



MARC – MBRS RISE – MBRS SCORE

NEWSLETTER • FALL 2010 • BARRY UNIVERSITY • COLLEGE OF ARTS AND SCIENCES

The MARC, RISE, and SCORE programs at Barry University are funded by the National Institutes of Health to promote scientific research among students and faculty, especially to increase the involvement of underrepresented groups in the sciences. Barry University is one of only two schools in the state to offer MARC (Minority Access to Research Careers) and RISE (Research Initiative for Scientific Enhancement) programs to students. SCORE (Support of Competitive Research) focuses on faculty projects.

ROADS Research Club: A New Activity

Beginning this fall, the MARC and RISE grants are inviting students to become a part of the ROADS Research Club. ROADS (Research Opportunities and Directions in Science) is open to all freshmen and sophomores majoring in biology, chemistry, psychology, mathematics, and computer science who are interested in conducting hands-on scientific research as undergraduates. This experience can lead to upperclassmen-level research positions.

ROADS students have unique opportunities to tour active research labs on campus and meet Barry faculty members who are active researchers. Current Barry undergraduate research students present and share their projects at ROADS meetings, giving members a glimpse of what they can do as

student researchers. ROADS meetings include hands-on group projects and workshops that expose members to current experimental techniques and research methods in all five targeted research fields. Several meetings will focus on future research career goals and the possible paths that may be followed to meet those goals. During the spring semester, members will have the opportunity to apply to

research programs on campus. ROADS members become part of an exclusive group of Barry students who share a common interest in their future career as research scientists. The club's activities are coordinated by Dr. Brenda Schoffstall, assistant professor of biology.

ROADS club meetings are held once a week on Thursdays from 4:00 to 5:00 pm in NHS 235.



Emir Rubi (MARC '10)

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\$35,000 Grant Awarded

Dr. Tamara Hamilton, assistant professor of chemistry, recently received a Cottrell College Science Award from the Research Corporation for Science Advancement. The two-year award – \$35,000, along with \$10,000 in matching funds from Barry University – will provide equipment, supplies, and undergraduate student salaries to support Dr. Hamilton's research in chemistry (solid-state synthesis of porphyrins and construction of porphyrin-walled metal-organic polyhedra).

Fall 2010 Guest Speaker Series

The Guest Speaker Series brings accomplished scientists and alumni to Barry University to give students insights on research, graduate school and future careers.

On September 18, **Gayle R. Slaughter, PhD**, assistant dean of graduate education and professor of molecular and cellular biology, will present a workshop on the graduate school admission process.

On October 1, **Vence Bonham Jr., JD**, Chief Education and Community Involvement Branch and Associate Investigator, Social and Behavioral Research Branch National Human Genome Research Institute, NIH will present “Genomics: From Bench to Society.”

On October 8, **Tracey Lincoln, PhD**, a post-doctoral fellow at the University of Massachusetts Medical School, will present



In March, Dr. Samuel Jones from Jefferson State Community College in Alabama spoke about graduate school admissions.

her research on self-replication of an RNA enzyme, published in *Science* (2009, 323: 1229-32). She will also present a workshop on surviving graduate school. Dr. Lincoln received her PhD in 2009 from The Scripps Research Institute in La Jolla, California.

In spring 2010, speakers included **Dr. Samuel Jones** from Jefferson State Community College in Alabama and author of *Just What the PhD Ordered*.

In May, MARC/RISE alumna **Carolina Pombo '06** discussed how the Barry experience prepared her for graduate school. Pombo is a third-year graduate student in the PhD immunology program at the University of Pennsylvania.

“Thanks to the MARC U*STAR Program, I was able to accomplish my goal of getting into graduate school. For this, I am eternally grateful.”

- Krystal Lago
Developmental Psychology PhD Program, Florida Atlantic University

“As I embark on this journey to pursue my desire of earning a PhD, I will be sure to look back at the training I received while in MARC, knowing that it has prepared me well for the rigors of graduate study.”

- Emir Rubi
Biological Sciences PhD Program, City of Hope

Welcome, New Students!

The MARC and MBRS RISE programs welcome a new group of student researchers this fall.



From left: MARC scholars Susana Chan (chemistry), Christian Bureu (biology), and Karla Rivera-Torres (psychology)



From left: MBRS RISE scholars Lauren Sanchez (biology), Precious De Verteuil (biology), Nella Delva (biology), Gabriela Toro (biology), and Elizabeth Nguyen (biology)

Summer Research Presentation Series

Each summer MARC U*STAR and MBRS RISE scholars conduct biomedical science research at national and international research intensive laboratories for eight to 10 weeks. During the fall semester students share their experiences through our "Summer Research Presentation Series." This series begins on Friday, September 3, 2010 at noon in NHS 102. The presentations on Friday, November 5 will be in Room 145 of the library.

Friday, September 3, 2010

Precious De Verteuil (RISE – Biology)

"The contractile effects of increased intracellular [taurine] in ex vivo cardiomyocyte and whole heart preparations"

Barry University, FL

Maxime Jean (RISE – Biology)

"Exercise-induced cardiac overload in adult *Danio rerio*: A model for cardiac muscle cell regeneration"

Barry University, FL

Blandine Victor (RISE – Biology)

"The contractile effects of increased intracellular [taurine] in ex vivo cardiomyocyte and whole heart preparations"

Barry University, FL

Friday, September 10, 2010



Gabriella Toro (left) and Elizabeth Nguyen at the University of Missouri

Elizabeth Nguyen (RISE – Biology)

"A new role for the glycoprotein ependymin in regulating vertebrate nervous system patterning"

University of Missouri-Columbia

Gabriella Toro (RISE – Biology)

"A morpholino-based screen to identify genes involved in vertebrate nervous system development"

University of Missouri-Columbia

Friday, September 17, 2010

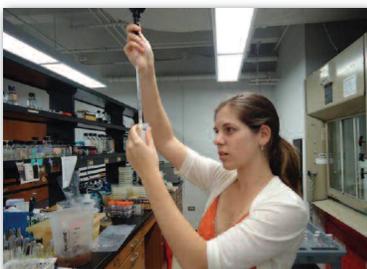


Jonathan Colón at Université Claude Bernard in France

Jonathan Colón (RISE – Chemistry)

"Total synthesis of atenolol A"

Université Claude Bernard – Lyon 1, France



Lauren Sanchez at Vanderbilt University

Lauren Sanchez (RISE – Biology)

"Genetic pathways that influence the location of telomere addition events following chromosome breakage"

Vanderbilt University, TN

Friday, September 24, 2010

Gina Guillaume (RISE – Biology)

"Identification of cell types producing IFN γ in the brain and periphery of SIV infected macaques"

Johns Hopkins University, MD



Alton Johnson at Johns Hopkins University

Alton Johnson (RISE – Biology)

"Examining the differences in respiratory function and symptoms between self-

reported asthmatics and non-asthmatics bariatric patients"

Johns Hopkins University, MD

Friday, October 22, 2010



Brian Garner at Princeton University

Brian Garner (MARC – Biology)

"Understanding the relationships between Ubiquitin Conjugating enzymes and the UbiquitinLigase enzymes as they interact with Msh2 in *Saccharomyces cerevisiae*"

Princeton University, NJ

Vanessa Inchausti (MARC – Biology)

"Screen for muscular dystrophy mutations of *dmd*, *drp2*, and *Fkrp* in underperforming adult *Danio rerio*"

Barry University, FL

Friday, October 29, 2010

Nathan Gonzalez (MARC – Chemistry)

"Determination of gunshot residue (GSR) by laser-induced breakdown spectroscopy (LIBS)"

Florida International University

Friday, November 5, 2010

Monica Barreto (MARC – Psychology)

"The implications of burdensomeness expectancies for avoidance in interracial interactions"

Florida State University

Iliana Gonzalez (MARC – Psychology)

"An investigation of parental and teacher social-emotional school readiness competencies among the Head Start community"

University of Miami, FL

'99 MARC Alum - The Road to an MD/PhD

"I have obtained an excellent background in molecular biology and genetics. I want to become a physician who is able to take the knowledge from basic biomedical and technical research and apply it to disease prevention and patient care."



After years of studying and research projects, **William Buitrago '99** is completing his surgical residency at the Michael E. DeBakey Department of Surgery at Baylor College of Medicine in Houston, Texas.

An important part of Buitrago's development was the MARC (Minority Access to Research Careers) program at Barry University.

As an undergraduate, Buitrago demonstrated a serious commitment to a career in research. He worked in the laboratory of Dr. Laura Mudd, studying the effects of ethanol on the development and survival of embryonic cortex neurons and the treatment of such effects with growth factors and estrogen. He received a Minority International Research Training (MIRT) grant that allowed him to spend a summer in Kingston, Jamaica, investigating the anti-tumor properties of a marine alkaloid.

He also conducted research at other universities, including the University of Florida College of Medicine in 1997, where he investigated the effects of AT1 oligonucleotides on renal angiotensin II receptors, renal function, and blood pressure in normotensive rats. He studied at Baylor College of Medicine in 1998 as part of the SMART Program, where he investigated the role of granulocyte-macrophage colony stimulating factor in Langerhans cell histiocytosis.

After graduating from Barry, Buitrago started his MD/PhD studies in the Medical Scientist Training Program at Baylor College of Medicine. After completing the first two years of medical school, he joined the laboratory of Dr. Dennis Roop in the Department of Molecular and Cellular Biology. In Dr. Roop's laboratory, he completed his dissertation "Development of Gene Therapy Approaches for Epidermolysis Bullosa Simplex Using an Inducible Mouse Model: Implication for Gene Therapy of Inherited Skin Disorders."

"I have obtained an excellent background in molecular biology and genetics," Buitrago said. "I want to become a physician who is able to take the knowledge from basic biomedical and technical research and apply it to disease prevention and patient care."

During graduate school, Buitrago was recognized for numerous posters and platform presentations. He received the best oral presentation award in the MSTP Scientific Symposium and the first place speaker award in the Department of Molecular and Cellular Biology Student Symposium

in 2005. He was also awarded first place poster presentation in the Department of Molecular and Cellular Biology Student Symposium and in the MSTP Scientific Symposium in 2006 and 2007, respectively. In 2006, he received the MD/PhD National Conference Diversity Travel Award. Buitrago was an Obstacles to Translation in Dermatological Research Conference Scholarship Recipient in 2006 and a platform speaker at the annual meeting of The Society for Investigative Dermatology in 2004, 2006 and 2007.

At Baylor, Buitrago has been an active member of the scientific community and has also been involved in multiple educational activities. He was part of the MD-PhD Student Operating Committee from 2001 to 2003. He was also the vice-president of the United Latin American Medical Student Association (ULAMS) BCM Chapter in 2000 and 2001. In addition, he was a teaching assistant in the anatomy, cell and molecular biology, and histology courses at the medical school, and an instructor in the graduate school's Introduction to Molecular and Cellular Biology class. He was also a volunteer in the graduate school's brain lab. Besides his academic interests, Buitrago has been a youth soccer coach at the local YMCA in Houston and is now an avid cyclist and recreational runner.

Buitrago graduated with an MD-PhD degree in May 2010. After receiving his PhD and returning to medical school, he decided to pursue a career in surgery with the goal of specializing in the field of surgical oncology. Furthermore, he remains focused in pursuing a career that combines basic science research and clinical work. He will be visiting Barry in spring 2011.

"Becoming a surgeon is a lifelong process," he said. "I strongly believe surgery is the ideal field to continue my development as a physician and scientist."

Spring 2010 Graduates

Shane Bobart (RISE - Biology)
Kiyana Edwards (MARC - Chemistry)
Javier Gonzalez (MARC - Psychology)
Emily Hanna (RISE - Biology)
Gabrielle Johnson (RISE - Biology)
Krystal Lago (MARC - Psychology)
Joao Luna (MARC - Chemistry)
Gloria Perez (RISE - Chemistry)
Emir Rubi (MARC - Chemistry)

Alumni Updates

Lina Arencibia (MARC/RISE '07) is enrolled in the MD program at Case Western Reserve University, Ohio, fall 2010. She is the recipient of a Case grant.

Shane Bobart (RISE '10) is enrolled in the MD program at St. George's University, Grenada, fall 2010.



Tina Franklin (RISE '07) is in a joint program between the University of Medicine and Dentistry, New Jersey (UMDNJ) and Rutgers University, continuing her studies in physiology under the mentorship of Dr. Dipak Sarkar. Her research focuses on the developmental effect of alcohol on rat pups in order to better

understand the effects of alcohol on infants and fetal alcohol syndrome.

Danielle Jackman (MARC '09) is enrolled in the Applied Developmental Science PhD program at Colorado State University, fall 2010.

Krystal Lago (MARC '10) is enrolled in the Developmental Psychology PhD program at Florida Atlantic University, fall 2010. She received a teaching assistantship and the Presidential Fellowship award.

Kiyana Edwards (MARC/RISE '10) is enrolled in the Environmental Science Master's Program at the State University of New York.

Mabel Lopez, PhD (MARC '96) is starting a new practice, Mind and Brain Care, this fall. It is a comprehensive care center for brain-related disorders, psychological issues, cognitive rehabilitation, and prevention/educational service. She will

continue in her capacity as chief of psychiatry and psychology for Lee Memorial Health Systems. She also has a show *Virva Su Salud*, which continues to air on Telemundo. Dr. Lopez continues to serve as Calusa Chapter President for the Florida Psychological Association and is the president-elect for next year.

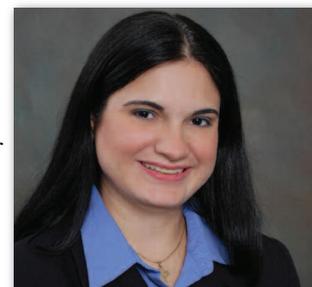
Joao Luna (MARC '10) is enrolled in the geochemistry PhD program at the University of Georgia, fall 2010. He earned a teaching assistantship.

Lisan Parker, PhD (MARC '97) has transitioned into the nonprofit sector with a focus in global health. She is Scientific Liaison, Secretariat for the Working Group on New TB Drugs' Stop TB Partnership at the Global Alliance for TB Drug Development.

Maria Perez (RISE '10) is enrolled in the chemistry PhD program at the University of Maryland, College Park, fall 2010.

Sona Ramdath, DPM (MIRT '98) completed his residency in podiatric medicine and surgery in June 2010 and will start a sports medicine fellowship with Dr. A Saxena at the Palo Alto Medical Foundation in San Francisco.

Lenore Polo Rodicio, PhD (MARC '94) was featured as one of The Best of Miami Educational Upgrades 2010 in *Miami Today*, week of June 3, 2010, for "her dedication to the college mission of providing access to minority students and providing them the tools to succeed in the classroom and beyond."



Emir Rubi (MARC '10) is enrolled in the biological sciences PhD program at City of Hope Graduate School of Biological Sciences, Duarte, California, fall 2010. He received a full tuition waiver.

Congratulations, Graduates!



From left: Dr. Fiona Redway and May 2010 graduates Gabrielle Johnson, Krystal Lago, Emir Rubi, Emily Hanna, Shane Bobart and Javier Gonzalez

Dr. Zuzana Zajickova, assistant professor of physical sciences, completed her third internship in the Department of Education and National Science Foundation-funded Faculty and Student Team (FaST program) at the Lawrence Berkeley National Laboratory in Berkeley, California. Dr. Zajickova and three students, chemistry major Emir Rubi (MARC '10), biology major Marc Knezevic, and biochemistry major John Stefancin were involved in researching various physical and separation properties of inorganic monolithic columns coated with a nanolayer of polymeric material.



Dr. Leticia R. Vega, assistant professor of biology, presented her research, “Pif1p, telomeres and chromosomes in *Saccharomyces cerevisiae*” during the HHMI Seminar Series at the Massachusetts Institute of Technology, May 19, 2010. Dr. Vega met with faculty to discuss the importance of mentoring underrepresented students to be successful in basic research. She is an MIT alumna ('99). Dr. Vega also co-authored and presented a poster “Telomere length maintenance in cdc13-1 strains” with Lina Ortega (MARC/RISE), Gina Guillaume (RISE), and Drs. Ana M. Jimenez and Christoph Hengartner at the 2010 American Association for Cancer Research meeting on The Role of Telomeres and Telomerase in Cancer Research in Fort Worth, Texas, February 28-March 2, 2010. She also



attended the Center to Reduce Cancer Health Disparities Professional Development Workshop – The Ladder to Success: Steps to New Heights, April 15-16, 2010, in Rockville, Maryland.

“I gained the necessary skills that are vital to succeeding in graduate school, along with numerous opportunities to experience life-enriching events. The most important thing that the MARC program gave me was a sense of belonging. MARC was to me more than an academic program -- it was an academic family.”

- Joao Luna (MARC '10)

Dr. Stephanie Bingham (MIRT '96, MBRS '97), assistant professor of biology, conducted research at the University of Missouri-Columbia (funded through an NIH supplement to Dr. Anand Chandrasekhar). While there she mentored two RISE biology students, Elizabeth Nguyen and Gabriela Toro. Dr. Bingham and her students performed a morpholino-based screen to identify genes involved in nervous system development as well as follow-up studies on candidate genes identified in a similar screen last summer.

Dr. Flona Redway made an oral presentation on “Enriching the undergraduate biomedical science research curriculum” at the 24th National Conference on Undergraduate Research (NCUR), Missoula, Montana, April 15-17, 2010. She also presented a poster on “Improving the science curriculum for MARC trainees at Barry University” at the MORE 2010 How-to Conference from June 9-11, 2010.

End of Semester Party

Students and faculty ended the academic year with the annual “End of Semester” party May 7, 2010. During this event we acknowledge the students’ graduate and summer research internship acceptances, and faculty support of the MARC, RISE, and SCORE programs.



STUDENT NEWS

Student Attendance and Presentations at Scientific Meetings



NCUR

56th Annual Southeastern Psychological Association (SEPA), Chattanooga, Tennessee, March 10-13, 2010. Monica Barreto (MARC), Ileana Gonzalez (MARC), Javier Gonzalez (MARC-poster) and Krystal Lago (MARC-poster)



STEM

Barry University hosted the **Second Annual Science Technology Engineering and Math (STEM) Symposium**, March 26, 2010. Undergraduate and graduate students from Barry and St. Thomas University presented posters related to their research in biology, chemistry, computer science, information technology, mathematics, physics, and psychology. Of the 44 posters, 27 were presented by MARC and RISE students. Student posters were judged by 22 faculty members, and students received cash prizes for their

presentations. Approximately 250 students, faculty, staff and administrators attended the symposium.

American Chemical Society (ACS) National Meeting and Exposition, San Francisco, March 21-25, 2010. Kiyana Edwards (MARC-poster), Brian Garner (MARC-poster), Nathan Gonzalez (MARC-poster), Joao Luna (MARC-poster), Gloria Perez (RISE-poster), and Emir Rubi (MARC-poster)

24th National Conference on Undergraduate Research (NCUR), Missoula, Montana, April 15-17, 2010. Alton Johnson (RISE-poster), Shakima St. Clair (RISE-poster) and Blandine Victor (RISE-poster)



Southeast Florida Cell Science

Fifth Annual Southeast Florida Cell Science Undergraduate Research Symposium, Miami, April 23, 2010. Jonothan Colón (RISE-

poster and oral presentation), Gabrielle Johnson (RISE-poster) and Julie Cadet (RISE-poster).

Student Accomplishments

Shane Bobart (RISE) was inducted into the Kappa Gamma Pi Honor Society and received the Excellence in Leadership Award for seniors at the Student Affairs Banquet on April 25, 2010. Shane was the founding president of MALES (Men Achieving Leadership Excellence and Success).

Julie Cadet (RISE), Emily Hanna (RISE), and Shane Bobart (RISE) were inducted into Gamma Sigma Epsilon, the Chemistry Honors Society, April 22, 2010.



New Sigma Xi Inductees

Jonothan Colón (RISE), Gina Guillaume (RISE), Maxime Jean (RISE), Alton Johnson

(RISE), Danamarie Moonoo (RISE), Emir Rubi (MARC), and Blandine Victor (RISE), were inducted into Sigma Xi, The Scientific Research Honor Society, April 20, 2010.

Jonothan Colón (RISE) received the first place award for his research presentation titled "Identification of potential drug targets for the treatment of Human African Trypanosomiasis" presented at the Fifth Annual Southeast Florida Cell Science Undergraduate Research Symposium, Miami, FL, April 23, 2010. This research was conducted at the University of California, San Francisco, California during summer 2009.

Gina Guillaume (RISE) received the Excellence in Leadership and President of the Year awards at the Student Affairs Banquet on April 25, 2010, for her leadership role in the Haitian Inter-Cultural Association (HICA) relief effort for earthquake victims in Haiti.



Krystal Lago

Krystal Lago (MARC) received the "Outstanding Psychology Student" Award at the Annual Psychology Student Research Forum on April 14, 2010.

Joao Luna (MARC) and Emily Hanna received the Dean's Award in Science and Math for 2009-2010. The students received the award at the Honors Convocation, May 7, 2010.



Joao Luna



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MARC – MBRS RISE – MBRS SCORE

Applications Now Being Accepted for Science Research Programs

The MARC U*STAR, MBRS RISE, and MBRS SCORE programs are supported by the National Institutes of Health to provide research opportunities for students and faculty.

MARC U*STAR scholars are biology, psychology, chemistry, computer science, and mathematics majors who carry out research on campus and who will pursue a PhD in their major. Scholars receive tuition and a monthly stipend.

MBRS 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.

MBRS SCORE faculty currently conduct research in biology. Contact Dr. F. Redway at 305-899-3035 for further information or visit www.barry.edu/mbrsrise and www.barry.edu/marc.



Close Faculty Mentoring