



## College News

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### Graduate student's Fulbright project tackles potential epidemics in Trinidad and Tobago

From the stray-strewn streets of Trinidad and Tobago to cow-covered pastures of rural New York dairy farms, Miguella Paula-Ann Mark-Carew has journeyed far in her quest to understand and combat disease epidemics across the world. Ever since she came to Cornell's College of Veterinary Medicine through a veterinary summer program when she was 17, Mark-Carew wanted to return as a full-time student. While attending Dartmouth College, she spent two respective summers conducting epidemiological research with Drs. Paul Bowser and Ted Clarke, and her positive experiences with Cornell faculty further sealed her aspiration. In 2007 she came to Cornell's College of Veterinary Medicine as a doctoral student in the field of comparative biomedical sciences.

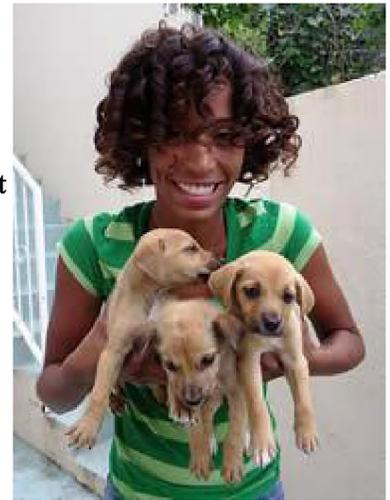


An aspiring epidemiologist, Mark-Carew studies *Giardia* parasite infections at the group and population levels to help understand and control potential epidemics. *Giardia* protozoa infect the small intestine of humans and other animals, causing stomach pain, diarrhea, bloating, fever, nausea, and vomiting for two to four weeks. It commonly spreads via water contaminated by raw sewage or animal wastes. It can also spread between individuals, quickly putting populations at risk. Mark-Carew's *Giardia* studies took her from the New York Watershed to the islands of Trinidad and Tobago to study the parasite's prevalence and genetic makeup in dairy cattle and other mammals.

After receiving a Fulbright grant funding an independent epidemiological project, Mark-Carew returned to the Caribbean state of Trinidad and Tobago to take on a growing health concern facing her family's homeland. Her Fulbright project involves efforts to quantify, manage, and control the population of thousands of stray and free-roaming dogs in streets across the country. These dogs can carry *Giardia* and other diseases humans can catch, posing a serious potential public health risk, according to Mark-Carew. Beyond its medical and epidemiological significance, the project involves sociological surveys with political potential. Mark-Carew interviews residents and tourists about their perspectives on several concerns, including stray dog issues, testing to identify parasites, and the value of continuing her efforts to count the number of strays, all with the hope of inspiring policy changes to address the stray problem.



“I adopted three puppies when they were a month old from an active dog abandonment site,” Mark-Carew mentioned. “One is with me now in Ithaca, and the other two are scheduled to fly home with me after my visit this coming January. I literally brought my work home with me!”



### Other Projects

Mark-Carew has also been involved with a project called “Caring Collars Loving Leashes” that was started by her mother, Marlene Mark, to promote the

human-animal bond.

“We encourage owners to walk their dogs and obtain ID tags for free collars we give out so they can find their dogs if they get lost,” said Mark-Carew. “Over 150 collar and leash sets were split between the two branches of the Trinidad and Tobago Society for the Prevention of Cruelty to Animals (TTSPCA). We’d like for it to be an annual campaign during May, National Pet Month in the US.”

Inspired by a talk Mark-Carew gave at Cornell about her project, five Cornell students have visited Trinidad and Tobago to lend a hand. Sophie Tilitz, a rising freshman undergraduate interested in animal science, helped for six weeks from February to April 2011. In January 2011, second-year veterinary student Jasmine Bruno and third-year students Sarrah Kaye, Erin Lashnits, and Sarah Dumas spent two weeks on the islands with Mark-Carew collecting parasite samples from dogs, cattle, and water buffalo, processing samples in the lab, counting roaming dogs in the streets, and volunteering in an intensive marathon spaying and neutering event.

[\(Read more about their adventures.\)](#)

### Future Plans

Mark-Carew hopes her career will allow her to assist the World Health Organization or similar entities to navigate an increasingly globalized world through which pathogens can spread quicker than ever before. She aims to understand how diseases differ across the world and species and hopes to work on projects concerning public health and animal health, particularly dealing with waterborne diseases in developing countries.

“I plan to return to Trinidad and Tobago during January 2012 break and Summer 2012,” said Mark-Carew. “This project means a lot to me and I plan to devote several years to seeing that something is done to control roaming dogs and promote responsible dog ownership in Trinidad and Tobago. I am looking for additional Cornell students to help with the roaming dog assessment project, and can be reached at [mpm26@cornell.edu](mailto:mpm26@cornell.edu).”

For more on Mark-Carew’s Fulbright project, visit her blog: <http://halfbrightfulbright.blogspot.com/>