



Research Initiative for Scientific Enhancement (RISE)

College of Arts and Sciences | Fall 2015

ABOUT THE PROGRAMS

The RISE program is supported by the National Institutes of Health to provide research opportunities for students. RISE students major in biology and chemistry and are paid an hourly wage to carry out research with faculty on-campus during the semesters and off-campus during the summers.

The RISE program supports the ROADS Research Club. The club provides authentic group research experiences for freshmen and sophomores in the sciences.

Contact Dr. Michael Robinson at 305.899.4930, mprobinson@barry.edu, or visit www.barry.edu/mbrsrise/programactivities/roads.

New students can apply to ROADS through their MyBarry account.

Contact Dr. Flona Redway at 305.899.3542 for further information or visit the web site listed below:
www.barry.edu/rise

Flona Redway, PhD,
RISE Program Director
Michael Robinson, PhD,
ROADS Coordinator
Norma Barrera, BS,
RISE Administrative Assistant

Welcome RISE Administrative Assistant

In this edition we welcome Norma Barrera, as the new administrative assistant to the RISE program. Norma comes from Texas and is already acclimated to the humidity. She graduated from the University of Texas at El Paso with a Bachelor's degree in Marketing and International Business. Norma joined the program in January 2015. Welcome!



Welcome New RISE Students



Pictured from left to right: Joshua Kelly (Biology - junior), Gabriela Hernandez (Biology - sophomore)

Welcome new STEM coach

We also welcome Joyce D. Varela, the Academic STEM Coach. Joyce provides academic support and encouragement to students majoring in biology, chemistry, math, computer science, and other related disciplines. As the Academic STEM coach, she guides STEM students toward academic success by enhancing their overall student experience and directing them to campus and community resources. Joyce graduated from Nova Southeastern University with an M.S. degree in Marine Environmental Science/Coastal Zone Management.



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ROADS Research Club: Research Experience and More



Extracting protein from cricket gonads

During the 2014-15 academic year the members of the ROADS research club investigated the relationship between two indices of quality as a potential mate in male house crickets, *Acheta domesticus*. The student researchers found that genetic quality (asymmetry) and gonad quality (protein content) were correlated in males indicating that there was no apparent trade-off. Thus females can choose males with good genes while not paying a cost in the fertilization rate of their eggs, a trade-off often seen in other animals. Over the course of this year, the mostly freshman club members developed basic research skills including dissection, protein analysis, and morphometric data collection. In the spring the club members submitted the research to local and statewide scientific meetings. In February 2015, Shyaira Dineen, Basha Gerstenfeld, Gabriela Hernandez, and Pedro Sanchez traveled to Embry-Riddle Aeronautical University in Daytona Beach, FL, and presented the club's research at the fifth annual Florida Undergraduate Research Conference. The poster which was titled "Does fluctuating symmetry predict gonadal quality in house crickets (*Acheta domesticus*)?" was co-authored with these other ROADS members: Eva Paulus, Nistal Aguilar, Ashley Bratcher, Natalie Govea, Rebecca Hernandez, Alaina Mitchell, Paola Montenegro, Elizabeth Rodriguez, Riann Zabaleta & Dr. Michael Robinson. Further data collection and analysis in the spring resulted in the follow-

up abstract "Trade-offs in mate choice: female house crickets (*Acheta domesticus*) pay no cost by mating with sexy males presented at Barry's 7th Annual STEM Symposium. The additional contributions of Gabriela Lin, Celia Oni, Shakore Whitter, Hannah Gokingco, Bianca Sanon, Aris Johnson and Josh Pass were reflected in their addition as co-authors to this poster. ROADS member Gabriela Hernandez was accepted into the RISE program beginning Summer of 2015. In addition to the research current ROADS students are presenting, recent past members of ROADS and current RISE students Kamren Livingston & Diana Cordero traveled to the National Conference on Undergraduate Research, in Spokane, WA, in April to present some previous ROADS work entitled "Vocalizations as a possible signal of genetic quality in male house crickets (*Acheta domesticus*).". At the same meeting, Dr. Redway made an oral presentation on an analysis of the effectiveness of ROADS. Finally, six ROADS members attended an April performance of Dvořák's Eighth Symphony among other pieces at the Adrienne Arsht Center as part of ROADS' cultural experience.



Dr. Robinson and ROADS club members at FURC



ROADS club members after orchestra.

Student & Faculty Refereed Publications

George Fisher. Climate Science: More Than Just a Weather Report, published in "Celebrating Chemistry – 2015 CCED" edition, page 2, April 2015.

George Fisher. Collecting Particles from Air, published in "Celebrating Chemistry – 2015 CCED" edition, page 8, April 2015.

Daria Vasilyera, Pairat Dolinsky, Shashana Fielder, **Alice Nakasone**, Gerhard Packert, **Xiaotang Hu**. Inhibition of cdc2 is linked to PMA-induced cell differentiation published in "Proceedings of American Association of Cancer Research" Volume 56 page 981, April 2015.

Alumni Profile – Ileana Pazos, PhD (RISE '05 and MARC '07)



Ileana Pazos

Ileana Pazos, better known as Lali, successfully defended her Ph.D. in Physical Chemistry at the University of Pennsylvania (May '15). Her thesis research, entitled Spectroscopic Probes of Protein Structure, Dynamics, Hydration and Electrostatics,

yielded 8 peer-reviewed publications along with 3 others in preparation and multiple oral and poster presentations. She was awarded the highly competitive National Science Foundation Graduate Research Fellowship (NSF GRFP) which provides tuition and stipend for three years of graduate studies. While her interest lies in a broad range of biophysical topics, she is especially interested in the development and application of non-natural amino acids as probes to site-specifically interrogate protein structure using an assortment of laser spectroscopic techniques. Lali's career started at Barry and she attributes her success directly to the professors, mentors and friends she met there. Lali graduated with a double major in Chemistry and Mathematics and a minor in Physics (Dec '07). One of her most academically enriching experiences in undergraduate was her involvement in the Minority Biomedical Research Support Research Initiative for Scientific Enhancement (MBRS RISE) (Aug '04- Dec '05) and the Minority Access to Research Careers (MARC) programs (Dec '05- Dec '07). Her on-campus research in the Chemistry Department with Irina Struganova, Ph.D. focused on the autocatalytic aggregation of cyanine dyes using NMR analysis and computer simulation. She enjoyed her four off-campus summer internships in a variety of chemistry topics at the National Institute of Science and Technology, Virginia Tech, Bayer Material Science and the National Institutes of Health. All of her research experiences were motivating factors in her decision to pursue a research career in chemistry. Mentorship and community outreach, in addition to academic coursework and research, are the foundation of a career in science. Lali fondly admired and has sought to emulate the generosity of the students and faculty at Barry to volunteer and

promote science literacy in their community, especially among women and minorities. While at Barry, she served as president of the Chemistry Club and helped organize many outreach events such as chemical magic shows at local elementary schools. Lali continued her community involvement as the Chair of Outreach for the University of Pennsylvania Women in Chemistry group where she organized and/or participated in several events. These events included a biannual Philadelphia Area Girls Enjoying Science at Chestnut Hill College, weekly Saturday Science Education Academy in West Philadelphia and conducted science demonstrations for the Upward Bound Program and Philadelphia Science Festival Events.

Even today Lali maintains close contact with friends that she met during her study at Barry. Two of her best friends were also minority women striving for high academic achievement: Carolina Pombo, PhD (RISE/MARC '05) and Michelle Phelps, MD, PhD (RISE '06). They both served as valuable peer-mentors and a support network through the transition from undergraduate to graduate studies.



2007 from left to right: Carolina Pombo, Ileana Pazos and Michelle Phelps

Lali married her partner, Robert, on August 7 and they enjoyed a honeymoon in Spain and France. Afterwards, they will move to the Washington, D.C. area where she will start a postdoctoral position at the National Institute of Science and Technology.

Nicole H. Lopez, BS (RISE 2014) "Barry University's Biology Department, along with the RISE and MARC program, instilled in me the knowledge, confidence, and courage to pursue my dream of becoming a biomedical science researcher. To my Barry family, thank you" PhD Program, Georgia Regents University



Student Accomplishments

Bertina Telusma (RISE), received the American Chemical Society POLYED Undergraduate Award for Outstanding Achievement in Organic Chemistry for spring 2015. She was also placed on the President's List in recognition of her academic achievement earning a 4.0 GPA during spring 2015 term.



Diana Cordero (RISE), received the Physical Sciences Honor Scholarship for spring 2015.

Diana Cordero (RISE), **Joshua Kelly (RISE)**, and **Mariana Ruiz (RISE)** were placed on the Dean's List in recognition of their academic achievement earning a 3.5 or greater GPA during spring 2015 term.



Shanika Kingston (RISE) received an award in biology at the 7th annual Science Technology Engineering and Math (STEM) Symposium, April 1, 2015 at Barry University. RISE students made 11 poster presentations on their Barry and summer research.



On January 23, 2015 **Kamren Livingston**, **Shanika Kingston**, **Diana Cordero**, **Bertina Telusma**, **Wesam Azaizeh**, Dr. Redway and Dr. Bingham were invited to participate at the Diversity Visitation Event for Research and Graduate Education (DiVERGE) in the Scripps Research Institute in Jupiter, FL. Students toured the facilities and learned of the diverse research opportunities at the institute.

Faculty Accomplishments

Dr. Tang Hu, Professor of Biology, Department of Biology, College of Arts & Science, co-presented (with RISE student, Alice Nakasone) a poster, entitled "Inhibition of cdc2 is linked to PMA-induced cell differentiation" at 2015 AACR (American Association of Cancer Research) Annual Meeting (Philadelphia, PA, April 18-22) and published the abstract for the poster in the Proceedings of American Association of Cancer Research (56: 981, 2015); reviewed 2 manuscripts for the journal of Marine Drugs (MS ID: 8626#, MS ID 8626#R); reviewed 1 manuscript for the journal of Cytokine (MS ID: CYTO-15-18#).

Dr. Fisher presented at the 249th ACS national meeting, Denver, CO, March 23, 2015, with Ramon Gutierrez, Ayelet Delascagigas, and Travis Comnick, "Analysis and Quantification of D-Aspartic Acid in Marine Bivalve Mollusks."

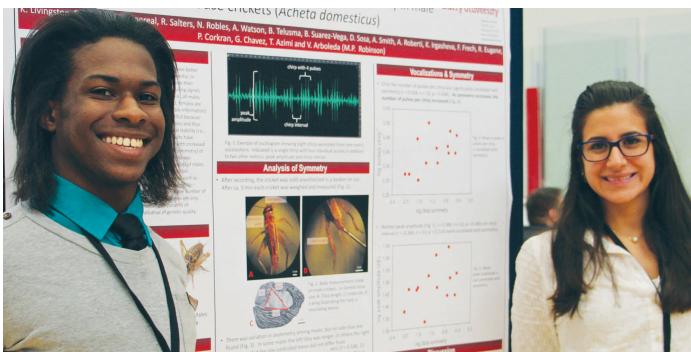
Dr. Hengartner presented a research poster at the 115th General Meeting of the American Society of Microbiology, May 30-June 2, 2015, New Orleans, LA. The presentation, "Analysis of Biofilm Production in *Staphylococcus*" was also co-authored by wJ. Fiedler, F. Lin, A. Nakasone (RISE), J-A. Chinloy, P. Rodriguez, S. Fiedler, D. Packert, L. R. Vega, G. Packert.

Dr. Redway made an oral presentation at the FAN session at the 29th National Conference on Undergraduate Research, April 16-18, 2015, Spokane, WA. The presentation "Assessing the effect of an early research experience" was also co-authored by Dr. Brenda Schoffstall, Dr. Emily Arcia and Dr. Michael Robinson

Student Attendance & Presentations at Scientific Meetings



The 5th Annual Florida Undergraduate Research Conference, Daytona Beach, FL February 27-28, 2015. RISE students Kevin Williams, Kamren Livingston, Mariana Ruiz, Bertina Telusma and Diana Cordero and five ROAD club members made poster presentations.



The 29th National Conference on Undergraduate Research (NCUR), Eastern Washington University, April 15-19, 2015. RISE students Diana Cordero and Kamren Livingston made poster presentations.

American Association for Cancer Research (AACR), Philadelphia, PA, April 19-21, 2015. RISE student Alice Nakasone attended the conference.

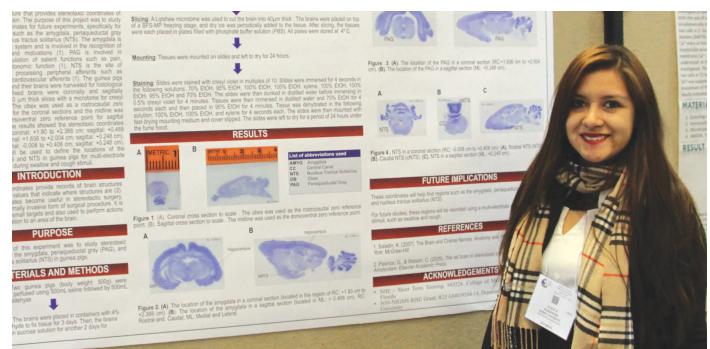


Barry University hosted the **7th Annual Science, Technology, Engineering and Math (STEM)**, April 1, 2015. Undergraduate students presented posters related to their past and current research in biology, chemistry, computer science, information technology, mathematics,

psychology and physics. A total of 12 posters by RISE and ROADS students and close to two hundred and fifty participants and attendees in the STEM symposium.



The 249th American Chemical Society National Meeting and Exposition (ACS), Denver, CO, March 21-25, 2015. RISE student Diana Cordero and Shanika Kingston made poster presentations.



Experimental Biology, Boston, MA, March 28-30, 2015. RISE student Alice Nakasone made a poster presentation.

Alumni Updates

Blandine Victor (RISE '11) completed his first year in the MS program at University in Pittsburgh, PA and is preparing for her comprehensive exam. Victor has co-authored publications in the Journal of Immunology and Journal of Virology: J Immunol 2015 195:994-1005; Prepublished online 26 June, 2015; Journal of Virology 2015 Volume 89 Number 8: 4690-4695.

Cynthia Carrasco-Tenant (MIRT '97) has been accepted for the MSN-FNP track at Gonzaga University in Spokane, WA. She is currently a Managing Editor on the Hematology/Oncology team at Clinical Care Options.



Davecia Cameron (MIRT/MARC '02) is a Managing Editor on the Hematology/Oncology team at Clinical Care options. She is responsible for creating the scientific content of many of the educational programs. She works with key opinion leaders in the field to produce quality continuing education for health care professionals. Davecia and her husband Matthew recently celebrated their 8th anniversary earlier this year and have a two-year-old daughter named Kira and a five-year-old boy named Kai.



Hans Saint-Eloi Cadeley, (MARC '08) successfully defended his dissertation on April 29, 2015. Hans has accepted a faculty position as an Assistant Professor at the University of Rhode Island in the Department of Human Development and Family Studies. He began the position fall 2015.

Mabel López, PhD, (MARC '96) is the owner of Mind and Brain Care, a mental health clinic, that has been named a top woman owned clinic in southwest Florida. There are two locations, Ft Myers (est 2010) and Cape Coral (est 2013). Mabel continues to serve as a Board of Trustee member for the Alvin A Dubin Alzheimer's

Resource Center, a Florida Supreme Court appointed member of the Unlicensed practice of Law Committee, and a Board Representative for the Calusa chapter of Florida Psychological Association. She has two beautiful daughters (ages 2 and 9), and is a member of New Hope Presbyterian Church (Ft Myers) and volunteers for ECHO (North Ft Myers), a Christian organization dedicated to fighting world hunger.

Michelle M. Phelps, MD, PhD, (RISE '06) received her MD from Vanderbilt University School of Medicine ('11). Thereafter, she completed a one year internship in orthopedic surgery at Baylor College of Medicine ('12). She graduated in May 2015 with her Ph.D. in Biology from the University of North Carolina at Charlotte. Michelle will return to residency in orthopedic surgery at Baylor College of Medicine July 2015.

Carolina Pombo Martinez, PhD, (RISE '05) successfully defended her dissertation on July 2 and was officially awarded the PhD degree August 7th. The title of her dissertation is "Expression of PD-1, CD160 and 2B4 on CD8 T cells during HIV infection: Markers of exhaustion?" Carolina accepted a position as Science Communications Assistant in AlphaBioCom.

Monica Barreto, MS, (MARC '11) is entering the third year of her doctoral program at Western Michigan University in Clinical Psychology. She is studying the effectiveness of acceptance and commitment therapy as a brief intervention for health related behaviors. Monica was awarded the National Science Foundation (NSF) funded, WMU- Graduate Education and the Professoriate (GEP) fellowship. This fellowship aims to further the graduate education of underrepresented STEM students through the doctorate level, preparing them for fulfilling opportunities and productive careers as STEM faculty and research professionals.

Nicole H. Lopez, BS, (RISE '12, MARC '14) completed her first year in the PhD program at Georgia Regent University. She has now joined Dr. Betty Pace's Lab in the Biochemistry and Cancer Biology Department. Nicole was elected to be the 2015-2016 GRU Social Chair for the Biomedical Science Association (BSA).

Nella Delva, MS, (RISE '12) graduated in May 2015 with a masters degree in Biological Sciences from the University of South Carolina, SC.

Precious deVerteuil, (RISE '14) received the National Institute of Aging Supplement Award for 3 years to conduct her ongoing research at University of Oregon.

Summer Research Presentations Series, Fall 2015

Each summer RISE students carry out biomedical science research at national and international research intensive laboratories for 8-12 weeks. During the fall semester students share their experiences through our "Summer Research Presentations Series." This series begins on **Thursday, September 3, 2015** at 12 noon in NHS 336. Presentations will run alternatively on Thursdays and Fridays (please see schedule below).

Thursday, September 3, 2015 | Noon

Gabriela Hernandez (RISE-Biology)

"Tissue changes during wound healing in wild type *Danio rerio*"

Barry University, FL



Josh Kelly (RISE-Biology)

"Micro-dystrophin can partially restore myosin heavy chain distribution in the canine model of Duchenne muscular dystrophy",
University of Missouri, MO

Friday, September 11, 2015 | Noon

Kevin Williams (RISE-Biology)

"Polymerization of actin filaments and comparison of cryo images of Formvar, commercial Quantifoil and trifoil"
University of California, San Diego



Kamren Livingston (RISE-Biology)

"The effect of PHLLP2 deletion on related protein levels in the brain"
University of California, San Diego



Thursday, September 17, 2015 | Noon

Diana Cordero (RISE-Biology/Chemistry)

"Sulfur containing compounds as potential precursors of dimethylsulfide (DMS) and methanethiol (MeSH)."
Dauphin Sea Lab Institute, AL



KeiAuynndria Edwards (RISE-Biology)

"What is the mechanism by which IL-12 increases Hut 78 T cell activation?"
University of Iowa

Friday, September 25, 2015 | Noon

Shanika Kingston (RISE-Biology/Chemistry)

"Preliminary results for an estrogen receptor heterodimer inducing compound"
University of Wisconsin, Madison



Mariana Ruiz-Velez (RISE-Biology)

"Cre recombinase has no significant effect on dendritic complexity of cultured hippocampal neurons."
University of Wisconsin, Madison



Thursday, October 1, 2015 | Noon

Bertina Telusma (Biology)

"Identification and characterization of proteins interacting with STRA8"
Massachusetts Institute of Technology

Barry University

College of Arts and Sciences

11300 NE 2nd Avenue
Miami, FL 33161

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applicants for
RISE program!

RISE PROGRAM

End of Semester Party

Students and faculty ended the academic year with the annual end of semester party in May. During this event we acknowledged the students' accomplishments and summer research internship acceptances, and faculty support of the RISE program.

