BIOLOGY

DEPARTMENT NEWSLETTER

2018 | Issue #7

BIOLOGY
DEPARTMENT NEWSLETTER

Senior Editor
Christine Klusko

Senior Writer
Ashley Taveras

Contributing Writer
Azka Prizada

Graphic Design Manager
Emma Gill

Design Concept
Rychelle McKenzie

Photographer
Andre Washington

Contributing Photographers
Bethany Ho
Georgio Malouf
Joseph Uraga

CCNY BIOLOGY DEPARTMENT

In this Issue

Biology Club Executive Board

Reid Vero
President

Elizabeth Soto
Vice President

Kimberly Keblish
Treasurer

Sadia Rahman
Secretary

Karla Jacome
Secretary

Renzo Tuesta
Director of Mentoring

Shelly Zhou
Co-Director of Outreach

Ishan Jat
Co-Director of Outreach

Pictured above from left to right:
Sadia, Elizabeth, Reid, Shelly, Ishan, and Karla

If you want to become a member of the club, have any questions or suggestions, please contact us at biologyclub@gtest.ccny.cuny.edu.

Faculty SPOTLIGHT

Dr. Osceola Whitney

> *"In a place like New York, where there's so many different cultures and languages, there's a natural curiosity as to how language works."*

One of the newest additions to the CCNY Biology Community is making waves as a researcher, mentor and scholar. Although his work has taken him all over the country from New Mexico to Virginia, Dr. Osceola Whitney is a New Yorker at heart. He was born and raised in Harlem, at close proximity to the City College campus. Now, as an assistant professor a few blocks away from his childhood digs, he considers the CCNY campus home, in more ways than one. While he's a part of the Biology department, his background is in Neuroscience (PhD, Florida State University, 2004.) He explains that the two are interconnected, especially in his area of expertise-the mechanical functions in the brain that allow for learned vocalization. Specifically, he observes the Zebra Finch Songbird, native to Australia, and the way certain brain functions allow for these particular "songs" to happen. In short, all vocalization is learned and easily processed at a young age-much like human speech and language.

His passion for research and teaching were able to merge on the CCNY campus, where he finds the connection between his findings and his students motivating. His research in learned speech and vocalization is especially relevant to City College students, most of whom are native to a different country. He adds, "In a place like New York, where there's so many different cultures and languages, there's a natural curiosity as to how language works."

Most students at City College come from diverse backgrounds, with a large percentage learning English as a second language at more developed stages of their life. As students try to come to terms with a new learned language in an effort to navigate a larger social space, they can apply Dr. Whitney's findings on brain-cell functions to their own lives.
Making material and lectures relevant to students is important to Dr. Whitney; developing stories as a method to teach science to his students is one of his many goals. This makes it more interesting for the student, and it also allows them to question and "rekindle their childhood curiosity." This curiosity can then lead students to help fight the stigma that science is inaccessible and meant only for the "smart ones."

As an African American, Dr. Whitney has faced similar issues CCNY students face when it comes to the science community and minorities. There might occasionally be a sense of doubt for most students, which results in a hindrance to their success. Dr. Whitney tries to combat this with his teaching methods and values.

He wants his students to view him as a "person they can have a conversation with" rather than as just a professor. Dr. Whitney believes in the notion of "my door is always open," and offers a helping hand or serves as a guiding light to any student who comes by. "Being a good mentor is a balance of being available and being unavailable. Being available to inspire confidence in what they do, and being unavailable to inspire confidence in the idea that "you can do it."

What keeps Dr. Whitney motivated and energetic? "The thought of seeing my students as colleagues or as professionals in the outside world." Dr. Whitney has big plans for biology students; plans that will allow students to leave with a sense of confidence, regardless of where they end up or what they end up doing.

A male zebra finch on a perch in the lab.

Publications & PRESENTATIONS

Dr. Ana Carnaval

Costa G., and **Carnaval A.** 2018. Biome stability in South America over the last 30 kyr: Inferences from long-term vegetation dynamics and habitat modelling. Global Ecology and Biogeography DOI: 10.1111/geb.12694

Machado C, Galetti P and **Carnaval A.** 2018. Bayesian analyses detect a history of both vicariance and geodispersal in Neotropical freshwater fishes. J Biogeography. https://doi.org/10.1111/jbi.13207

Strangas M. L., Navas, C. A., Rodrigues M. T., **Carnaval A.** 2018. Thermophysiology, microclimates, and species distributions of lizards in the mountains of the Brazilian Atlantic Forest. Ecography. DOI: 10.1111/ecog.03330

Dr. Mark Emerson

Buenaventura, D.F., Ghinia-Tegla M.G., **Emerson, M.M.** 2018 Fate-restricted retinal progenitor cells adopt a molecular profile and spatial position distinct from multipotent progenitor cells. Developmental Biology: DOI: 10.1016/j.ydbio.2018.06.023

Chen X, **Emerson M.M.** (April 2018) Investigation of Notch Signaling in Cone Fate Specification in Vertebrate Retina. Poster presentation at Northeast Regional Meeting of the Society for Developmental Biology, Woods Hole, MA.

Ghinia Tegla MG, Thakurdin C, Kim D, Gonzalez K, **Emerson M.M.** (May 2018) Characterization of in vivo CRISPR-mediated Otx2 mutants. Poster presentation at Gordon Research Seminar and Conference, Visual System Development, Lucca, Italy.

Patoori S, Gopal A, Jean-Charles N, McCaffery S, **Emerson M.M.** (July 2018) Cis-regulatory control of Onecut1 in a fate-restricted retinal progenitor cell population. Poster Presentation Society for Developmental Biology Annual Meeting, Portland OR.

Schick E, McCaffery S, Keblish E, Thakurdin C, **Emerson MM** (Aug 2018) Lineage Analysis of a Restricted Progenitor Population in the Chick Retina. Poster Presentation at Neural Development Gordon Research Seminar and Conference, Newport, RI.

Dr. Jonathan Levitt

Khalil R., V. Contreras-Ramirez, **J.B. Levitt**. 2018. Postnatal refinement of interareal feedforward projections in ferret visual cortex. Brain Struct Funct. Jun;223(5):2303-2322.

Khalil R., M. Saint Louis, **J. Levitt**. 2018. Anatomical organization of feedback projections from extrastriate cortex to ferret area 18. Federation of European Neuroscience Societies Forum of Neuroscience, Berlin.

Khalil R., C. Gonzalez, **J.B. Levitt**, 2017. Developmental refinement of interhemispheric connections in ferret visual cortex. Society for Neuroscience Annual Meeting, Washington DC.

Khalil R., **J.B. Levitt**. 2017. Use of synaptic zinc histochemistry to reveal different regions and laminae in the developing and adult brain. J Vis Exp. Oct 29;(128).

Dr. David Lohman

Kaliszewska, Z. A., **D. J. Lohman**, K. Sommer, G. Adelson, D. B. Rand, J. Mathew, G. Talavera, and N. E. Pierce. 2015. When caterpillars attack: biogeography and life history evolution of the Miletinae (Lepidoptera: Lycaenidae). Evolution 69: 571-588. DOI: 10.1111/evo.12599

Lohman D.J. Evolution and biogeography of Batesian mimetic diversity in Elymnias butterflies (Nymphalidae: Satyrinae). Invited presentation at NSF-NSFC Biodiversity Partnerships Workshop. Beijing Botanical Garden, Chinese Academy of Sciences, September 2014.

Dr. Hysell Oviedo

Oviedo, H.V. 2017. Connectivity motifs of inhibitory neurons in the mouse Auditory Cortex. Scientific Reports.7(1):16987. DOI: 10.1038/s41598-017-16904-2

Dr. Bao Vuong

Nicolas, L., M. Cols, J. E. Choi, J. Chaudhuri, **B. Vuong**. 2018. Generating and repairing genetically programmed DNA breaks during immunoglobulin class switch recombination. F1000Research. 7(F1000 Faculty Rev):458.

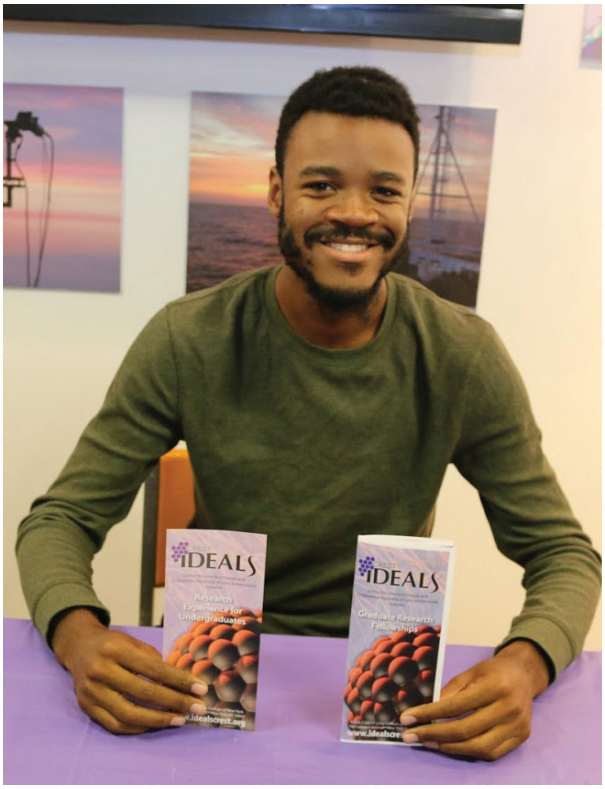
Recognition

Jamie M. Kass will be beginning a postdoc in April 2019 funded by the Japanese Society for the Promotion of Science (JSPS). He will work at the Okinawa Institute of Science and Technology (OIST) in the laboratory of Dr. Evan Economo, where he will use data generated from an island-wide biodiversity monitoring system to model how species ranges and interactions between invasive and native species change over time. These models will be integrated into a flexible workflow that will examine temporal trends concerning the predicted effects of climate change and invasive species on the island's native fauna.

Annual Division of Science Opportunity Fair, 2017

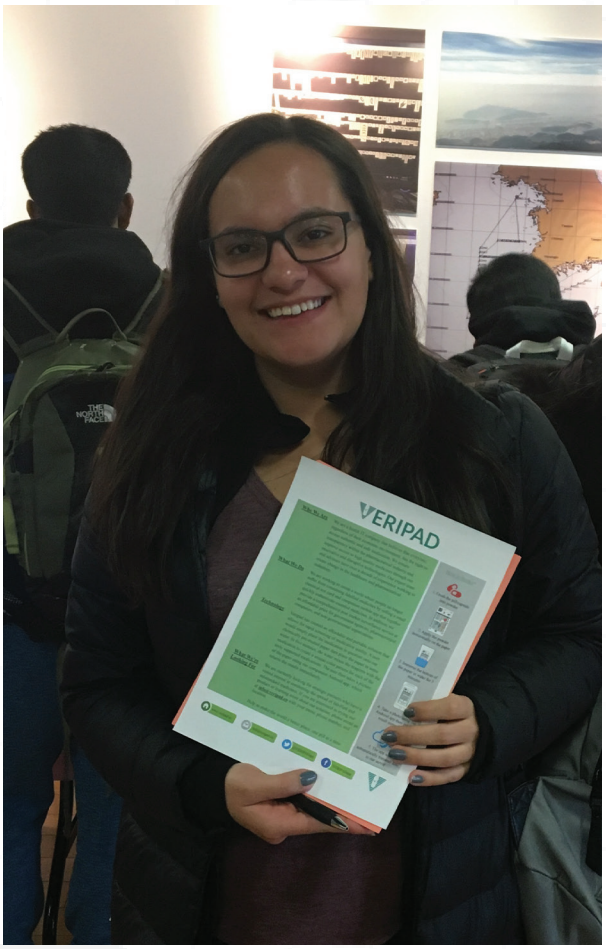
"Effective scientific education extends well past the classroom and requires immersion and experience. The opportunity fair creates a platform for budding scientists and to network directly with the people who can provide them with these experiences, making this fair an invaluable investment in their futures."

-- Georgio Malouf



"I loved that we didn't get a break from talking because so many students showed up! Students got information they wouldn't normally get from the websites."

-- Irving Estevez

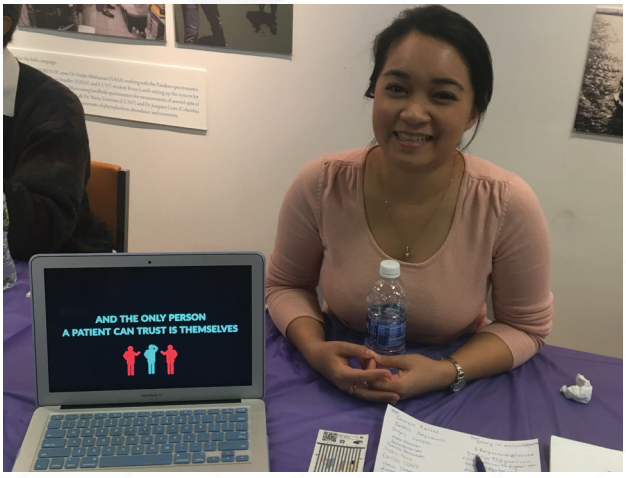


"It was great to see the students meeting and forming new connections with the people tabling. I really felt that this event had a positive impact on the students in attendance."

-- Reid Vero

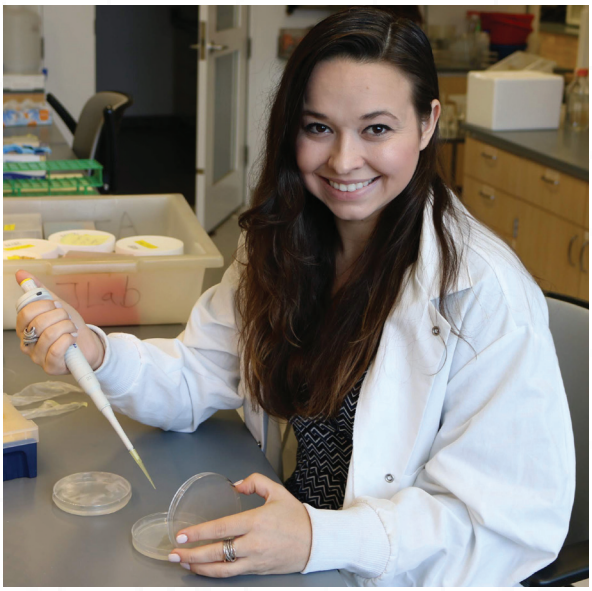
"The Annual Opportunity Fair is a great way to not just gain exposure for your own club or organization, but a peek into the amazing students at CCNY who all have big dreams and great potential."

-- Y-Lan Nguyen



Student SPOTLIGHTS

Dr. Monika Buczek



“Anyone can be a scientist if you put in the effort and have the curiosity.”

Being communicative and an expert at networking, Dr. Monika Buczek is a recently graduated Ph.D student who knows what she wants. After earning a B.S in Biochemistry at Boston College, Monika immediately entered a PhD program. Despite her long list of Master’s program acceptances, Monika knew she would regret not following her dream of moving to New York City. After a visit, CCNY immediately felt like home to her, the gothic buildings reminding her of Boston College days. Soon after enrolling, she joined the Janakiraman lab, a microbiology lab that focuses on E.coli cell division, where she was immediately welcomed by a positive and motivating scientific community. Monika credits her mentor Dr. Anuradha Janakiraman as one of her main motivators. Her lab community gave her the confidence to reach beyond, and in her second year she became a GAANN (Graduate Assistance in Areas of National Need) fellow, from which she received funding for her research. Through this program, Monika was able to learn more about biophysics, learn new techniques, get to meet with visiting biochemistry seminar speakers, and be trained in pedagogy to be able to teach her findings to undergraduate students.

An advocate for tutoring, mentoring and networking, Monika and some of her fellow classmates started the City College Science Alliance, a group open to all people doing science on the CCNY campus including both undergraduate and graduate students and faculty. Through this alliance, members are able to participate in social events like annual picnics and weekly happy hours. “The importance of this,” says Monika, “is being able to bring people out of their boxes and encourages them to chat with each other and collaborate.” She believes in the power of having allies that go through the same struggles as you, despite being in different fields.

Acknowledging the importance of her own support system, Monika serves as a mentor through the Women in Science program as well as being a science and math tutor for girls in middle school and high school. One of her goals is to increase the number of women in science and change the current image of a woman in science. Monika has put great effort into making connections with others and making her mark.

Being a pioneer for collaborative efforts across CCNY STEM programs, Monika has discovered a new-found passion for teaching. Through her experiences teaching undergraduate students, Monika has learned the importance of communicating that there is often more than one right answer. She also conveys the idea that some questions have no answers. Monika has been an adjunct lecturer for over three years, teaching three undergraduate courses, Cellular and Molecular Biology, Advanced Microbiology, and Microbiology for Health Majors. She also taught the summer 2018 Biology 10004 course at CCNY, where the goal is to teach non-science major students basic biology in relevant and intriguing ways. “Teaching solidifies what you thought you knew,” reflects Monika. “If you can really understand something, you should be able to teach it to someone else.”

Kevin Gonzalez

> *"When I first came into the college, I had every intention of going to medical school, but I think that's because I didn't know what research was."*

After "giving medicine a shot," Kevin Gonzalez was accepted into Dr. Mark Emerson's lab as a freshman, where he gained new insight into what doing research entailed. Before coming to City College as an undergrad, Kevin worked as a mechanic for Delta with no aspirations to pursue a college degree at all. After being encouraged by one of his coworkers to "try" college, Kevin enrolled at CCNY as a bio major. "When I first came into the college, I had every intention of going to medical school, but I think that's because I didn't know what research was. Where I came from, no one was a researcher."

Though he fell into the science community by chance, Kevin has achieved stardom within the science community at CCNY. "I worked a lot with electrical systems. So, I thought the closest thing to electrical systems is the human body-and that's how I chose my major." Kevin, whose success came as a surprise to him, was unsure of how his first semester would pan out. Thanks to his extensive reading log and willingness to commit to grasping the basics, it eventually became second nature for Kevin to understand science.

Having studied the retina in Dr. Emerson's lab for three years, he has transformed from mechanic to full blown research scientist. Kevin is an expert on how different cell types develop in our eyes, and finds that intensive time in the lab helped solidify what he was learning in the classroom, and allowed him to be more hands on. Nontheless, Kevin didn't shy away from admitting that it took him a full year before he was comfortable being in the lab and getting accustomed to the different techniques used in lab.

Kevin enjoys "the gritty nature of science." He credits being able to reach his full potential in and outside of the lab because of the connections he made with his "lab-mates" and the Biology faculty. He believes that being around people who "know so much more" than him is important in his own growth as a scientist. With the help and support of the NIH-funded MARC program and the NSF-funded REU, Dr. Jonathan Levitt, Dr. Christine Li and the rest of the biology faculty, Kevin has been able to land amazing opportunities. One of them was the Summer Honors Undergraduate Research Program at Harvard Medical School alongside Dr. Lisa Goodrich. In his work with Dr. Goodrich, he continued to do research on eye development, but focused more on the process of how different cell types within our eyes connect to one another. The summation of his research experiences helped solidify Kevin's goals of becoming a good scientist.

Kevin applied to twelve graduate schools. He got into every one. He will be attending Columbia University's doctoral program in Neurobiology and Behavior in the fall 2018 semester, where he will take his philosophy of what it takes to be a good scientist with him. What is that philosophy you might ask yourself, if wanting to emulate the work ethic of Kevin: think and ask a lot of questions!

Asim Shahid

> *"Figuring out how the body works and the systems outside of the body, like evolution were and continue to be passions of mine."*

Asim Shahid knew he wanted to be a doctor from an unusually early age, after a traumatic family event. His earliest memory was one that, while emotionally scarring, ultimately served as a turning point. "It was of my mother crying in response to the death of a family member. Being so young, you feel helpless and there's nothing I could do in that moment to make it better," he reflects. It was the sense of helplessness that motivated Asim into pursuing one of the most honorable professions of being a doctor and ultimately, biology made sense for Asim to pursue for his studies.

"Figuring out how the body works and the systems outside of the body, like evolution were and continue to be passions of mine," he explains. Hearing his passion makes it easy to believe that the hardworking pre-med student had a plan before entering the doors of CCNY. Thanks to guidance from his cousin and mentor, Waqar Khalid, a former pre-med CCNY alumnus and President of the Biology Club, Asim was able to know the ins and outs of the program. In his pre-med track at City College, Asim learned a lot about the different elements doctors need to know to better care for their patients. The main element is patient education. Through his experience volunteering in Franklin Hospital and being a medical scribe at The Forest View Center, Asim was able to shadow a doctor while gaining insight into how medical professionals interact with their patients, their patients' families and other professionals.

Asim unexpectedly opened a new door of opportunity when he decided to pursue research. Asim knew he wanted to conduct research in an area that was out of his comfort zone, doing so would motivate him to work harder and allow his experiences to expand. That very opportunity presented itself one day during an Organismic Biology lecture taught by Asim's mentor, Dr. Jay Edelman. In the midst of Dr. Edelman explaining some of his own eye research, curiosity sparked in Asim. "After hearing Dr. Edelman speak about the complexities of the eyes, I realized that we really take our eyes for granted. Before, a more naive me would have thought that research on eye movement was so insignificant." Asim continues doing research today, after his graduation, as it continues to intrigue him.

Asim's CV is filled with various titles around CCNY. In addition to his research work, Asim served as a teaching assistant for Chemistry 110 at CCNY. Asim was also the 2017-2018 Vice President of the Biology Club. He was one of the key organizers of two of the biggest biology events that helped students build their professional networks, as well as offered them opportunities to find new passions. Asim excelled at exploring new passions and clearly wants to open doors for his peers so they can be afforded opportunities as well. Asim graduated in spring of 2018 and will apply to medical school, allowing his past experiences to guide him to success.

Fathema Uddin

> *“Anything that I have achieved so far has a lot to do with the people who encouraged and helped me seek out opportunities.”*

For some there is a fine line between art and science. Others believe that the two couldn’t be more different. Fathema Uddin, a recent BS/MS Biology graduate, clearly believes that creativity is the driving force that fuels her two passions: biology and art, more specifically, henna art. While still a freshman, Fathema knew that her one goal after college was to attend medical school. After her third year on a pre-med track, she enrolled in honors research in Dr. Karen Hubbard’s lab and discovered a new passion for research. While her main focus has shifted, one thing remains constant throughout her academic career. Minoring in chemistry and art, Fathema has always had a passion for illustration, and even recalls hanging up her own artwork around the lab to add to the otherwise intense atmosphere.

“When I’m exhausting the science part of my brain, I can blow off steam with my art,” says Fathema. While she has a genuine interest in biology and her research, she recognizes the amount of hard work and determination required to fulfill such a tough course load. Aside from her success in the lab and classroom, Fathema has found success in her extracurricular activities as well.

Fathema, a member of the City College Academy for Professional Preparation (CCAPP), which is City College’s Science and Technology Entry Program (CSTEP), has been able to travel across America and present her research findings at national conferences. She attended the Annual Biomedical Research Conference for Minority Students (ABCRMS) in November of 2017, where she won an award for her poster presentation on her research on cell biology. Additionally, she won a 1st Place Distinguished Presenter award for her oral presentation on her research with Dr. Hubbard on chemotherapy related cognitive decline at a CSTEP conference in April 2018.

Her research with Dr. Hubbard has enabled her to learn about research techniques and to be part of a close community within the City College Department of Biology. Through Dr. Hubbard’s lab, Fathema met her mentor, a recent PhD graduate who undoubtedly assists, supports and encourages her to achieve such success, Dr. Ciara Bagnall. Fathema’s mentor is one of many who motivate and believe in her. Another driving force behind Fathema’s success is Ms. Stanley, her CCAPP advisor, who encourages her to seek out opportunities like the ABRCMS conference. “Anything that I have achieved so far has a lot to do with the people who encouraged and helped me seek out opportunities.” Another opportunity to note was receiving the Dr. Saul Heiligman Scholarship, an award for which she applied. Fathema pays it forward as a mentor for new members of Dr. Hubbard’s lab, as well as serving as a tutor for the Academic Resource Center (ARC) tutoring program where she helps fellow students with subjects like organic chemistry and math.

While Fathema’s achievements in science are a testament to her hard work, she also runs her own henna art business on the side. Fathema is able to refine her illustration skills and always have an opportunity to release some creative energy, although that creativity is not exclusive to her “art side” only. Fathema hopes to one day be a Physician-Scientist, so she can combine her love for medicine and research.

Maria Strangas

When asked how she discovered her passion for evolutionary biology, Dr. Maria Strangas excitedly replied. The Michigan native revealed that she found her calling after reading "The Beak of the Finch" by Jonathan Weiner. After majoring in Ecology and Evolution at the University of Rochester, Strangas moved to New York City. She started off as a lab tech at City College while also working as an after-school teacher in Queens. Being a member of the City College community, she was inspired to continue her studies in evolutionary biology and was accepted into the CUNY PhD program, where she completed her studies in Ecology, Evolution and Behavior in Dr. Ana Carnaval's lab. She found the community at City College inviting and motivating, adding that the science community is "tight knit" despite being in the middle of one of the largest cities in the world.

In an effort to perpetuate the "knit-iness" of the science community, Maria, alongside other Biology faculty and students, founded the City College Women in Science program. She credits the program as one of the integral parts of her experience at CCNY, and even ran the Women in Science mentoring program. Although it sounds like an exclusive "girl's club" the program is open to men and women, with a goal to empower and advocate for women in the scientific community. "We wanted to provide emotional support and career guidance for women... It's important to have mentors as women, especially in male dominated fields."

Maria considered the fact that women especially are seeking this connection, considering that as you go higher up in the ranks of education and companies, there are fewer and fewer women. Five years after its conception, Maria was positively

> *"It's important to have mentors as women, especially in male dominated fields."*

overwhelmed with the amount of people willing to help build a support system within the community. Although Maria ran a mentoring program and served as a mentor herself to several undergraduates, she credits one woman in particular as her own personal mentor. Her advisor, Ana Carnaval, was one of her top motivators throughout her years in the PhD program. To Maria, a great mentor is willing to push you to reach for opportunities and encourage you to go beyond, and Ana did just that. Of the many opportunities Maria was offered during her time at CCNY, she states that her opportunities to travel were among the most rewarding and memorable.

Her research, focused on lizards in Brazil, allowed her to travel to Sao Paulo to do field work. She was able to conduct experiments about temperature tolerance, which informed her of the species' evolutionary history. In addition, she also worked in Canberra, Australia where she was able to learn new molecular techniques that then allowed her to complete her research. "My projects are very integrative, because I incorporate information about genetics, physiology, climate data and microclimate data to answer my questions," says Maria, adding that this variety is what allows her to be creative within her own projects. This, along with her passion for education and mentorship, is what she hopes to hold onto after completing her chapter at CCNY.
In spring of 2018, Maria began her new career as Manager of the Science Research Mentoring Program at the American Museum of Natural History. The program places high school students in New York City in research labs at the museum, allowing them to conduct actual research alongside grad students, curators, and research assistants. She plans to continue her own research with high school students as well, which includes using information on temperature tolerance in lizards to evaluate what environments they are able to live in. "When you're teaching other people about the science that you do, your work improves. You have to be able to explain it well and teach it to someone else, which helps you clarify and learn new ideas along the way." Maria hopes to stay within the areas of science education and research, while continuing to find ways to bring those two areas together, as both are often separated but have a lot to offer each other.

Biology RECOGNIZES

Hector Fermin

Hector Fermin's short title simply says, "Chief College Lab Technician," but he is in charge and responsible for so much, it can easily be expanded upon. Having had over a decade in the CCNY Biology "family," as he coins it, Hector's introduction to the community was rather abrupt. The Dominican native, born in the city of Nagua, came to New York City with his family as a teenager-reluctantly so. Having had a passion for science and biology since his younger years, Hector immediately found solace in the same community where he currently shines as Chief.

Hector graduated in 2007 with a major in biology. He completed his research in Dr. Tadmiri Venkatesh's lab, and began his lab technician experience soon after. He knows the CCNY environment and the biology family is where he has planted his roots.

His typical day usually starts in the morning, when he comes in to check his email and revise his tasks for the day. He then starts the prep for several classes, which can involve anything from getting samples prepped for certain experiments or preparing solutions, to making sure the fire extinguisher in the classroom works.

Although humble, Hector recognizes that his job is essential to the safety and efficiency of the labs. One of his main tasks, making sure all labs comply with federal regulations, is a testament to that.

Even though he's very much in the background of things given the nature of his tasks, Hector's interaction with faculty and students makes him feel a part of something bigger. "Everything I do is for the benefit of the students. I have the power to help change and renovate the labs and add or fix equipment." he says. Currently, Hector is working on renovating four labs on the CCNY campus. Outside of the lab, you can be sure to catch Hector riding his bike around NYC or reading his favorite book on the campus benches or, more recently exploring Europe on summer vacation.

Leon Tachaur

Recently celebrating his 10th year at CCNY is England's finest and our very own Head of Scheduling, Leon Tachauer. A few of Leon's tasks include entering courses and instructors on CUNYfirst, finalizing classroom reservations, maintaining the college bulletin, approving new degrees and curricula, and tracking overall faculty workloads. Leon describes it as "controlled chaos," as he's grown used to the increased workload before each semester.

Leon always wanted to work for CUNY, given its admirable reputation. When applying to CCNY, he was impressed with the vast opportunities and diverse student population that come with the institution. "When you think of immigrants and where our people had a start in New York, then you immediately think of CCNY. Historically we've always had a strong community and have always been a strong school," he comments with pride.

With all success comes hardship, and the toughest part for Leon has been being away from his family, especially his daughters: Anna, Lea, and Maya. His family lives in London. He only gets to communicate with them digitally and sees them once a year. With love in his heart, he says that he works for his daughters to go to college one day.

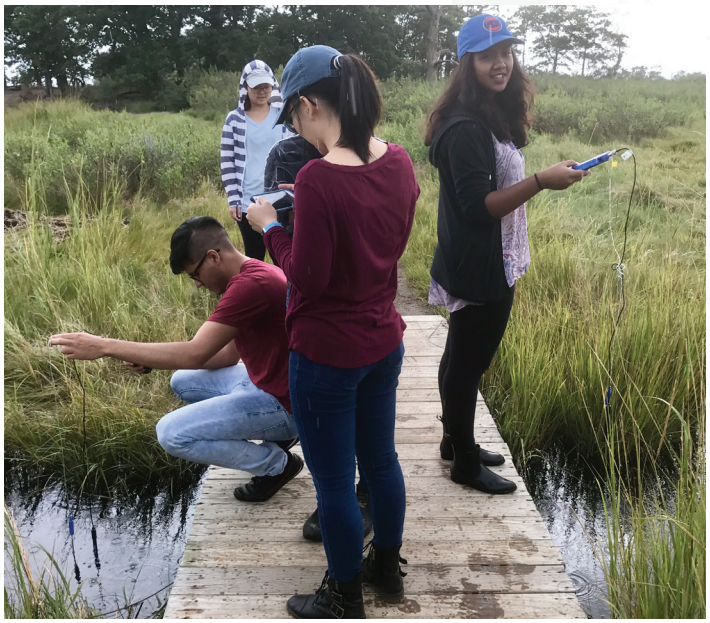
As Leon's career moves on, he wants to be involved in more aspects of the school, and find ways to make the scheduling process run smoother. He states, "Lizette, Ebony, and Veronica are the key to our operation and work just as hard to make my life easier." It is obvious this scheduling team makes everyone's lives easier, and we are very grateful to have each of them.

Biology RECOGNIZES

Marshland Conservancy

Every semester the students in Biology 20700, Organismic Biology, get on a bus to travel from the bustling streets of New York City to a more serene and natural wildlife sanctuary. The Marshlands Conservancy, located in Rye, is home to multiple habitats and species: salt marshes and meadows, wild turkeys, deer, crabs, worms, and a variety of plant life. Students record their observations, which vary from changes in the salinity or dissolved oxygen of water at different sites, to how the weather is correlated with these changes, to how species are able to adapt and survive under different conditions. The data actually have a dual purpose; they also assist the Conservancy in collecting information on the different species and ecosystems for their own database.

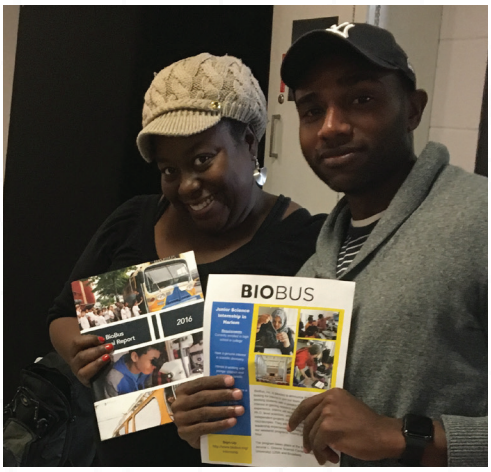
Dr. Jonathan Levitt, Chair of the Department of Biology says, “the benefit of having these students go on this trip every year is that they get to see a world outside of New York City.” This excursion sharpens data collection techniques in a more natural setting than most students experience in their everyday life traveling to and from our CCNY campus. Despite New York City being one of the greatest cities, there is an obvious lack of connection to nature amidst the abundance of tall buildings. Dr. Levitt says, “Nature and diversity is not just in the arctic or the African dessert… You can observe different environments in close proximity.”



We are very grateful to Scott Williamson from the Marshlands Conservancy who meets and educates each class upon their arrival. Thank you to the Marshland Conservancy for accommodating this memorable and valuable trip. Students leave the marsh with a better understanding of how to collect data, and hopefully too with the inspiration to foster a relationship with the natural world around them. They need just a short trip north on their 207 field trip to remind them of this natural world connection.

Biology RECOGNIZES

BioBus



Fifteen tables crowded with eager students were present during the Fall 2017 Division of Science Opportunity Fair. Standing in the far corner, in front of an elaborate booth was Latasha Wright, Scientist and staff member at BioBus, a New York City based organization aimed to helping minority students "discover, explore and pursue science." Almost ten years in, the science lab on wheels has parked in over 500 schools and educated over 200,000 students. An extension of the organization, appropriately named BioBase, located at Columbia's Zuckerman Institute, is a community lab where younger students work on "project-based courses," alongside scientists.

BioBus is an opportunity for local children to have access to science. It also serves as an opportunity for our very own City College students to use their skills to conduct research while helping develop a "by students, for students" teaching curriculum. Wright says that having students' input in the curriculum is crucial in making the material relevant to younger students. It's important for the organization to have material that is "student voiced and tested."

What started as a partnership in which only six interns would be offered positions at BioBase expanded into a much more intrinsic part of the organization. "We were looking for students who were not only interested in research, but also interested in teaching. After meeting such passionate and talented students, we took on fifteen interns, instead of our initial six," says Wright, who added that about a third of those interns are from City College.

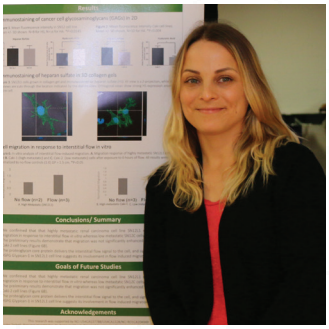
Samiyah and Francesca, two current CCNY students who are BioBase interns, are part of that fraction. Both Samiyah and Francesca relay their positive experiences and learnings from working with BioBase. While reflecting on a study that had unexpectedly fallen through, Samiyah says "I learned a lot about patience and failure. Scientific research is not easy, and you have to be very resilient in order to be a good scientist." While reflecting on the other component of their internship, teaching younger students, both BioBus alumni echoed statements wishing that they had had a program like BioBus to ignite their own scientific interests when they were younger. "While most kids are scared of science," states Francesca, "the kids who come to BioBase are excited to learn, whether it be about the components of a microscope or learning about the brain."

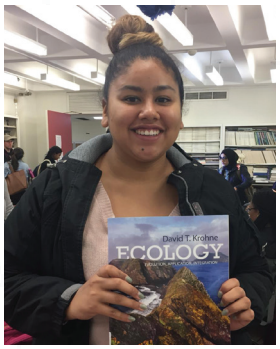
Another success of the BioBus organization is its inclusion and representation of women scientists. While its main goal is to ignite scientific interest, BioBus is simultaneously painting a more inclusive picture of science for the next generation. Science isn't exclusive to the stereotype of an individual male scientist alone in a lab wearing goggles. The observation of having strong female involvement is a testament to BioBus' commitment to inclusion, and one the interns advised they notice and appreciate.

The CCNY interns got more than they hoped for at BioBus, gaining teaching experience while learning and developing new passions and interests themselves. Wright adds, "We are building a big scientific community, so their experience is not just that one semester. We're using our extensive network to help all of our students succeed." If one thing is for sure, it's that BioBus is an opportunity for City College students to do research and learn, all the while joining a close-knit family.

Submit Your Photos

Send in photos you've taken documenting your experiences at CCNY and maybe you'll see them in the next issue of the newsletter! Email all photos to be considered to biology@ccny.cuny.edu.





Recent graduates venture out of CCNY!

Congratulations to John and Barbara Spanos on the expected arrival of their baby girl!