



MARC U*STAR/RISE PROGRAMS

BARRY UNIVERSITY • COLLEGE OF ARTS AND SCIENCES • NEWSLETTER • FALL 2013

ABOUT THE PROGRAMS

The MARC U*STAR and RISE programs are 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 conduct research with faculty at Barry during the semesters and at research intensive laboratories during the summer. 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.

The RISE program supports the ROADS Research Club. The club provides authentic group research experiences for freshmen and sophomores in the sciences. For more information, please contact Dr. Michael Robinson at 305-899-4930, mprobinson@mail.barry.edu, or visit www.barry.edu/ROADS. New students can apply to ROADS through MyBarry.

- Flona Redway, PhD, MARC/RISE Program Director
- Michelle Aznarez, MS, Technical Coordinator
- Michael Robinson, PhD, ROADS Coordinator

For more information contact Dr. Flona Redway at 305-899-3035 or visit:

- www.barry.edu/mbrsrise
- www.barry.edu/marc

Welcome, New RISE Students!



From left: Mariana Ruiz (Biology-Sophomore), Alice Nakasone (Biology-Sophomore), and Shanika Kingston (Biology/Chemistry-Junior). Not pictured: David Novo (Biology-Sophomore).

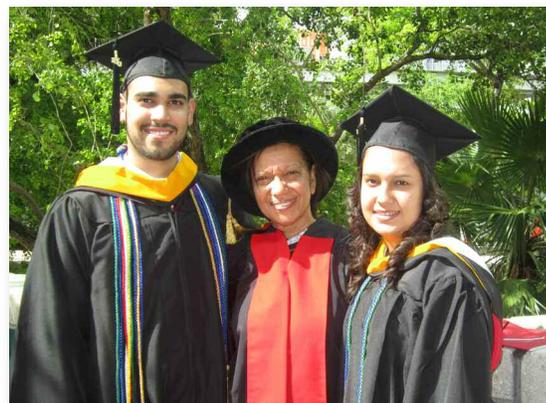
Grant Update

The NIH supported Research Initiative for Scientific Enhancement (RISE) program has been renewed for an additional five years, through February 2018. This program, continuously funded since 2001, provides research opportunities for biology and chemistry majors to academically and scientifically prepare them for biomedical science research careers. The program uses an interdisciplinary approach of well integrated and monitored developmental activities to prepare the RISE participants for successful matriculation into biomedical PhD programs. The current program is directed by Dr. Flona Redway and is funded for \$1.4 million.

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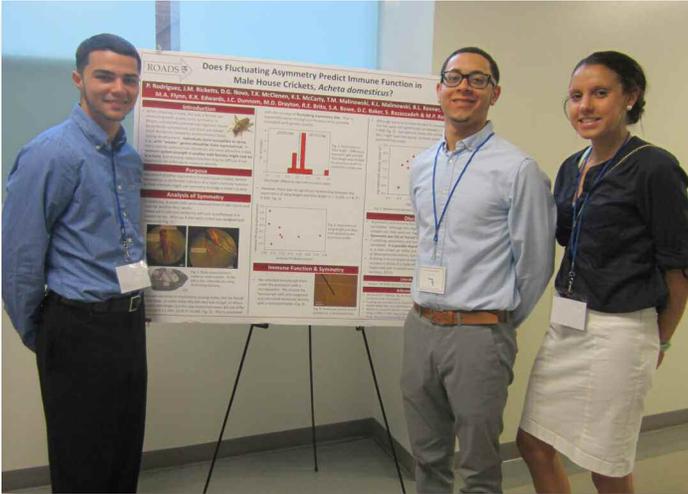
Recent Graduates – May 2013



Bachelor of Science Degrees: Davila, Alec (MARC – Biology) and Tirado, Andrea (MARC – Psychology)

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ROADS Research Club: Building Experience in Research and Beyond



ROADS participants Peter Rodriguez, David Novo and Tayler Malinows at the FURC conference in Gainesville, Florida, February 22-24, 2013.



ROADS participants dissect crickets.

Over the 2012-13 academic year, members of the ROADS research club worked on their investigation of the relationship between asymmetry and immune system function in the male house cricket, *Acheta domesticus*. Both of these traits are related to developmental stability and are important indicators of a male's genetic quality, which should make them important to females during mate choice.

In the process of completing this project, the mostly freshman club members developed basic research skills including morphometric data collection and immunological analysis. The club members collected and analyzed sufficient data over the year so that in the spring they were able to submit three abstracts for presentations at local and statewide scientific meetings.

In February, Peter Rodriguez, David Novo and Tayler Malinowski traveled to the University of Florida to present the club's research at The Third Annual Florida Undergraduate Research Conference. Their poster was titled "Does fluctuating asymmetry predict immune function in male house crickets, *Acheta domesticus*?" They co-authored the poster with Jessica Ricketts, Trace McClenen, Kevin McCarty, Kelsey Malinowski, Brandon Keener, Supriya Foster, Meagan Flynn, Keiauyndria Edwards, Jaron Dunnom, Michael Drayton, Rafael Brito, Shankira Bowe, Daniel Baker,

Shima Bazazzadeh and Dr. Michael Robinson.

Shankira Bowe gave the club's oral presentation (with the same co-authors) at the Florida Academy of Sciences in March. Finally, Rafael Brito gave the final presentation of the club's work at Barry University's Fifth Annual STEM Symposium: a poster titled "Asymmetry is not an honest indicator of immune function in male house crickets, *Acheta domesticus*." He had the same co-authors.

One ROADS member, Peter Rodriguez, spent his summer at the FAS Center for Systems Biology at Harvard University after winning a competitive Undergraduate Summer Research Internship. ROADS member Kevin McCarty completed

the first year of a two-year internship in the Educational Partnership Program of the National Oceanic and Atmospheric Administration.



ROADS Coordinator Dr. Michael Robinson and Shankira Bowe at the FAS conference, Miami Shores, FL, March 8-9, 2013.

Alumni Profile – Maria Abreu, PhD



Maria Abreu, PhD

I was always a very inquisitive child. However, it wasn't until my undergraduate years at Barry University when I truly discovered my love and passion for science. I was blessed with the opportunity to participate in the NIH-supported Minority International Research Training (MIRT) and Minority Access to Research Careers (MARC) programs.

Through the MIRT program, I was afforded a once in a lifetime chance to conduct research at Chonnam National University in Gwangju, South Korea. My research focused on the gonadotropin-releasing hormone receptor (GNRHR). Following this experience, I was accepted as a MARC trainee, where I worked under the supervision of Dr. Gerhild Packert. Her mentorship and passion for science further expanded my desire to pursue a career in science. In Dr. Packert's lab, I studied the genetic and molecular interactions of the *tuh-1* locus in *Drosophila melanogaster*. I worked in Dr. Packert's lab for nearly three years. During the summer of 2002, I participated in the SMART program at Baylor College of Medicine in Texas, and studied the expression and characterization of the recombinant beta1 domain of the integrin alpha2/beta1 under the supervision of Dr. Miguel Cruz.

As a whole these research experiences allowed me to hone my presentation skills through the numerous oral and poster presentations trainees are required to give. I was also able to present my work at both regional and national conferences. Through these experiences, I learned the importance of being able to communicate effectively. In addition, these research experiences

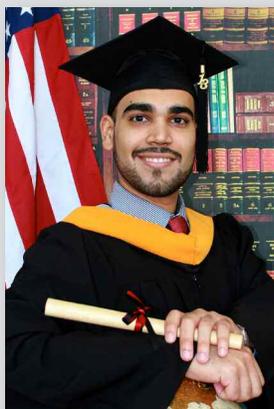
prompted my interest in obtaining a graduate degree in the biomedical sciences.

In 2004, I began my path to obtaining my doctorate in cancer biology. Initially, I was accepted as a post-baccalaureate student in the NIH-supported Initiative for Minority Student Development (IMSD) program at Vanderbilt University Medical Center in Nashville, Tennessee. I was fortunate enough to work with Dr. Linda Sealy. Under her unwavering guidance, I was then accepted as a graduate student at Vanderbilt University's Interdisciplinary Graduate Program (IGP). As a graduate student, I focused on the transcription factor C/EBPbeta-3 (LIP) and its role in human breast cancer. As a graduate student I was awarded several training grants as well as the Ruth L. Kirschstein National Research Service Awards for Individual Predoctoral Fellowship (F31). My graduate work resulted in two first author publications.

Building upon my experiences at Barry University, I was also awarded a number of travel grants and presentation awards. During my time at Vanderbilt University I was also involved in a number of graduate student associations, including the Cancer

Biology Student Association (CBSA), and was elected president of the Alliance for Cultural Diversity in Research (ACDR). Overall, my graduate years have been some of the very best years of my life.

Following graduate school, I was awarded a T32 postdoctoral fellowship at the Sanford Burnham Medical Research Institute (SBMRI) in La Jolla, California. As a postdoctoral fellow, I worked with Dr. Sara Courtneidge. The Courtneidge laboratory studies the molecular mechanisms of cancer cell invasion. The San Diego/La Jolla area is filled with numerous research institutes and companies. During my postdoctoral fellowship, I was introduced to different industry scientists and research, which ultimately resulted in a job opportunity with the California Institute for Biomedical Research (Calibr) that starts this September. This has been a very exciting time and I hope moving into the industry setting will allow me to learn more about business and starting up biotech companies and participate in clinically driven research. After all, my passion for science has always been fueled in the hopes of making a difference in patients.



"Being exposed to scientific research during my years as a MARC U STAR trainee opened up the door for numerous opportunities. It was exciting being part of a team working on identifying a new drug target to fight malaria; better understanding the effects of ethanol exposure on the developing nervous system; as well as shedding light on the unknown mechanisms of the deleterious cardiac effect with extracorporeal membrane oxygenation.*

Now as a young scientist, I am able to understand the multiplicity of science and the freedom of always having something new to discover each and every day. Also participating in scientific conferences provided me the opportunity to network with peers and role models; I wish to follow in their footsteps one day. Training in the MARC U STAR program was challenging, but it allowed me to continue growing into a stronger individual. Furthermore, the mentorship and support I received throughout the program was phenomenal.*

The skills and knowledge I gained from my experiences in the MARC U STAR program have provided me with a spectrum of fascinating career options and will complement the contributions I am able to make as a physician-scientist."*

*Alec Davila (MARC '13)
MD Program, Georgia Regents University, GA*

Student Accomplishments

Launie Bruno (MARC '13), **Sue Ann Flores** (RISE), **Talia Guardia** (RISE), **Nicole Lopez** (RISE), and **Andrea Tirado** (MARC '13) were inducted into Sigma Xi, The Scientific Research Honor Society, April 8, 2013.

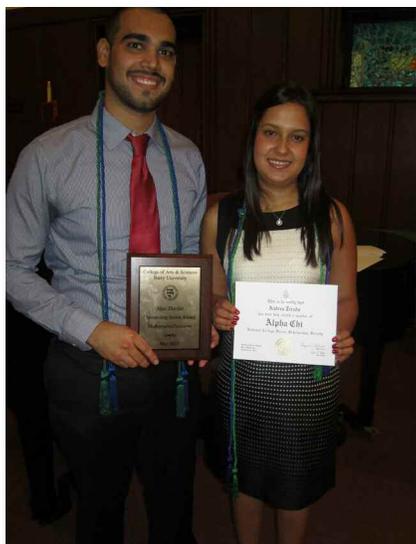


Sigma Xi Induction Ceremony, April 2013

Alec Davila (MARC '13) and **Andrea Tirado** (MARC '13), were placed on the President's List, one of Barry's highest student honors, for their academic achievement of earning a 4.0 GPA for the spring 2013 semester.

Alec Davila (MARC '13) is the recipient of the Senior Class Excellence in Leadership Award and the College of Arts and Sciences Dean's Award in Mathematics and Sciences for 2012-2013.

Alec Davila (MARC '13) and **Andrea Tirado** (MARC '13) were inducted into Alpha Chi, National Scholastic Honor Society, May 2013.



Alpha Chi Induction

Precious de Verteuil (MARC) was selected as a finalist among 25 research summer interns to give a talk at The Center for Translational Research Symposium at The University at Buffalo Downtown Campus on August 2, 2013.

Khalid El-Amin (MARC) received the first place award in psychology at the **Fifth Annual Science Technology Engineering and Math (STEM) Symposium**, March 27, 2013, at Barry University for his poster presentation titled "Perceptions of Justice as Predictor of Student Misconduct." This was in recognition of his on-campus research with Dr. Guillermo Wated. In addition, **Andrea Tirado** (MARC '13) received honorable mention for her poster presentation.



STEM psychology students and mentors

Khalid El-Amin (MARC) was featured in the University of South Florida Newsletter for the Department of Mental Health Law & Policy (MHLP) in the Louis de la Parte Florida Mental Health Institute (FMHI) in reference to his summer research experience. The newsletter is available at www.cbcs.usf.edu/NewsEvents/ViewNews.cfm?NewsID=775.

Talia Guardia (RISE), **Nicole Lopez** (MARC), **Jovans Lorquet** (RISE), **Maria Martinez** (MARC), **Alice Nakasone** (RISE), and **David Novo** (RISE) were placed on the Dean's List in recognition of their academic achievement of earning a 3.5 or greater GPA for the spring 2013 term.

Talia Guardia (RISE) was inducted into Gamma Sigma Epsilon, the chemistry honor society, on April 29, 2013.

The top two awardees at the **Fifth Annual STEM Symposium** on March 27, 2013, were **Talia Guardia** (RISE) for her poster presentation titled "Transforming Growth Factor-beta (TGF- β) inhibits growth of human myeloid leukemia cells and downregulates the expression of cdk inhibitor, p18," for research she conducted on-campus with Dr. Tang Hu; and **Nicole Lopez** (MARC) for her poster presentation titled "Investigation of potential cardiomyocyte proliferation genes," for research she conducted on-campus with Dr. Brenda Schoffstall. **Alec Davila** (MARC '13) and **Sue Ann Flores** (RISE) were also recognized for their poster presentations.



STEM Winners

Shanika Kingston (RISE) was inducted into Delta Epsilon Sigma Honor Society, recognizing academic accomplishment and service to the community, May 2013.



Aaron Mohammed (RISE) won first place in physical sciences at the **STEM Symposium**, March 27, 2013, at Barry University for his poster presentation titled "The impact of physics beyond the standard model on the blue loop phase of stellar evolution." This was in recognition of his on-campus research with Dr. Maurizio Giannotti.

Andrea Tirado (MARC '13) is the recipient of the Outstanding Senior Psychology Student Award, April 17, 2013.

Faculty Accomplishments



George H. Fisher, professor of chemistry, received the American Chemical Society (ACS) Award for Encouraging Disadvantaged Students into Careers in the Chemical Sciences, sponsored by The Camille and Henry Dreyfus Foundation Inc., at the 245th ACS national meeting,

April 9, 2013, in New Orleans, LA. This award is in recognition for mentoring close to 100 underrepresented minority high school, undergraduate, and graduate students. As a result of his mentoring, many of these students have gone on to professional graduate or medical schools or entered scientific careers in industry, teaching, or research.

Tang Hu, associate professor of biology, and his RISE student Talia Guardia co-presented a poster titled "Transforming growth Factor-beta (TGF- β) inhibits growth of human myeloid leukemia cells and downregulates the expression of CDK inhibitor, p18INK4C" at the American

Association of Cancer Research (AACR) Annual Meeting, in Washington, DC, April 6-10, 2013. The abstract was published in the Proceedings of American Association of Cancer Research (54: 142, 2013). Dr. Tang Hu also reviewed one manuscript for the Journal of Pediatric Oncology (MS ID: JPO-XZ-#). He was appointed to the editorial board for the Journal of Pediatric Oncology in March 2013 (www.phaps.com/pubs/editorial-board-jpo/).

Tony Wallner, associate dean of undergraduate studies and professor of chemistry, is coeditor of a book titled "NMR Spectroscopy in the Undergraduate Curriculum," published spring 2013 in the ACS Symposium Series, 1128.

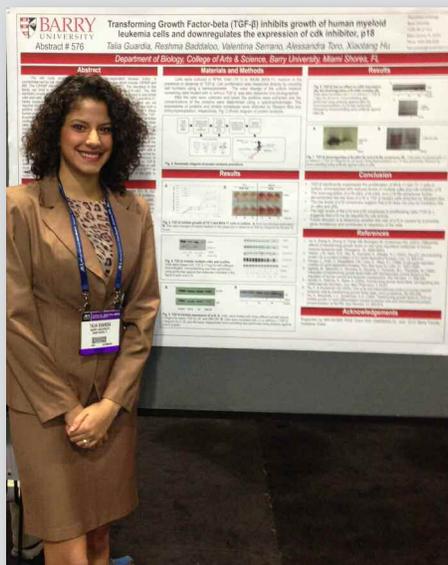
Student Attendance & Presentations at Scientific Meetings

American Association for the Advancement of Science (AAAS), Boston, MA, February 14-18, 2013. MARC student Alec Davila made a poster presentation.

Third Annual Florida Undergraduate Research Conference, Gainesville, FL, February 22-23, 2013. MARC student Launie Bruno presented a poster. RISE students Sue Ann Flores, Aaron Mohammed, Kendymill Taveras and ROAD club members David Novo, Peter Rodriguez, and Tayler Malinowsk made poster presentations.



77th Annual Florida Academy of Sciences, Miami Shores, FL, March 8-9, 2013. MARC students Alec Davila, Nicole Lopez, and ROADs students made poster presentations.



American Association for Cancer Research (AACR), Washington, DC, April 6-10, 2013. RISE student Talia Guardia made a poster presentation.

245th American Chemical Society National Meeting and Exposition, New Orleans, LA, April 7-11, 2013. Aaron Mohammed (RISE-poster) and Sue Ann Flores (RISE-observer).

27th National Conference on

Undergraduate Research (NCUR), La Crosse, WI, April 11-13, 2013. Khalid El-Amin (MARC-poster), Andrea Tirado (MARC-poster), Maria Martinez (MARC-observer), Sue Ann Flores (RISE-poster), and Aaron Mohammed (RISE-poster).



Barry University hosted the **Fifth Annual Science, Technology, Engineering and Math (STEM) Symposium**, March 27, 2013. Undergraduate and graduate students presented posters related to their past and current research in biology, chemistry, computer science, information technology, mathematics, psychology, and physics. There were 42 posters (a total of 17 by MARC and RISE students), 21 judges, and close to 250 participants and attendees.

Alumni Updates

Maria Abreu, PhD (MARC '03) is currently a postdoctoral fellow at Sanford-Burnham Research Institute in La Jolla, CA, and will start working at the California Institute for Biomedical Research (Calibr) as a scientist, September 2013.

Andreina Aguado, PhD (MARC '07) is currently a full-time chemistry faculty member at Miami Dade College and an adjunct professor in physical sciences at Barry University, fall 2013.

Earl Allick, MS (MBRS '96) received his MS in Educational Leadership from Barry University in 2012. He is currently the assistant principal at Allapattah Middle School in Miami, FL.

Monica Barreto, MS (MARC '12) is enrolled in the PhD in Clinical Psychology program at Western Michigan University, fall 2013.

Christian Bureu (MARC '12) is enrolled in the PhD in Vision Science program at the State University of New York, fall 2013.

Susana Chan (MARC '12) is a second-year PhD student at the University of Michigan, in the Cellular and Molecular Biology Program. Susana was awarded a position in the NIH cellular and molecular biology training grant and also published an article in the journal *Genome Research* (Cold Spring Harbor Laboratory Press) titled "HIV Infection Reveals Wide-Spread Expansion of Novel Centromeric Human Endogenous Retroviruses," May 2013.

Frantz E. Colin, MD (MBRS/MIRT '99) has founded and incorporated a nonprofit organization, the Colin Cares Foundation Inc. (www.colincaresfoundation.org). Colin Cares Foundation Inc. (CCF) is an organization that has been established to bring about mental health awareness, education and support to South Florida. CCF targets communities where fear and stigmatization prevent individuals from seeking the appropriate treatment. More specifically, CCF will identify and work within African-American, Caribbean, Hispanic, and LGBT communities. Dr. Colin is also an adjunct faculty member at Barry University in the Division of Nursing and public health program.

Alec Davila (MARC '13) is enrolled in the MD program at the Medical College of Georgia at Georgia Regents University, fall 2013.

Adilen Lima-Dillingham, PA (MBRS '98) is a physician assistant practicing dermatology at Gulf Coast Dermatology in Jacksonville, FL.

Brian Garner (MARC '11) is a research associate in the Hussman Institute of Human Genomics Biorepository Core Unit at the University of Miami Miller School of Medicine in Miami, FL.

Gina Guillaume, MS (RISE '11) received her MS in Interdisciplinary Health from Drexel University in Philadelphia, PA, in 2013. She is enrolled in the MD program at Howard University in Washington, DC, fall 2013.

Ivan Gonzalez, MD (MBRS '96) was awarded a K12 grant from Miami Clinical and Translational Science Institute (CTSI) for up to \$100,000 per year for three years. His current research study is on immunosenescence and HIV in the pediatric population. Ivan is an assistant professor of clinical pediatrics at the University of Miami Miller School of Medicine.

Maxime Jean (RISE '11) is enrolled in the University of Rochester Medical Scientist Training MD/PhD Program, fall 2013.



Alton Johnson (RISE '11) is a second-year podiatric medical student at Kent State University College of Podiatric Medicine in Cleveland, OH. Alton was recently appointed as an academic council student representative and received a scholarship

from the North Central Academy of Podiatric Medicine in Ohio. He is engaged to Nathalie Charles, a Barry alumna and will be getting married in New Orleans, Louisiana in December 2013.

Giavonni Lewis, MD (MBRS '99) is an assistant professor of surgery at the University of Utah Hospital and Clinics. She received her general surgery training at Loyola University Medical Center in Maywood, IL. Her specialties include acute burn care, burn surgery and reconstruction, trauma, and emergency general surgery. Dr. Lewis completed a fellowship in burn surgery at the University of Washington Burn Center in Seattle, and she continued her training in critical care at Washington Hospital Center in Washington, DC.



Maria Luisa Pineda-Echeverri, PhD and husband

Maria Luisa Pineda-Echeverri, PhD (MARC '07) received her PhD from the Watson School of Biological Sciences at Cold Spring Harbor Laboratory as an Arnold and Mabel Beckman graduate student and a William Randolph Hearst foundation scholar, October 2012. She decided to combine science and business together with her critical-thinking and interpersonal skills in her new ventures. To deepen her knowledge of the angel funding process, Maria consulted for a Long Island venture capital firm, Canrock Ventures LLC, and the fourth-largest angel network, Golden Seeds LLC. Maria has recently started a bioinformatics start-up company, Envisagenics Inc. as the co-founder and CEO.

Summer Research Presentations Series, Fall 2013

Each summer MARC U*STAR scholars and 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 Presentation Series." This series begins on Thursday, September 5, 2013 at noon in NHS 336. Please note that the presentations on Wednesday, October 2 will be held in Library 145.

Thursday, September 5, 2013

Shanika Kingston (RISE-Biology/Chemistry) "Characterization of novel genes required for meiotic silencing by unpaired DNA." University of Missouri, MO

Alice Nakasone (RISE-Biology) "S. Aureus and biofilm development" Barry University, FL



Mariana Ruiz (RISE-Biology) "Learning research techniques at Barry University" Barry University, FL

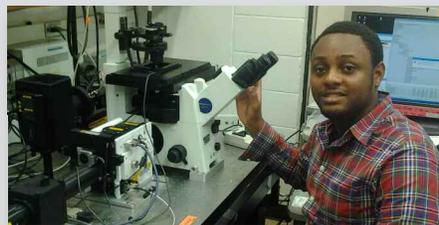
Friday, September 13, 2013

Nicole Lopez (MARC-Biology) "Potential plant host and whitefly vector dietary conditions associated with the inoculation of foregut borne criniviruses" University of California, Riverside, CA



Jovans Lorquet (RISE-Biology) "In vivo characterization of protein interactions in S. pombe through confocal microscopy"

Raymond and Beverly Sackler Institute, Yale University, CT



Thursday, September 19, 2013

Talia Guardia (RISE-Biology) "Determining the role of Hyaluronic acid synthase 2 (Has2) on metastasis of lung adenocarcinoma" Massachusetts Institute of Technology, MA



Precious de Verteuil (MARC-Biology) "Voltage-operated calcium channels in astrocyte activation" University at Buffalo, NY



Friday, September 27, 2013

Sue Ann Flores (RISE-Chemistry) "Understanding the role of Id-transpeptidation in growth of the bacterial

plant pathogen *agrobacterium tumefaciens*" University of Missouri, MO

Launie Brunot (Mathematics) "Error and erasure decoding for reed-solomon codes" University of Louisiana, Lafayette, LA

Wednesday, October 2, 2013

Maria Martinez (MARC-Psychology) "Position dependency in object recognition" Harvard University, MA



Khalid El-Amin (MARC-Psychology) "Predictors of burnout in human service providers" University of South Florida, Tampa, FL

Thursday, October 3, 2013

Precious E. Ezeamama (Biology) "Creatine influence on acute to low ethanol exposure on cardiac heart muscle" Howard University, DC

Peter Rodriguez (Biology-ROADS) "Exploration of neuronally enriched mRNAs in the nervous system" Harvard University, MA

Kevin S. McCarty (Biology-ROADS) "Restoring and Sustaining Habitat for Fisheries, Marine Life, and Coastal Communities by Evaluating Data that are Essential for Selecting Habitat Focus Areas" National Oceanic and Atmospheric Administration, FL



Davecia Ragoonath-Cameron, MS (MARC/MI RT '02) is currently managing editor for Hematology/Oncology for Clinical Care Options (CCO). In September 2012, she gave birth to a baby girl, Kira Riley



Cameron; she joins her big brother Kai Ronan Cameron who is now 3½ years old. Davecia is married to Matt Cameron, the director of housing and residence life at Barry University.

Christina Stujenske (MARC '02) is the science department chair at the New World School of the Arts in downtown Miami. She teaches AP chemistry and AP biology. She has also published three model-eliciting activities through CPALMS, which is the official source of Common Core State

Standards and course descriptions in Florida.

Karla Rivera-Torres (MARC '12) is enrolled in the PhD in Education and Information Studies program at the University of California-Los Angeles, fall 2013.

Andrea Tirado (MARC '13) is enrolled in the MS in Industrial Organizational Psychology at Florida International University, fall 2013.

Barry University

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MARC U*STAR/RISE PROGRAMS

"Being part of the MARC program was the best thing that happened to me at Barry. It not only prepared me for grad school, but also helped me discover how much I love doing research."

*Andrea Tirado (MARC '13)
MS Industrial Organizational Psychology, Florida International University, FL*

Now accepting
applicants for
RISE program!

End of Semester Party

Students and faculty ended the academic year with the annual "End of Semester" party May 2, 2013. During this event we acknowledged the students' graduate and summer research internship acceptances, and faculty support of the MARC and RISE programs.

