



Research Initiative for Scientific Enhancement (RISE)

College of Arts and Sciences | Fall 2017

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@mail.barry.edu or visit barry.edu/mbrsrise/programactivities/roads.htm. New students can apply to ROADS through their MyBarry account. Contact Dr. Flona Redway at 305.899.3542 for further information or visit barry.edu/riase

Flona Redway, PhD
RISE Program Director

Michael Robinson, PhD
ROADS Coordinator

Norma Barrera, BS
RISE Administrative Assistant

Recent Graduates May 2017

Bachelor of Science Degrees:

From left to right:
Pedro Sanchez (Biology),
Dr. Flona Redway and
Bertina Telusma (Biology.)



Welcome New RISE Students

From left to right: Michaela Reyes (Chemistry) and Llona Kavege (Biology and Philosophy).

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NEWS

ROADS Research Club Creating Experiences in Research & Beyond

This past year, the student members of the ROADS research club worked on a new project with a new model organism: the fruit fly, *Drosophila melanogaster*. The ROADS members examined the pattern of laterality



From left to right: Jeremiah Paul, Anastasia Zharova, Angela Duff, Beatriz Alvarez, Lilyveth Mesa and Dermakis Dormer at FURC, Feb. 24-25 2017.

(what might be called handedness) in wingless fruit flies. Although laterality is present in many animals, including those with relatively simple nervous systems, the reasons for it are not well understood. Understanding laterality has implications for understanding nervous systems, development, behavior and genetics. Over the course of this project, the mostly freshman club members developed basic research skills, including care and handling for fruit flies, identification of fruit fly sex and understanding statistical analysis. The students also



From left to right: Beatriz Alvarez and Lilyveth Mesa snorkeling in the Keys.

learned important aspects of research communication, including how to write and present a research poster. Club members collected and analyzed sufficient data over the year, and in the spring they submitted two abstracts for presentations at local and statewide scientific

meetings. In February, six ROADS members attended the seventh annual Florida Undergraduate Research Conference (FURC) at Florida Atlantic University, where they presented their research as a poster. Presenters of the poster titled “Laterality in an arthropod: the fruit fly *Drosophila melanogaster*,” were Lilyveth Mesa, Demarkis



ROADS club members at the opera Carmen.

Dormer, Anastasia Zharova, Beatriz Alvarez, Jeremiah Paul and Angela Duff. Their co-authors were Naomi Garcia, Kyle McHugh, Isaias Trujillo, Toriean Gordon, Tyler Bonner, Keret Watts, Farah Calvaire, Isabella Duarte, Anthony Jackson and Dr. Michael Robinson. In April, many club members presented a second poster with updated data at Barry University’s ninth annual STEM Symposium. Anastasia Zharova was the lead author, and there were several new club members whose work in the spring was recognized by their addition to the poster as co-authors. Those members include: Alexis Williams, Donald Streater, Amber Snelling, Maira Sanon Canel, Martina Muñoz, Genesis Muñoz, Rainin Johnson, Alexia Hunter, Sabrina Holifield, Toriean Gordon and Seth DeRuggiero. In addition to the research and research-related activities, members of ROADS participated in two major off-campus activities as part of ROADS’ cultural experiences. In November, club members attended a performance of “Carmen” at the Adrienne Arsht Center, and in April they participated in a coral reef snorkeling trip in the Florida Keys.

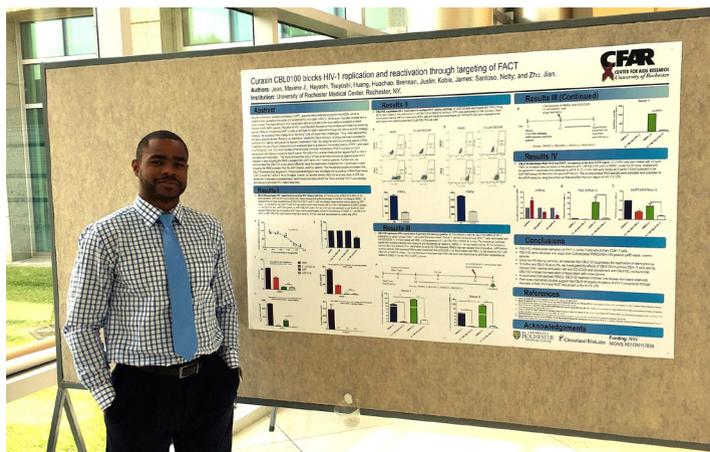
STUDENT QUOTE

Bertina Telusma (RISE 2017)
“Being part of the RISE program has been one of the most rewarding and worthwhile experiences of my life. This program allowed me to embrace and explore my love for science by providing me with countless resources. Because of this program, I know that I can reach beyond the sky and would encourage every girl and boy to do the same; it is truly possible with hard work and dedication. I will forever be grateful to



my mentors, especially Dr. Petrino and Dr. Redway for pushing me to be the best that I can be.”

Alumni Profile - Maxime Jean, PhD (RISE '11)



Alumni Profile - Maxime Jean, PhD

I am fortunate to have been able to complete my undergraduate degree at Barry University. I can still remember the first day of orientation and how nervous I was of starting this new chapter of my life. It is now 10 years later, and I can truly say that my time at Barry has prepared me for success. In particular, my experience as a RISE student has truly helped me to excel at the graduate level.

Currently, I am completing an MD/PhD program at the University of Rochester Medical Center (URMC). I just finished my third year of graduate school in the virology track and will return to medical school within the next two years. I work in Dr. Jian Zhu's laboratory, and my thesis project focuses on the identification and validation of small-molecular compounds that can target and eliminate latent viral reservoirs in HIV/AIDS patients, leading to a possible cure. I also focus on identifying novel host factors important for the maintenance of these viral reservoirs. In fact, I have recently published a paper discussing the discovery of such novel factors (Maxime Junior Jean, Derek Power, Weili Kong, Huachao Huang, Netty Santoso and Jian Zhu. April 2017 — "Identification of HIV-1 Tat-Associated Proteins Contributing to HIV-1 Transcription and Latency. *Viruses* 9(4):67. doi:10.3390/v9040067"). As a RISE student under the guidance of Dr. Redway and my research mentor Dr. Schoffstall I strengthened qualities such as professionalism, critical thinking and discipline. Because of my preparation, I have been sought after for several training grant opportunities at my current institution. In 2015, I was awarded the NIH T32 training grant in cellular, biochemical and molecular sciences chemistry, and this fall I was awarded the NIH T32 training grant in immunology. These are prestigious programs that will further broaden my graduate school experience beyond my particular field of expertise.

Another instrumental aspect of my training as a RISE student was the emphasis on proper and clear scientific communication. As a student of this program, we were expected to present our undergraduate research at several local, regional and national meetings, including the Annual Biomedical Research Conference for Minority Students

(ABRCMS). Presenting at these meetings has not only helped to build my confidence as a public speaker but also allowed me to effectively communicate and tailor my presentations to different audiences. Even now, I continue to refine this skill and present my work at national meetings, such as the Strategies for an HIV Cure 2016 and the Structural Biology Related to HIV/AIDS 2017.

Being an alumnus of Barry, the concept of giving back and serving the community has been engrained in me. During my first two years in medical school at URM, I was an active member of the Student National Medical Association (SNMA), an organization that focuses on supporting current and future underrepresented minority medical students and serving underserved communities. For instance, we help minority college students navigate the process of medical school applications and we volunteer at annual health fairs to provide health care education to less fortunate communities. Presently, I am a board member of the Diversity Theme Committee, which focuses on the education of medical students and faculty on diversity and bias that exists in the practice of medicine.

Overall, I can attest that my experience as a RISE student at Barry exemplifies the importance and positive impact that it can have in forging competent, future scientists. I made my scientific debut through this program and, because of it, am well on my way to completing my training as a compassionate and well-rounded physician scientist. I will be forever grateful to the RISE team, especially Michelle, Audra, Dr. Redway and my wonderful research mentor, Dr. Schoffstall, for giving me the necessary foundational tools to succeed. I will continue to bring pride to this program and the Barry community, as they are among the pillars upon which my drive and perseverance rest.

STUDENT QUOTE



Pedro Sanchez (RISE 2017) "Although I have been presented with many opportunities for success, the RISE program has by

far been one of the most rewarding experiences I have ever encountered. This program prepared me both academically and as a scientist. I was able to travel to many places to meet other scientists with the same mindset as mine, with a desire to grow and prepare for the journey of pursuing a PhD in a Biomedical Science-related field. I was able to travel to places, such as the University of Arkansas for medical sciences to conduct research during the summer of 2016, where I was able to study a virus. I am a well-rounded PhD candidate today because of all of the support and tools that were provided to me while in the RISE program throughout my undergraduate status."

NEWS

Student Accomplishments



Llona Kavege participated in the 21st Intercollegiate Ethics Bowl National Championship at the Association for Practical and Professional Ethics annual conference in Dallas, Texas, on Feb. 26, 2017. Barry University's Ethics Bowl Team received third place. Llona was also inducted into the Philosophy Honors Society, spring 2017.



Jocelyn Baquier received the Department of Physical Sciences Honor Scholarship,

Outstanding Organic Chemistry Student Award and Outstanding University Physics Student Award, spring 2017.



Jocelyn Baquier received a travel award to attend the Society of Toxicology's Undergraduate Education Program at the annual meeting in Baltimore, Md., March 11-14, 2017.

Jocelyn Baquier, Llona Kavege and Gabriela Hernandez were placed on the Dean's List in recognition of their academic achievement, earning a 3.5 or greater GPA during spring 2017 term.



From left to right: Gabriela Lin, Pedro Sanchez, Gabriela Hernandez, Diana Cordero, Kamren Livingston, Bertina Telusma, Jocelyn Baquier and Marissa Jones.

The following RISE students received awards for their poster presentations at the ninth annual STEM Symposium on April 11, 2017: Diana Cordero, Jocelyn Baquier, Pedro Sanchez and Gabriela Hernandez. Former ROADS club member, Gabriela Lin, also received an award for her STEAM picture.



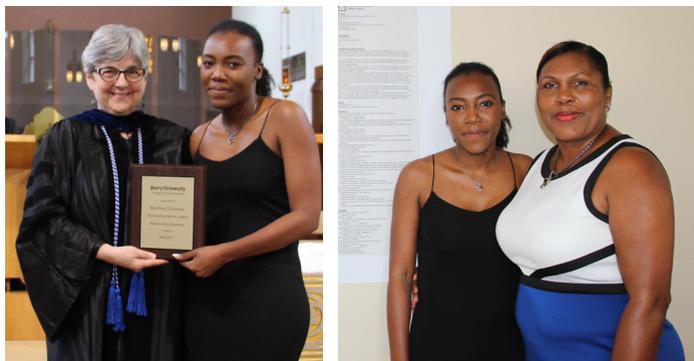
From left to right: Fabio Frech, Gabriela Hernandez, Kayla Garcia, Dr. Leticia Vega, Diana Cordero, Andrea Roberti and Gabriela Lin.

Diana Cordero and Gabriela Hernandez were inducted into the Beta Beta Beta, Biological Honor Society Sigma Eta Chapter, spring 2017.

Diana Cordero was placed on the President's List in recognition of her academic achievement, earning a 4.0 GPA during spring 2017 term.

Student Accomplishments

Bertina Telusma was the recipient of the College of Arts and Sciences Dean's Award in Mathematics and Sciences, and the Outstanding Biology Award, spring 2017.



From left to right: Dr. Karen Callaghan and Bertina Telusma

Outstanding Biology Award: Bertina Telusma with mom.

Bertina Telusma was accepted to Johns Hopkins; University of California Berkeley; University of California, San Francisco; Harvard University; and Stanford University; she is currently enrolled in the PhD program in Biology at Massachusetts Institute of Technology



From left to right: Bertina Telusma and Diana Cordero during summer 2017 at MIT

Pedro Sanchez was accepted to the Post-Baccalaureate Research Education Program (PREP) at Wake Forest University School of Medicine, N.C., and the University of Rochester School of Medicine and Dentistry. He is currently enrolled in the PREP Program at Wake Forest fall 2017. Pedro Sanchez was also invited to the 2017 Bioscience Opportunities Preview Program at the University of Wisconsin-Madison, WI, Sept. 21-24, 2017; and to attend and present a poster on his research at the Emory University-Laney Graduate School STEM Research and Career Symposium, GA, Oct. 1-3, 2017.

Faculty Accomplishments

Dr. Maurizio Giannotti, professor of physics, presented "Fermi-LAT and NuSTAR as stellar axionscopes" at the 13th AxionWIMP conference in Thessaloniki, Greece; "Stellar cooling anomalies: hints, interpretations and experimental potential" at the seventh general IAXO collaboration meeting, DESY, Germany; and "Astrophysical Anomalies and Axions: the physics potential of the International Axion Observatory" at the Astroparticule & Cosmologie (APC) group, Universite Paris Diderot, Paris, France, June 2017.

Dr. Brenda Schoffstall, associate professor of biology, received for the second year the 2017 ASCB MAC Linkage Fellowship to promote careers and research in cell biology for minority students.

Dr. Stephanie Bingham, associate professor of biology, was elected president of the Barry University chapter of Sigma Xi, The Scientific Research Honor Society, spring 2017. Since becoming a Sigma Xi member in spring 2010, she has served the society on both local and national levels, serving as a member of our chapter's Membership & Qualifications Committee since 2011, volunteering for the national Sigma Xi Membership & Qualifications Committee since 2015, as well as the national Sigma Xi Grants-in-Aid of Research review panel since 2014. She has also participated in the Sigma Xi Student Research Showcase, judging online student research projects.

Student & Faculty Refereed Publications

Dr. George Fisher, professor of chemistry, published a paper titled "D-Aspartic acid ameliorates painful and neuropsychiatric changes and reduces β -amyloid A β 1-42 peptide in a long-lasting model of neuropathic pain." (Neurosci. Letts. 651:151-158, 2017)

Dr. Maurizio Giannotti, professor of physics, published "Axion searches: Exciting times" (Nature Physics 13 (6), 530-531); "Fermi Large Area Telescope as a galactic supernovae axionscope" (Physical Review Letters 118 (1), 011103); "On the influence of axions on Mup" (Memorie della Societa Astronomica Italiana, Vol. 75, 282 2017); and submitted to the Journal of Cosmology and Astroparticle physics, "Stellar Recipes for Axion Hunters."



Eclipse 2017

Students and faculty observed the solar eclipse at Barry, Aug. 21, 2017.

NEWS

Summer Research Experience Presentations Series | Fall 2017

Each summer, RISE students carry out biomedical science research at national and international research intensive laboratories for eight to 12 weeks. During the fall semester, students share their experiences through our “Summer Research Presentations Series.”

Friday, Sept. 22, 2017, at noon

Jocelyn Baquier (RISE-Che/Bio)

“A possible role for cereblon as a desmoplakin-associated regulator at the intercalated disc”

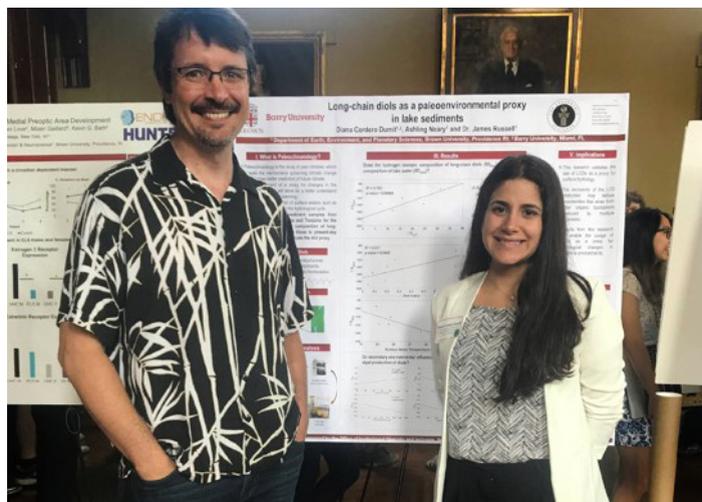
University of California, San Diego, Calif.



Diana Cordero (RISE-Che/Bio)

“Long-chain diols as a paleoenvironmental proxy in lake sediments”

Brown University, R.I.



Friday, Sept. 29, 2017, at noon

Gabriela Hernandez (RISE-Bio)

“Pathological stress in Zebrafish hearts using extreme hypoxia exposure”

Barry University

Llona Kavege (RISE- Bio/Phi)

“EXPLO: sailing through uncharted waters”

Wellesley College, Massachusetts



Friday, Oct. 20, 2017, at noon

Jeremiah Paul (ROADS-Che)

“Differential expression of glycine receptor in the globus pallidus, thalamus, and striatum”

The University of Texas at El Paso, Texas

Alumni Updates

Cynthia Carrasco (MBRS '99) is a RN and pursuing her MSN in health systems leadership at Gonzaga University, Wash.

Davecia Cameron, MS (MIRT/MARC '02) is a Science Director, Hematology/Oncology in the Editorial Department of Medscape Education. Medscape is a part of WebMD Health Professional Network that includes theHeart.org and eMedicine.com. She works with experts in Hematology and Oncology to provide continuing medical education to specialists/oncologists/ pharmacists/nurses and other health care professionals on the latest in oncology management to improve lives of patients with cancer.

Emily Hanna, MD (RISE '10) completed a one-year internship in internal medicine at University of Florida Jacksonville, and is now starting preventive medicine residency at University of North Carolina, Chapel Hill. She is also enrolled in the master's in public health program.

Hans Saint-Eloi Cadely, (MARC '08) is now an assistant professor in the Department of Human Development and Family Studies at the University of Rhode Island. He is currently teaching undergraduate courses on human development across the lifespan and graduate course on theories pertaining to human development and family studies. Additionally, Saint-Eloi Cadely has published two manuscripts in the Journal of Interpersonal Violence: 1-25. doi: 10.1177/0886260517715601; and 1-26. doi: 10.1177/0886260517696859.

Krystal Lago (MARC '10) is working as an assistant professor at Miami Dade College Kendall Campus.

Ricardo deMoya, (RISE '13) is a graduate student at the University of Pittsburgh, part of the Integrated Systems Biology (ISB) program and will be focusing on computational work while investigating heart development in zebrafish and looking for genes that prove critical for heart development. He got married this year.

Rina Santiago, PhD (MARC '05) is a new mom now. She, along with her husband, also started a medical center called Monarch All Health located in Homestead, Fla.

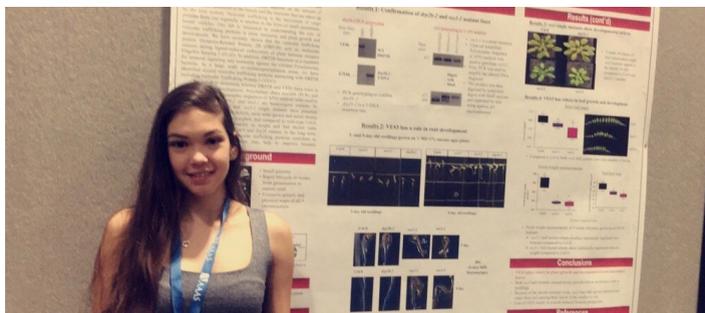
Student Attendance & Presentations at Scientific Meetings



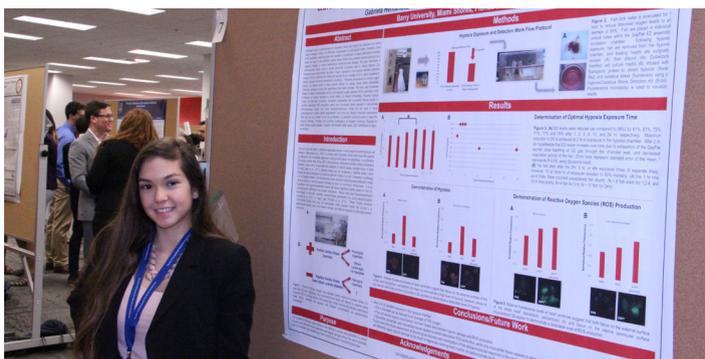
2017 AAAS Annual Meeting Boston, Mass., Feb. 17-19, 2017. RISE students Gabriela Hernandez, Diana Cordero and Marissa Jones attended the conference.

5th Annual Life Sciences South Florida (LSSF) Undergraduate Research Symposium, Palm Beach State College's Eissey Campus, Palm Beach Gardens, Fla., April 1, 2017. RISE student Jocelyn Baquier made a poster presentation.

Barry University hosted the **Ninth Annual Science, Technology, Engineering and Math (STEM) Symposium**, April 10, 2017. 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 11 posters were presented by RISE and ROADS students. Approximately 250 people attended the symposium



Seventh Annual Florida Undergraduate Research
RISE student Gabriela Hernandez and six ROAD club members made poster presentations.

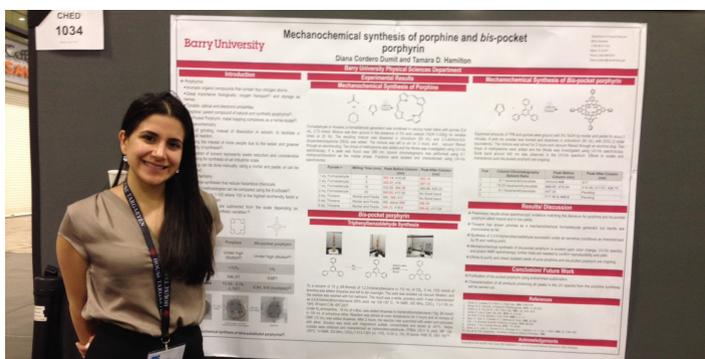
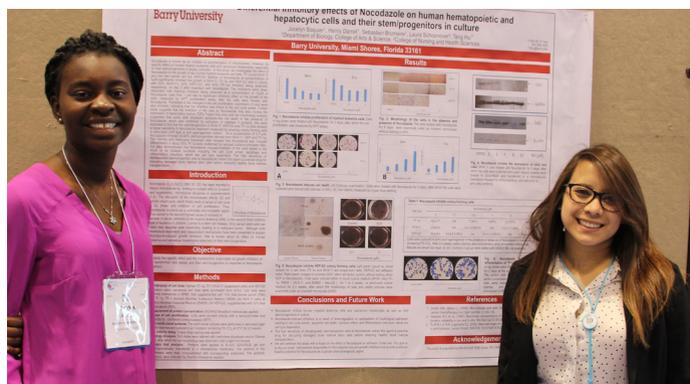


The Society of Toxicology 55th Annual Meeting and ToxExpo, Baltimore, Md., March 12-16, 2017. RISE student Jocelyn Baquier attended the conference.



Experimental Biology, Chicago, April 22-26, 2017. RISE students Llon Kavege attended, and Jocelyn Baquier made a poster presentation.

American Chemical Society (ACS), San Francisco, April 2-6, 2017. RISE student Diana Cordero made a poster presentation.



Valentine's Day

Students and faculty enjoyed lunch together Feb. 14, 2017, to celebrate Valentine's Day. We also welcomed baby Dylan to RISE.



End of Semester Party

Students and faculty ended the academic year with the annual End of Semester party May 4, 2017. During this event, we acknowledged the students' accomplishments and summer research internship acceptances, as well as faculty support of the RISE program.

