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Future Scientists — Since 2004 30 RISE summer interns are pursuing the PhD.

Name of Student	Dept. of Study	Institution of Study
Ivonne M. Ferrer	Analytical Chemistry	Buffalo
Lisandra Santiago		Buffalo
Alenis Rodriguez		Purdue
Andres Betancourt	Biomedical Science	U of California, San Diego
Olga D. Gonzalez		UMD New Jersey
Guermarie Velazquez	Cancer Biology	Texas A&M
Xiomaris Cotto	Cell and Molecular Biology	NYU School of Med.
Roselin Rosario	Chemistry	New Jersey, Rutgers
Mary C. Quiñones		North Carolina State
Jesus Velazquez		UNY Buffalo
Leiddy Z. Alvarado		Purdue
Roberto Martinez		UPR RP
Ramon Figueroa		UPR RP
Vimary Vazquez		UCLA
Orielyz Flores		Univ. of Central Florida
Frances Rodriguez		Calf. Institute Technology
Isamar Ortiz		Penn State
Joan Roque	Chemical Education	North Carolina State
Jose O. Cotto	Dentistry (DDS/PhD)	Uni. Of Minnesota
Hector Colon	Math Ed	UPR Rio Piedras
Natalia Rodriguez	Meteorology	Florida State
Dennise A. de Jesus	Microbiology	Tufts University
Eydhith Comenencia		Tufts University
Olgary Figueroa		UPR- Medical Science
Tanya M. Cruz		Rochester NY
Yadilette Rivera		Univ. of Massachusetts
Eileen S. Rodriguez	Neuroscience	Michigan State Univ.
Jessica Torres	Organic Chemistry	North Carolina State
Suheiry Caban	Psychology	California State
Jessian L. Muñoz	Stem Cell Biology (MD/PhD)	UMD New Jersey

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

24th Annual Student Research Symposium

2012

Brochure by MORE - RISE Program

August 21- Sept. 1

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) 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 27 faculty who evaluated 54 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. Poster numbers 1-54 are on the second and third floor of the North Science Building.

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. Homero Monsanto from Merck Sharp & Dohme Carribean will speak on 'Why do We need Ph.D.s?' And Ms. Wendy Pacheco from the Ponce School of Medicine will speak on 'How to apply for the Ph.D.'

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

Research Experiences –

44 of these summer internships were totally sponsored by host universities.

18 of these summer interns were researchers last summer in 2011.

Financial Support & Mentoring were provided by the following institutions:

Baylor College of Medicine
City of Hope
Medical College of Virginia Hospitals
Michigan State University
North Carolina State University
San Jose State University
Scripps Research Institute- La Jolla
The Pennsylvania State University
The State University of New York- Buffalo
Tufts University, Boston
University of Calif.-San Diego
University of Colorado
University of Georgia - Athens
University of Medicine and Dentistry of
New Jersey – Newark
University of Michigan
University of Minnesota

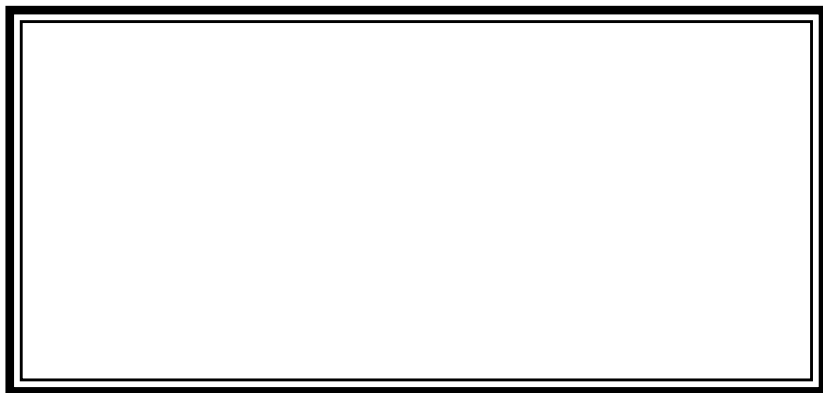
University of North Carolina at
Chapel Hill
University of Notre Dame
University of Pennsylvania
University of Wisconsin-Madison
Virginia Commonwealth University
Western Michigan University

Financial support to coordinate all student activities were provided by:

National Institutes of Health grant to UPR Cayey – RISE Program
(R25 GM59429-14)
Research Initiative for Scientific Enhancement

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Thanks to the RISE Staff- Ms. Carmen Rodriguez & Ms. Noelia Lopez
and RISE Coordinators- Dr. Eneida Díaz & Dr. Elena González

Thanks for the collective effort of 27 Science Faculty
who interviewed & judged 54 posters.

Dr. Ana Acevedo
Dr. Belinda Román
Dr. Carlos Ortiz
Dr. Carlos Ricart
Dr. Chad Lozada
Dr. Edgardo Rivera
Dr. Edwin Vázquez
Dr. Elba Reyes
Dr. Elena Gonzalez
Dr. Emmanuel Irizarry
Dr. Eneida Díaz
Dr. Jairo Pardo
Dr. Javier Arce
Dr. Marcos Echegaray

Dr. Mayra Pagán
Dr. Mercedes Rivera
Dr. Michael Rubin
Dr. Noel Caraballo
Dr. Raúl Pérez
Dr. Ricardo Chiesa
Dr. Roberto Marrero
Dr. Rosa Torres
Dr. Vibha Bansal
Dr. Victor Pantojas
Dr. Wilfredo Resto
Dr. Zuleika Medina
Prof. Felix Velazquez

Poster Presentations – August 21- 30 North Science Building 2nd & 3rd floors

Program – Sept. 1, 2012 Science Building- Auditorium

8:30 Coffee- Pastries

8:45 Welcoming Remarks –

Juan Varona, D.Ed., UPR-Cayey, Chancellor

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

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

9:20 How to apply for the Ph.D.

Wendy Pacheco – Ponce Medical School

9:50 UPR-Cayey Alumni Speak

From Cayey to Graduate School

José Molina, Ph.D. – Academic Dean

Héctor Colón, Ph.D. – PR Department of Health

Wilfredo Resto, Ph.D. – Chemistry Director

Olga Gonzalez – New Jersey Medical School

11:20 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. Alberto Cintron

Glial Cell Line-derived Neurotrophic
Factor Expression in Hearts
of Aging and Exercised Rats
John Spitsbergen, Ph.D.
Western Michigan University



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Ms. Valeria Rivera

Can Colonic Regulatory T Cells from Mice Infected
with *H. polygyrus bakeri* Block Colitis in A IL 10KO
Model of Inflammatory Bowel Disease
Joel Weinstock, M.D.
Tufts Medical School



2

Ms. Ana Rosario

Expression of Duffy Antigen Receptor
for Chemokines and Duffy Null Phenotype
in Breast Cancer
Melissa David, Ph.D.
Univ. of Georgia



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Ms. Veronica Colón

Identification of Nanomaterial Complexity and
Synthetic Optimization of Carbon Nanoparticles
Derived from Carbon Fibers
Ivonne Ferrer
Univ. of Buffalo

3

Ms. Andrea Hernandez

AMY1 Receptors Decreases
Prepulse Inhibition in Rats

Sarah Baisley, Ph.D.
Univ. of Wisconsin - Madison



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Ms. Vivian Rodriguez

Assess the Sonic Hedgehog Pathway in the
Development of Human Mesenchymal Stem
Cells to Dopamine Neurons
Pranela Rameshwar, Ph.D.
Univ. of Med. & Dent. of New Jersey



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Mr. Pedro Rodriguez

Characterization of SRSF3
Hepatocyte Knock-out Mice

Nicholas Webster, Ph.D.

Univ. of California - San Diego



#4

Ms. Angelica Gonzalez

The Effect of the Aurora Kinases
On the Transcriptional Activity
Of the Androgen Receptor

Daniel Gioeli, Ph.D.

Univ. of Virginia



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Ms. Rossana Colón

Regulation of LFA-1 Levels and
Toxic Mediated Cell Death by Leukothera

Scott Kachlany, Ph.D.

Univ. of Med. & Dent. of New Jersey



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Mr. Antonio Romero

Synthesis of Amphiphilic Nanocapsules
From Molecular Brushes

Javid Rzayev, Ph.D.

University of Buffalo



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Ms. Stephanie Santos

The Separation of Oil from Tar Sands using
Ionic Liquids

Paul Painter, PhD

Penn State University



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Ms. Astrid Díaz

Mechanisms of
Progesterone-mediated Regulation of LRH
in T47D Breast Cancer Cells

Carol Sartorius, Ph.D.

Univ. of Colorado



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Mr. Bryan Vicente

Analysis of Rta and RBP jk Binding Specification
in KSHV Reactivation

Olga Gonzalez

University of Med. & Dent. of New Jersey



#46

Ms. Nicole Colón

Characterizing Auxin Biosynthetic Mutants
in *Arabidopsis thaliana*

Jose Alonso, Ph.D.

North Carolina State University



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Mr. Bryan Velez

Analysis of Rta and RBP jk Binding
Specification in KSHV Reactivation

Dawn Bonell, Ph.D.

University of Pennsylvania



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Mr. Omar Padilla

Electron Transport under Soft Confinement in
Organic Semiconductor Mixtures

Enrique Gomez Ph.D.

Penn State University



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Mr. Carlos Santos

Dax 1 and WT 1:

Novel Regulators of the LHB Transcription

Margaret Shupnik, Ph.D.

University of Virginia



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Mr. Pablo Gonzalez

Development and Assessment of a 2-D Model
to Demonstrate Crystal Structure

Defects in Copper

Kermin Martinez, Ph.D.

University of Wisconsin - Madison



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Mr. Miguel Cuevas

Testing the Effect of β -1,3 Glucanase on Fluconazole Sensitivity in the Biofilm of Different *Candida* Species or Strains

David Andes, Ph.D.

Univ. of Wisconsin - Madison



#10

Mr. Carlos Baez

Rich Lyotropic Phase Behavior Of Sulfonium Gemini Surfactants

Mahesh Mahanthappa, Ph.D.

University of Wisconsin - Madison



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Ms. Nasla Duran

Bioconjugation of Fluorescent Nanoparticles with Target Molecules for Human Breast Cancer

Jenneth Layou, Ph.D.

Penn State University



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Ms. Carolina Montañez

GnRH Signaling Pathway In Induction of LH

Djordjica Coss, Ph.D.

University of Calif. - San Diego



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Ms. Natalia Rivera

Functional Polypropylene: Synthesis, Thin Film Processing and Applications

Mike Chung, Ph.D.

Penn State University



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Ms. Claudia Colon

Importance of Cysteines in DksA Mediated Antioxidant Defenses of *Salmonella enterica* serovar *Typhimurium*

Andres Vazquez, Ph.D.

University of Colorado



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Ms. Cristina Cruz

Graphene Nanocomposites
For Anti-Corrosion Applications

Sarbajit Banerjee, Ph.D.
Univ. of Buffalo



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Mr. Lysander Borrero

Regulation of Glutamate Receptors by
WDR Proteins in *Caenorhabditis elegans*

Caroline Dahlberg, Ph.D.
Tufts University



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Mr. Debbie Espada

Determining the Role of Kinesin-13s in
Establishing Neuronal Microtubule Polarity

Melissa Rolls, Ph.D.
Penn State University



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Ms. Maria Huertas

AMPK and its Possible Role as a
Therapeutic Target for the Neurodegenerative
Disease Mucopolysaccharidosis type IV
Rob Onyenwoke, Ph.D.

Univ. of North Carolina - Chapel Hill



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Ms. Delanie Colon

Activation of Acetylcholine in
Retinal Ganglion Cells Leads to
Cell proliferation

Cindy Linn, Ph.D.

Western Michigan University



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Ms. Mariela Gines

Bioinformatics Analysis:
DNA Repair Genes in Nucleocytoplasmic
Large DNA Viruses

Steven Massey, Ph.D.

Univ. of Puerto Rico - Río Piedras



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Mr. Luis Perez

Using the NLG-1 GRASP Marker to Investigate the Role of Sensory Activity in Synaptic Partner Recognition in *Caenorhabditis elegans*

Miri VanHoven, Ph.D.

San Jose State University



#16

Ms. Dorianmarie Vargas

Phenotypic Analysis of Thymus following TEC-specific Androgen Receptor Deletion

Chris Coopen, Ph.D.

Univ. of Georgia



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Mr. Luis Rodriguez

Inhibition of SK-Mel-28 Cell Proliferation by Recombinant Mojastin (r-Moj) Disintegrins

Julio Soto, Ph.D.

San Jose State University



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Mr. Elías Pabón

Tyrosyl Radical Formation in Dehaloperoxidase: Sacrificing Substrate Reactivity for Enzyme Stability

Reza Ghiladi, Ph.D.

North Carolina State University



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Ms. Lyanne Rolon

Regulation of Neurotrophic Factor Expression in Skeletal Muscle

Brenda Marrero Rosado, Ph.D.

Michigan State University



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Mr. Eliezer Perez

Mending a Broken Heart: Compound 'B' Signaling in Endothelial Cells

Margaret McCormick, Ph.D.

University of North Carolina



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Mr. Elvin Morales

Understanding Cellular Changes/dynamics
Post-gentamicin Induced Kidney Injury
in Adult Zebrafish

Rebecca Wingert, Ph.D.
University of Notre Dame



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Mr. Kevin Torres

Mathematical Models Applied to
Biomedical Problems

John Goudreau, Ph.D.
Univeristy of Iowa



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Mr. Gabriel Perez

Identifying Protein Interactions with the
N-terminus of Progesterone Receptor

Dean Edwards, Ph.D.
Baylor College of Medicine



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Ms. Laura Rivera

Hox Genes Expression During
Hindlimb Development of *Anolis sagrei*

Douglas Menke, Ph.D.
University of Georgia



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Ms. Gabriela Ortiz

Novel drugs of Selectively Inducing
DNA- protein Cross- links are Cytotoxic in
Human Fibrosarcoma Cells

Colin Campbell, Ph.D.
University of Minessota



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Mr. Lester Rosario

Age-dependent Changes in Cytokine
Responses of Myeloid Dendritic Cells
in Response to TLR Stimulation

Kara Jensen, Ph.D.
Univ. of North Carolina-Chapel Hill



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Ms. Kamille Camacho

Dietary Fat Metabolism in Obesity and Reduced-Obesity: Methods to Determine the Trafficking of Dietary Fatty Acids in Oxidative Tissues

Audrey Bergouignan, Ph.D.

University of Colorado



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Ms. Ivelisse Cruz

The Effects of Chronic CMethylmercury Treatment on Mitochondrial Function and Cell Viability in SH-SY5Y Cells

Bill Atchison, Ph.D.

Michigan State University



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Ms. Karina Gonzalez

The Function of Genes in *Caenorhabditis elegans* Vulva Morphogenesis

Wendy Hanna, Ph.D.

Penn State University



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Ms. Jaylissa Torres

Synthesis of Superconducting-ferromagnetic Segmented Sn/Co/Sn Nanowires

Moses Chan, Ph.D.

Penn States University



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Ms. Karina Nieves

Kinetic Measurements of PtdIns (3,4,5) P3 Dephosphorylation by PTEN in Model Membranes

Tobias Baumgart, Ph.D.

University of Pennsylvania



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Ms. Jennifer Ocasio

Detection of Nitric Oxide with a Modified Diamond Microelectrode (DME)

Greg Swain, Ph.D.

Michigan State University



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Ms. Jessica Díaz

The Role of Innate Immune Sensors
in the Retrovirus-specific Antibody Response

Mario Santiago, Ph.D.
University of Colorado



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Mr. Joshua Rosario

Voltage-gated Calcium Channels on
Enteric Inhibitory Neurotransmission

James Galligan, Ph.D.
Michigan State University



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Mr. José Pagan

Analysis of Persistent Halogenated Compounds in
Air Particulate Matter

Diana Agaa, Ph.D.
University of Buffalo



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Mr. Juan Feliciano

Tissue Factor and its Regulations

Wolfram Ruf, Ph.D.
Scripps Research Institute



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Mr. Joseph Perez

Expression of Nuclear Lamins
in Chick Development

Dennis Discher, Ph.D.
University of Pennsylvania



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Mr. Juan Torres

Analysis of N0 Specificity of TALE DNA
Binding Proteins

Brian Lamb, Ph.D.
Scripps Research Institute

