



LETTER FROM THE DEAN

Dear Students, Alumni, Colleagues, and Friends,

As we recognize the 40th anniversary of the Graduate School, we find ourselves reflecting on the many ways that our students and alumni have impacted the world around them and continue to do so today. Over the years, we've witnessed scores of new alumni embark upon careers that make us proud to call them graduates of the Graduate School at Rutgers University-Newark.

As Rutgers University-Newark continues with the implementation of its strategic plan, *Where Opportunity Meets Excellence*, we are happy to share how our students and faculty are making a tremendous difference in Newark, New Jersey, the nation and the world.

Over the past year, the Graduate School has launched several initiatives, and I am pleased to report that our students have engaged with these new opportunities in a variety of exciting ways. As a result of our Homeland Security Fellowship, launched a year and a half ago, our graduate students are now involved in projects with the FBI, the New Jersey State Police, and the Department of Homeland Security. Internationally, as a result of a recent award from USAID and a partnership with the Rutgers Center for Global Advancement and International Affairs (GAIA), six of our graduate students will be participating in a two-month long summer internship in South Africa.

In May, we celebrated our graduates at the Rutgers University-Newark graduation ceremony. We also hosted our inaugural hooding ceremony for doctoral degree recipients and our masters in fine arts degree recipients. As always, graduation provided an opportunity to recognize and publicly demonstrate our pride in our students as well as our appreciation of the families and friends who have supported them during the graduate school stage of their academic journeys.

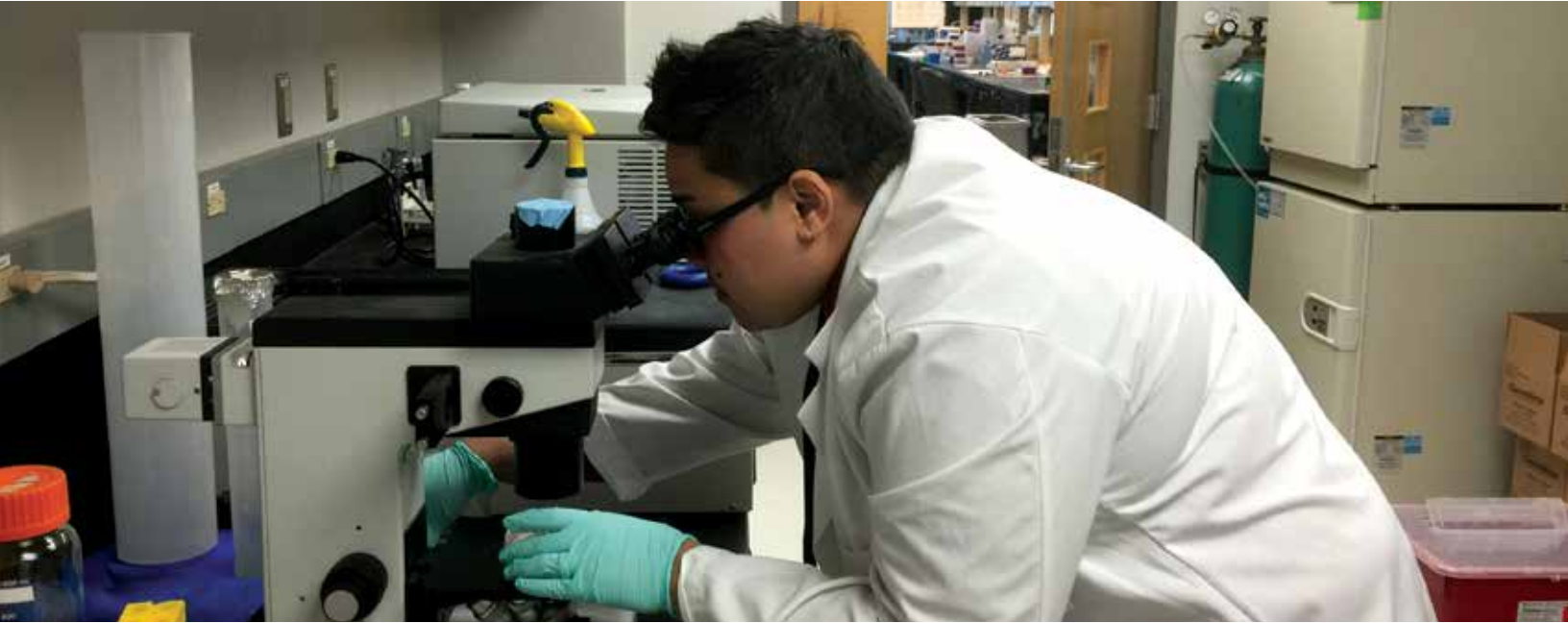
We look forward to the next several months of engaging our students, alumni, faculty, staff, and members of the community while continuing to build the Graduate School into a place where we can assist our students in achieving their goals of excellence and impacting our society at large.

To your continued success,



Kyle Farmbry, JD., Ph.D.
Dean

Dr. Natasha Gutierrez begins a typical morning at the Yale lab by checking on her *C.elegans* worm strains.



Dr. Natasha Gutierrez in the lab.

If she's using the diSPIM, a highly-complex research microscope that enables cell-friendly, high-speed 4D imaging, she'll need to prep her samples. This is all before 9 a.m., when her day really begins. Soon, in addition to her research and lab work, she'll likely be attending meetings, possibly presenting at a seminar, and during her downtime polishing up a blog post, or writing a lesson plan for a charter middle-school in the Bronx, where she serves as a Science Curriculum Consultant.

Gutierrez, who in 2014 earned her PhD from Rutgers University-Newark in Biology with a focus on Cell and Molecular Biology, now works as a Postdoctoral Associate at Yale's Colón-Ramos laboratory. She is one of those people who seems to do more in a single day than twenty-four hours ought to logically account for.

What's her secret?

Her former mentor, Rutgers Biology Professor, Dr. Alex Rodriguez, may have picked up on a clue years earlier, during Gutierrez's interview for admittance into Rutgers University-Newark.

"I can teach you math and teach you how to be a better writer," Gutierrez recalls Dr. Rodriguez saying to her, "but I cannot teach motivation, and you have motivation."

With the help of her strong motivation, Gutierrez earned admission at Rutgers University-Newark where she studied the role of the cytoskeletal protein β -actin in the formation of adherens junctions. (For those of us without a PhD in biology, she is kind enough to explain her research in simpler terms: "I studied a protein that is necessary for cells to stick together, such as your skin or the tissues in your body.") Her current research at Yale looks at actin's neurological role during the embryonic development of the *C.elegans*, a species of transparent worm-like organisms less than a millimeter thick.

Born on a Louisiana Army base to military parents, Gutierrez moved with her family to New York at the age of one. She grew up in the Bronx and attended Cardinal Spellman High School (a school that counts Supreme Court Justice Sonia Sotomayor among its alumni, Gutierrez notes with pride). Throughout

her early, formative years, that same motivation that Rodriguez would one day notice in Gutierrez was already evident.

She recalls a specific genetics lesson taught by her seventh-grade science teacher, Miss Tallon, after which, Gutierrez says, “I remember it being the class that I looked forward to everyday.” By the time high school rolled around, Gutierrez was taking every science course available, and then some; during the summer of her junior year, she attended Brown’s “Pre-College Program” where she enrolled in a course on Infectious Diseases and learned various laboratory techniques. Her hard work paid off: she graduated Cardinal Spellman with an Advanced New York State Regents Diploma, and from there went on to receive her B.A. in Biological Sciences from Mount Holyoke College, where she conducted independent research and attended the Summer Program for Undergraduate Research at the University of Massachusetts-Amherst.

Gutierrez considers her role in founding Research Day as “one of the best things” she did while at Rutgers.

Gutierrez continued working “overtime” during her years as a doctoral student at Rutgers University-Newark. Not only did she complete the research and coursework required for her degree, she also taught and, with two other graduate students, organized the Biology Department’s first-ever Research Day. The event invited graduate students to present on their research efforts and network with colleagues, and it continues to this day. Gutierrez considers her role in founding Research Day as “one of the best things” she did while at Rutgers, though some of her very fondest memories, she says, are those of “teaching and mentoring whether it was TA-ing or having undergraduates or high school students working with me.”



Dr. Natasha Gutierrez

Gutierrez is quick to give credit to what she calls her “support system,” namely her grandmother and her Aunt Gladys and Uncle John, who encouraged through her early years and college. During graduate school, her support system grew to include the Rutgers University-Newark Biology Department, Rodriguez, and the federal “Minorities in Biomedical Research Support” program, among others. The Biology Department, she says, “was very supportive in anything that I wanted to pursue during my time there. If I wanted to go to Stanford University for a month to learn a technique from an expert in the field, they allowed me to do it. If I wanted to go to Woods Hole for the summer to take a physiology course, they allowed me to do it.”

She credits much of her success at Rutgers University-Newark to her mentor, Rodriguez, who served as this year’s keynote speaker for the doctoral and MFA hooding ceremony. “He always believed in me,” Gutierrez says. “From the moment I came in to interview at Rutgers he has always been my advocate. He never gave up on me, even when I thought I wasn’t cut out for being a scientist.” Gutierrez recalls one moment in particular during her thesis defense, at which Rodriguez was present. “I looked over at him briefly during my presentation and felt proud to be his student, especially his first student to receive a PhD.”

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These days Gutierrez may work with high-powered microscopes and nearly-invisible worm strains, but her involvement in the larger world remains wide and all-encompassing. In addition to her role as a researcher, Gutierrez is an educator and a social justice advocate, active in the Black Lives Matter protests and other causes. “Giving back to my community is important

“I want to inspire more students who come from disadvantaged environments to be scientists.”

to me,” she says. “I have a privilege of having a higher degree education and the power to inspire the future generation of scientists.”

She blogs about social disparities and inequalities in communities of color, especially in regards to science and science education. A former volunteer biology teacher with Bank Street’s Liberty LEADS Program, she notes that “communities of color need to have access to science and options to pursue science as a career.” During each day of Black History Month, and then Women’s History Month, she highlighted a different

black or female scientist, and these write-ups were shared and featured on blogs.

“My role models in science when I was younger were white males such as Niels Bohr, Albert Einstein, and Bill Nye,” she says. “I want to inspire more students who come from disadvantaged environments to be scientists. I want them to have role-models who look like them. In order to achieve this I want to work in the field of science education. There is a serious lack of people of color, especially women of color, in the sciences and I want to tackle this issue in my career.”

Looking ahead, Gutierrez’s future will likely include an even greater shift from the role of mentee to mentor as she works to empower young female scientists and scientist of color. Thankfully, she says, she has experienced first-hand the importance of good mentors in Dr. Rodriguez and others at Rutgers. “I use the model my mentors used to mentor me to now mentor my students,” she says. “And I hope to become as great a mentor as they were to me.”

If her track record thus far into her early career is any indication, countless young scientists will one day be thanking Dr. Natasha Gutierrez for her unflagging encouragement and tireless support. ■

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MFA in Creative Writing Mentorship Program



Creative writing mentees

The Rutgers University-Newark MFA Program in Creative Writing will soon be celebrating a successful first year of its High School Mentorship Program. The Mentorship Program, launched in September of 2014 by MFA Program Director Jayne Anne Phillips, works in conjunction with three Newark-area high schools: St. Benedict's Prep, North Star Academy, and Saint Vincent Academy.

MFA graduate students Colin Herrera, Anisa Rahim, and Olga Botea, all from the class of 2016, represent the first-ever crop of mentors. Each is assigned a separate high school which they visit on a weekly basis to facilitate discussion and lead creative writing exercises.

Rahim works with 15 young women at Saint Vincent Academy. Together, over the course of this year, they have covered topics from South African apartheid to the complex life of a celebrated African American boxer. Rahim says the women she mentors are “bright and insightful, challenging themselves to interpret complex passages of poetry and delve into mature themes.”

Herrera mentors a group of students at St. Benedict's Prep. According to him, it's been “a sincere pleasure seeing first-year high school students responding to contemporary fiction and poetry with the sophistication and maturity you would expect of college students.”

The Mentorship Program represents a new milestone in the MFA Program's already robust community outreach efforts by working in tandem with its other initiatives, most notably its acclaimed “Writers at Newark Reading Series.” The Reading Series, free and open to the public, brings two prominent authors to share and discuss their work each month, and Newark high school students have long participated, regularly attending the readings. Now, however, with the facilitation of their MFA mentors, these same students are reading, discussing, and responding to the works of the Reading Series authors.

Botea, who mentors students at North Star Academy, has witnessed this synergy pay fantastic dividends. “The most gratifying part of being involved in the outreach program is exposing students to living authors and hearing their responses to their work,” Botea says. “It is one thing to read moving work, and another to attend the Writers at Newark Reading Series and hear it spoken and alive.”

Another component of the MFA Program's community outreach effort is its annual High School Contest, which accepts entries in fiction, nonfiction, and poetry from area high school students. The contest is judged by MFA students and faculty, and an award ceremony and reception is held each May for all participating high school students and their families. This year's contest will be the first in which many students submitting their creative work will have been closely studying the craft of writing with their MFA Mentors since September. ■

USAID Global Development Lab — GS-N Students in Cape Town, South Africa



Staff of The Community Chest of the Western Cape meeting with GS-N students

With the support of a grant from USAID’s “Global Development Lab” and in partnership with the Rutgers Center for Global Advancement and International Affairs, the Rutgers-Newark Graduate School will send nine graduate students to South Africa this summer and fall to embark on a variety of research, service, and outreach efforts. The nine students, selected from a pool of applicants, represent more than a half-dozen PhD and master’s programs from within the Graduate School.

Beginning this June, six students will travel together to Cape Town. For two months the group will live together and work in collaboration with Community Chest, a regional community and social development organization. Although the six students will be working under the umbrella of the same organization, their research goals are distinct.

Breanna Datesman, a first-year student of Public Administration with a concentration in Healthcare Administration, plans to examine existing sex education programs in a number of Cape Town high schools with the hope of analyzing their strengths and limitations. Additionally, Datesman says, she hopes to “gain an understanding of South African culture to assist in addressing the education and healthcare issues that face modern South African youth.”

Michelle Bischoff, a second-year student completing a Master of Arts in Political Science, will be spending her summer looking into the intersection of women’s political participation, gender relations and inequality in South Africa, using Cape Town as a case study. “I hypothesize that women are more likely to register to vote but less likely to actually vote,” Bischoff says, “and I seek to discover why.” She will conduct interviews and surveys to identify what factors contribute to women’s political participation, with the hope of creating a set of recommendations to foster greater gender equality.

Last summer, Mariam Rashid, who studies Health Systems and Policy while earning her Masters in Public Health, visited Langa, one of the oldest townships in South Africa. While there she witnessed the lack of access to basic sanitation infrastructure, and, as she puts it, “the public health side of me came out.” This summer Rashid will return to South Africa with sanitation infrastructure as the focus of her research. By highlighting and mapping the sanitation networks in the townships around Cape Town, she hopes to support a sustainable, efficient system that can be cleaner and more efficient.

Sarah Ford, a first-year student in the History of Science, Technology, Environment and Medicine Program, plans to analyze the correlation between socioeconomics and sexual assault, while also developing an outreach program to assist victims of sexual assault in more easily locating legal, medical, and educational resources currently available to them in Cape Town. Ford hopes that programs like hers “will contribute to a collective shift in gender perception that’ll one day create a world where every female is safe.”

Rounding out the group of six who will be working with Community Chest this summer are graduate students Dan DeNose and Rebecca Freier.

In addition to the group of six, three Rutgers University-Newark graduate students will be working on individual research initiatives through affiliations with the University of Cape Town. Simone Martin, a Doctoral Candidate in the School of Criminal Justice, earned herself three months this fall to examine issues of interpersonal violence in Cape Town. Muge Haseki, a Doctoral Candidate in the School of Communication & Information, will be working on the impact of information and communication technologies on social and economic community development. She will be collaborating with scholars from the University of Cape Town, Berkeley, and UC-Davis. Lastly, Master’s student Ross Karia won a four-month grant to look into computer forensics.

At the latest in a series of pre-departure orientation meetings, faculty advisors encouraged students to remain flexible, reminding them that research goals often shift in response to changing conditions on the ground. Whatever the outcome, spirits look to remain high. Sarah Ford, looking ahead to her summer in Cape Town, had this to say: “Even if this program impacts just one’s person life in a positive way.” ■



Lorenzo Davids, CEO, The Community Chest of the Western Cape and Rutgers University-Newark students



The Development Lab in action

Homeland Security Fellowship Program

Fifteen students from the Graduate School at Rutgers-Newark traveled to Washington D.C. last November as the latest initiative of the Graduate School's Homeland Security Fellowship program. Over the course of the fall weekend, students sat down with homeland security specialists from governmental organizations, law enforcement and emergency preparedness agencies, Congress, and the private sector.

One fellow, Alisa Matlin, a first-year doctoral student in the School of Criminal Justice, was pleased to find that the weekend addressed a wide range of issues. "The topics that were covered during discussion sessions went beyond what is usually assumed to be the purview of homeland security," she said. "We didn't only discuss terrorist threats and means of defense; we talked about climate change threats, transportation and infrastructure issues, international aspects pertaining to national security and in addition we explored legal, fiscal, and methodological concepts surrounding homeland security."

"The topics that were covered during discussion sessions went beyond what is usually assumed to be the purview of homeland security,"

The 15 fellows, selected from a larger pool of applicants, represented a variety of disciplines within the Graduate School at Rutgers-Newark, including Global Affairs, Criminal Justice, Public Management, Political Science, History, and Creative Writing.

In preparation for their visit to the Capitol, the fellows participated in a number of workshop and training sessions led by Farmbry and the Homeland Security



GS-N Students in the Homeland Security Fellowship Program in Washington, DC, April, 2014

Fellowship's three faculty advisors: John Cohen, professor of Criminal Justice and senior advisor at the Rutgers Institute for Emergency Preparedness and Homeland Security; Tom O'Reilly, director of the Police Institute within the School of Criminal Justice; and Phil Palin, former senior advisor to the Department of Homeland Security Office of Strategy, Policy, Assessment, and Risk.

The Homeland Security Fellowship grants students a stipend for their time and a research paper on a topic of homeland security. Scott Fisher, a third-year doctoral student in the Division of Global Affairs and a volunteer firefighter, examined the militarization of police forces. "While much of the media attention has focused on the appropriateness of police using equipment designed for the military," Fisher said, "little attention has been paid to the issue of cost." Through his research, Fisher discovered that the annual operating costs for much equipment given to police departments by the Federal government often reaches astronomical sums. "Any community that doesn't accurately forecast these costs can quickly find itself with a drain on resources that out-weighs the benefits," Fisher stated. "While some communities have benefited, others have found the 'free' equipment so unexpectedly expensive that they decided to return it. This was not a finding I expected at the outset of my research."

Gender Summit 5 — Africa 2015

Dr. Kyle Farmbry, dean of the Graduate School, traveled to South Africa this April to participate in the “Gender Summit 5 Africa 2015.”

Joining Rutgers University-Newark Chancellor Nancy Cantor and Dr. Sherri-Ann Butterfield, senior advisor to the chancellor and Faculty of Arts & Sciences-Newark senior associate dean, Farmbry explored gender inequities in the sciences. The Summit took place over three days in the city of Cape Town and focused on poverty alleviation and economic empowerment through scientific research and innovation.

Farmbry served as chair of a session on “funders affecting change in research strategies and priorities,” which focused on the capacity of public and private funding organizations in the fields of science, technology, engineering, and mathematics, to become agents of change in advancing gender-responsive research programs and development initiatives.



Leiden University Vice Rector Simone Buitendijk and GS-N Dean Kyle Farmbry

Working with Farmbry on this topic was an economist with the International Monetary Fund, the CEO of a South African research foundation, a program specialist working for the African Network of Scientific and Technological Institutions, and others. Their panel and subsequent discussion explored how funding strategies and practices can promote and reward inclusion of analysis of gender dimension in research content and gender training in research projects. ■

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Homeland Security Fellowship Program, continued

The Homeland Security Fellowship was spearheaded in 2014 by Farmbry to provide Rutgers University-Newark master's, PhD, and law students with an introduction to the field of homeland security. Now, building off the achievements and feedback from its first two cohorts, the Fellowship will soon be accepting applications for the 2015-2016 academic year. Looking ahead to the future of the program, faculty advisor Phil Palin has this to say: “Homeland security is a whole collection of treacherous problems.

Balancing security and liberty, prosperity and risk-readiness, private values and the public good. These are not simple issues. Homeland security benefits from a diversity of informed perspectives. But too often that's not what it gets. That's why what Rutgers is doing is so important. Bringing together graduate students from American Studies, Global Studies, Law, Public Administration, Fine Arts, and much more. Wow. This is intellectual capital that will pay creative dividends.” ■



Student poster presentations

Chancellor's Research Day

The Third Annual Rutgers University-Newark Research Day took place on April 17th in the Paul Robeson Campus Center and featured presentations by 16 graduate students from eight different disciplines in the natural sciences, social sciences, humanities and creative arts.

Morning presentations focused on the natural sciences, and among those early-risers sharing their research with faculty, colleagues, administrators and guests was Sue Peters, a PhD candidate in the Behavioral and Neural Sciences Program. Peters works in the Infancy Studies Lab where she is piloting a novel sleep study using state-of-the-art “Dense EEG” technology. Her research uses a swimming-cap-like plastic hood studded with 124 nodes to comprehensively map infant brain activity during sleep. Peters mentioned that she is particularly interested in investigating the sleep patterns of infants aged 3.5 - 9.5 months, as this area is not one in which a great deal of research currently exists.

Manpreet Kohli, a PhD candidate in biology, reported on her research into the evolutionary history of insects, with a particular emphasis on two species of dragonflies. Kohli shared experiences and results from

her past fieldwork, which took her to Crete to study the dragonfly *boyeria cretensis*. She also detailed her impending summer research, which will send her to the Arctic to research *somatochlara salberg* and the effects of climate change on this northern-dwelling species.

Gordon Osterman, a PhD candidate in earth and environment studies, is working to develop new methods of mapping and measuring underground aquifers in hopes of aiding decontamination efforts. He began his presentation by wryly mentioning that there is no place more appropriate to be conducting his research than here in New Jersey, home to more Superfund sites than any other state. Osterman explained his “active measurement” approach, based in geophysics and combining magnetic imaging technology with other methods to analyze the permeability of large underground areas. After graduating from Rutgers, Osterman said, he looks forward to possibly entering the field of aquifer management in hopes of alleviating looming problems in places like California.

Presenters and audience members alike took a break for a catered lunch where keynote speaker Dr. Yaihara Fortis Santiago of the New York Academy of Science



Dr. Yaihara Fortis Santiago speaking at Chancellor's Research Day



Acia Robertson, Honors College, School of Nursing Senior and Dr. Kyle Warren, Associate Dean, College of Nursing

Her research uses a swimming-cap-like plastic hood studded with 124 nodes to comprehensively map infant brain activity during sleep.

spoke on the many resources and initiatives offered by the Academy, such as its efforts in enhancing the STEM pipeline among city youth, as well as its lead position in global initiatives like Scientists Without Borders.

The Research Day's afternoon lineup featured the humanities, social sciences, and creative arts. Erica Tom was among the handful of American Studies PhD students presenting. She read from an essay exploring the intersection of pain, language, literature and contemporary cowboy culture. Her essay was based in part on her personal (and painful) experiences training horses. But, as she explained, her horse-related injuries are far from uncommon. In the world of horse training, Tom said, "It's not if you get hurt, but when, and how bad."

Chih-Sheng Chen, a graduate student in the Division of Global Affairs, shared his research on Chinese birth tourism, the booming industry in which wealthy Chinese women pay between \$40,000 and \$100,000 for an all-inclusive package that helps them obtain a tourist visa to the United States in order to give birth. Not only does the practice grant the newborns American citizenship, Chen explained, but it also serves as a loophole to China's strict one-child policy.

The creative arts were represented by second-year poets Andres Cerpa and Safia Jama of the MFA Program, both of whom read from their poetry, and Kanika Punwani, a second-year fiction student who read from a selection of vignettes in which the central characters struggle to reconcile their lives amid the contradictions between East and West, the clash of tradition and modernity.

In addition to the graduate student presenters, eleven faculty member shared their latest research endeavors, and nearly seventy undergraduate students participated by displaying their research in a poster exhibition. ■

Doctoral Programs & MFA in Creative Writing Hooding Ceremony — Keynote Speaker

Alexis Juan Rodriguez, an assistant professor in the Department of Biological Sciences, joined Rutgers University-Newark in 2008. In the seven years since, he has overseen vibrant research, teaching, and outreach programs while simultaneously working to increase diversity in biomedical research.

His research in the area of mRNA translation regulation and its role in cell fate specification has appeared in publications such as the *Journal of Cell Biology*, *Cancer Research*, *RNA*, *Trends in Cell Biology*, as well as numerous seminars in cell and developmental biology. Additionally, his work in the area of colon cancer has been presented at the NIH National Cancer Institute, the American Association for Cancer Research, the RNA Society, Bronx Scifest, and the University of Pennsylvania's Mari Lowe Cancer Center Seminar Series.

Professor Rodriguez has mentored 39 student research projects, including 17 by underrepresented minority students. Students mentored by Professor Rodriguez have gone on to positions at Yale School of

Medicine, University of Pennsylvania, Cornell Weill Medical School, Dartmouth, and New Jersey Medical School. Notably, Professor Rodriguez's publication, "Visualization of mRNA translation in living cells," was cited in Roger Tsien's 2008 Nobel Prize lecture.



Dr. Alexis Juan Rodriguez

Professor Rodriguez was born in Arecibo, Puerto Rico. He is a long time resident of New Jersey, graduating from Dumont High School in 1990. He received his B.A. in Biological Sciences from Yale University in 1994, and received his Ph.D. in Biological Sciences from Rutgers University-Newark in 2002, where he also completed the NSF-funded Program in Cellular and Molecular Biodynamics. Professor Rodriguez received post-doctoral training with Robert Singer and John Condeelis at the Albert Einstein College of Medicine until 2008. ■

