistry	UPR- MS
Montalvo, Brenda		UPR- RP
Arnáiz, Guillermo	Cancer Biology	U of Texas- Anderson
Rivera, Jessica	Cell & Molecular - Devel.	Vanderbilt U
Rivera, Charles		U of Wisconsin
López, Linay		U of Michigan
Rivera, Noelia		Vanderbilt U
Rodríguez, Noelia		Vanderbilt U
García, Edgardo	Chemistry	Caltech
Ortiz, Marivi		Corwell U
Tomas, Wildeliz		UPR- RP
Bouilla, Margarita	Genetics & Development	U of Texas, Houston
Bonano, Vivian		Duke U
Citrón, Ariel	Mathematics	Corwell U
Rivera, Rachel	Micro- & Immunology	U of Michigan
Martore, Josli		Tufts Med. School
Valentín, Skitley		UPR
Sánchez, Elia		UPR- MS
Rodríguez, Josefina		Neurology, Neuroscience
Tomas, Annalyn		SUNY NY
Zayas, Roberto		U of Minnesota
Soler, Gilberto		Harvard U
González, Isadora		U of Minnesota
Delgado, Jay		UCLA
Rovats, Jaileen	Organic Chemistry	UPR- RP
Rodríguez, Ezil		UPR- RP
Vallejo, Johana	Pharmacology, Pharmacy	UM-Columbia
Calán, José		U of Minnesota
Morona, Johanna		UPR- MS
Valázquez, Guzmario	Physiology	UPR- MS
Morales, José	Toxicology/Biochemistry	Penn State U
Delgado, Johanna	Wildlife Sciences	U of Texas, Kingsville

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

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

# 17<sup>th</sup> Annual Student Research Symposium

2006

## Program & Symposium Goals

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

(1) inviting scientists to present seminars and workshops,  
(2) having freshmen and sophomore level students conduct research & (3) sending motivated, prepared students to participate in summer programs with established researchers in the United States of America.

Today's symposium follows two weeks of judging by 30 faculty who evaluated poster presentations by students. Their talks presented the results of research at laboratories and universities in the United States and locally. Their projects were conducted under the supervision of a supporting faculty member (mentor) in their labs. Most student 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. Sonia Flores from the Univ. of Colorado 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:

Baylor College of Medicine, Texas  
Case Western Reserve University, Ohio  
Florida State University  
Merck Research Laboratories, New Jersey  
Michigan State University  
NASA - Ohio  
North Carolina State University  
Stony Brook University  
Texas A & M University  
Tufts University, Boston  
University of Buffalo, New York  
University of California - Los Angeles  
University of Colorado  
University of Georgia - Athens  
University of Medicine and Dentistry of New Jersey – Newark  
University of Minnesota  
University of Pennsylvania  
University of Pittsburgh  
University of Puerto Rico - Medical Sciences  
University of Wisconsin-Madison  
Vanderbilt University, Tennessee

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National Institutes of Health grant to  
UPR Cayey – RISE Program (GM59429)  
Research Initiative for Scientific Enhancement  
GlaxoSmithKline Pharmaceuticals, Cidra, PR  
University of Puerto Rico– Cayey



# 55

Ms. *Liliana Colón*

Isolation and In Vitro Analysis of T-box  
Transcription Factors, Tbx1 and Tbx5  
Christopher Brown, Ph.D.  
Vanderbilt University



# 56

Ms. *Amely Vázquez*

Examination of Compressor Discharge Pressure  
Effects on Hybrid Solid Oxide Fuel Cell Turbine  
System Operation Using Hardware Simulation  
David Tucker, Ph.D.  
National Energy Technology Lab, WV

# 58

Ms. *Stephanie Cruz*

Evaluation of Protein Traffic in Yeast: Dynamics of  
FM4-64 dye and a GFP-Snc1p Fusion Protein in a  
Myosin II Deficient Strain  
Ronald Aponte, Ph.D.  
UPR- School of Medicine

# 57

Ms. *Gianni Rodríguez*

Detection of p16 in the Serum of  
HNSCC Patients  
Adriana Baéz, Ph.D.  
UPR- School of Medicine

Thanks to the RISE Staff-

Ms. Evelyn Rodríguez

Ms. Hazel Monserrate

Ms. Jannette Rodríguez

Ms. Laura Rodríguez

Poster Symposium – August 15- 26

Science Building – MMM

8:30– 2:00 Poster Display

Program – Aug. 26, 2006

Morales Carrión - Auditorium

8:30 Coffee- Pastries

8:45 Welcoming Remarks –

*José Caraballo Ph.D.*, UPR-Cayey, Academic Dean &  
*R. Ross, Ph.D.*, RISE Program

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

*Carlos Conde, Ph.D.* – GlaxoSmithKline Pharmaceutical, Inc.

9:20 UPR-Cayey Alumni Speak

From Cayey to Graduate School

*Jessica Rivera* – Vanderbilt University

*Guermarie Velázquez*– UPR- Medical Sciences

10:00 UPR-Cayey Science Faculty Talk about Graduate School

*Wilfredo Otaño, Ph.D.* – Penn State University

*Eneida Díaz, Ph.D.* – Univ. of California- Davis

10:20 Succeeding on Your Path in the Biomedical Sciences

*Sonia Flores, Ph.D.* - University of Colorado

11:30 Awarding of Certificates

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

Provided by the Chancellor's Office at UPR-Cayey



# 1

*Mr. Gustavo Armaiz*

Study of a Evolutionary Conserved Interaction  
Between Moe1 and Cdc48

Erick Chang, Ph.D.

Baylor School of Medicine



#52

*Ms. Carinés Torres*

A Functional MRI (fMRI) Study of  
Adolescent Neurodevelopment

Rebecca L. McNamee, Ph.D.

University of Pittsburgh



# 49

*Ms. Lily Guzmán*

Study of Thermodynamics of Unfolding  
For a Di-iron Protein

Feng Gai, Ph.D.

University of Pennsylvania



#4

*Ms. Angiemar Maldonado*

Caveolar Localization is Important for  
 $\beta$ 1-adrenergic Regulation of L-type  $Ca^{2+}$  Channels  
In Cardiac Myocytes

Robert Harvey, Ph.D.

Case Western Reserve University



# 2

*Mr. Luis Sánchez*

Susceptibility to Atrial Fibrillation  
In Calstabin2 Deficient Mice

Xander Wehrens, Ph.D.

Baylor College of Medicine



# 53

*Ms. Límaris De León*

Cloning and Purification of GroEL, a Potent-  
ial *Xenorhabdus* Toxin Characterization of  
*Xenorhabdus bovienii* Color Variants

Heidi Goodrich, Ph.D.

University of Wisconsin



# 50

*Ms. María López*

Synthesis and Characterization  
Of CdS Nanowires

Ritesh Agarwal, Ph.D.



# 5

*Ms. María Oyolá*

Targeted Deletion of ETS-1/HRE  
Site on Cited2 Promoter

Yu C. Yang, Ph.D.

Case Western Reserve University



# 3

*Ms. María Jiménez*

Role of ZASP in Cardiac Arrhythmia

Matteo Vatta, Ph.D.

Baylor School of Medicine



# 54

*Ms. Aniabelle Amaeó*

Mirna Expression in Myoblast Differentiation

James Patton, Ph.D.

Vanderbilt University



# 51

*Mr. Wilfredo De Jesús*

Melanoma M2/A7 Cells "Feel" the  
Stiffness of Polyacrylamide Gel Substrates

Paul Janmey, Ph.D.

University of Pennsylvania



# 6

*Ms. Xiomaris Cotto*

Fluorescent Protein Fusions:  
An Advanced Imaging Tool for Cell Biology

Michael W. Davidson, Ph.D.

Florida State University



# 7

Mr. José Vélez

Can Pigment Fluxes Give Us Information

About Biogeochemical Processes

In the Gulf of Lion?

Cindy Lee, Ph.D.

Stony Brook University



#46

Mr. Wilfredo Soto

Analysis of Gene Expression

In the Glands of *Cannabis sativa*

David Marks, Ph.D.

University of Minnesota



# 43

Ms. Néjda Lugo

Effect of *Drosophila melanogaster*

Culture Temperature on Heart Rate

Samuel Lieber, Ph.D.

University of Medicine & Dentistry-

New Jersey



#10

Ms. Brendalís Dávila

Nerve Terminal Protein Target in

Lambert Eaton Myasthenic Syndrome (LEMS)

William Atchison, Ph.D.

Michigan State University



# 8

Mr. Elías Nieves

Sub critical/Supercritical Chromatography:

The Effect of Temperature & Pressure

On Chiral Resolution Using CO<sub>2</sub>/MeOH

William R. Leonard, Ph.D.

Merck Research Labs



# 47

Ms. Gloriell Cardona

A Study of the Use of Ferrofluid &

Ferro-wax as a Pumping & Valving Mechanism

Haim Bau, Ph.D.

University of Pennsylvania



# 44

Mr. Luís Suárez

The Effect of Brief Tetanic Stimulation on Opioid-

Induced Preconditioned Skeletal Muscle

Paul Iaizzo, Ph.D.

University of Minnesota



# 11

Ms. Joan Roque

Drug Receptors on Myenteric Neurons

In The Mouse Intestine

James Galligan, Ph.D.

Michigan State University

# 9

Mr. Angel Díaz

Characterization of Transfection Conditions for

Transient Expression of *Homo sapiens* Aryl

Hydrocarbon Receptor in a Human B Cell Line

Norbert E. Kaminski, Ph.D.

Michigan State University



# 48

Ms. Jessica Ortiz

Crack Free PZT films by Sol-Gel Synthesis

Dawn Bonell, Ph.D.

University of Pennsylvania



# 45

Mr. Miguel Ortiz

Estradiol Phosphorylation of cAMP Response

Element-Binding Protein in Striatal Neurons

Paul Mermelstein, Ph.D.

University of Minnesota



# 12

Mr. José Peña

Optical Analysis of Spontaneous Neurotrans-

mitter Released in Mammalian NMJ Exposed

to Different Ca<sup>2+</sup>-K<sup>+</sup> Concentrations

William Atchinson, Ph.D.

Michigan State University



# 13

Mr. *Leonardo Rosario*

Synthesis and Characterization of a New Benzopyrene Bisimide for Multifunctional Applications

Michael Meador, Ph.D.

NASA, John Glenn Research Center



# 40

Ms. *Vimary Bermúdez*

Role of RNase III in RNA Metabolism

Sidney Kushner, Ph.D.

University of Georgia



# 37

Mr. *Santiago Quiles*

Induction of Hepatic HO-1 Protein Expression By Polymerized Hemoglobin

Mark Nicolls, Ph.D.

University of Colorado



#16 Ms. *Jennifer Sepúlveda*

Synthesis of a TAK-779 Gold Nanoparticle Conjugate: A Highly Potent and Selective Inhibitor of HIV-1 Replication

Christian Melander, Ph.D.

North Carolina State University



# 14

Mr. *Ariel Otero*

Regioselective Substitutions Of (S)-Nicotine and Nicotine Derivatives

Daniel Comins, Ph.D.

North Carolina State University



# 41

Mr. *Edgardo Ortiz*

Elucidating the Role of Inducible cAMP Early Repressor in Testicular Function

Carlos Molina, Ph.D.

University of Dentistry and Medicine of New Jersey



# 38

Ms. *Aixa Ortiz*

Epigenetic Control of Zinc Metabolism

Richard Meagher, Ph.D.

University of Georgia



# 17

Mr. *Jessian Muñoz*

GnRH Inhibits Activin-Induced Transcription Complexes On the  $\alpha$ FSH $\beta$  Promoter

William Miller, Ph.D.

North Carolina State University



# 15

Mr. *Harry López*

Production of Recombinant Maize Ubiquitin Conjugating Enzymes in *E.coli*

Becky Boston, Ph.D.

North Carolina State University



# 42

Ms. *Mary C. Quiñones*

Search for Sequence Polymorphisms in the tdeA in *Actinobacillus actinomycetemcomitans*

Scott Kachlany, Ph.D.

University of Dentistry and Medicine of New Jersey



# 39

Ms. *Myrna Huertas*

Developmental Requirements for the Proprotein Convertase *amon*

Michael Bender, Ph.D.

University of Georgia



# 18

Ms. *Lisandra Santiago*

Diffusionless Electrochemistry of Dehaloperoxidase Electrostatically Adsorbed to Alkanethiol Self-Assembled Monolayers

Edmond Bowden, Ph.D.

North Carolina State University



# 19

*Ms. Magaly Ramírez*

Catalytic C-S Bond Formation by  
Monomeric Copper(I) Sulfido Complexes

T. Brent Gunnoe, Ph.D.

North Carolina State University



# 34

*Ms. Lou Ann Hall*

Fluorescence Microscopy in *Mycobacterium bovis*  
BCG as a Model for Dormant *M. tuberculosis*

Martin Voskuil, Ph.D.

University of Colorado



# 31

*Mr. Emanuel Rivera*

Analysis of Phosphorylated Nucleoside Reverse  
Transcriptase Inhibitors Using Ion Exchange  
Liquid Chromatography

Luis Colon, Ph.D.

University of Buffalo



# 22

*Ms. Darimar Hernández*

Responsive Polymer-Nanoparticle Composites  
For Tunable Optical Properties

Chris Keating, Ph.D.

Penn State University



# 20

*Mr. Ricardo Arribas*

Physical Responses of *Physalis* Leaves  
To *H. sublexa* Eggs

Fred Gould, Ph.D.

North Carolina State University



# 35

*Ms. Lymarta González*

Wnt 7a/ Fzd 9 and PPAR $\gamma$  Co-operate to Reverse  
The Transformed Phenotype Seen in NSCLC

Robert Winn, M.D.

University of Colorado



# 32

*Mr. Gerardo Vázquez*

Vessel Dilator: Does It Exacerbate Pulmonary  
Hypertension or Improve  
Right Ventricular Function?

David Irwin, Ph.D.

University of Colorado



# 23

*Ms. Carol Rivera*

Expression of the Prolactin Receptor (PRLR)  
In the Porcine Uterus

Fuller Bazer, Ph.D.

Texas A & M University



# 21

*Mr. Alexis Pereira*

Chemical Deposition with Non-aqueous  
Solution of Aluminum Nanowire

At Room Temperature

Moses Chan, Ph.D.

Penn State University



# 36

*Ms. Melisa Villegas*

Yeast two-hybrid Analysis of the Interaction  
Between L1 encoded Proteins ORF1 & ORF2

Sandy Matin, Ph.D.

University of Colorado



# 33

*Mr. José Suárez*

Characterization Of Ese-1 Protein Levels  
In Normal and Transformed  
Mammary Cell Lines

Arthur Gutiérrez, Ph.D.

University of Colorado



# 24

*Ms. Olga González*

Single-minded 2s Maintains  
Epithelial Differentiation

Weston Porter, Ph.D.

Texas A & M University



# 25

*Ms. Roselín Rosario*

The Down Syndrome Associated Gene,  
Singleminded-2, Plays a Putative Role  
In Trisomy 21 Induced Obesity and Diabetes

Weston Porter, Ph.D.

Texas A & M University



# 28

*Ms. Rosalyn González*

Effects of the Relocation of S $\mu$ TR Sequences on  
Targeting Somatic Hypermutation &  
Class Switch Recombination

Eric Selsing, Ph.D.

Tufts Medical School



# 26

*Mr. Aníbal Rivera*

Molecular Mechanisms Mediating the  
Modulation of the Limbic System  
By Brain Derived Neurotrophic Factor

Maribel Ríos, Ph.D.

Tufts Medical School



# 29

*Mr. Angel Ortiz*

Sptlc2 & Glucose Metabolism

Karen Reue, Ph.D.

University of California - Los Angeles



# 27

*Mr. Héctor Flores*

Mutation of SKAP55 and Its Effects in the  
SLP-76 Containing Complex Formation &  
T-cell Activation

Stephen Bunnell, Ph.D.

Tufts Medical School



# 30

*Ms. Viviana Orozco*

Neuronal Density Measurements Following  
Traumatic Brain Injury

Fernando Gómez, Ph.D.

University of California - Los Angeles

