The WSU Rabies Vaccination Program team vaccinates an average of 500 dogs each day in east Africa. Each year, 59,000 people die from rabies worldwide; about half are children.

Notes from the Field

“Notes from the Field,” a new column in The Global Health Perspective, features personal accounts by Allen School scientists and gives a first-hand glimpse of the work they are doing to help the lives of people and their animals.

Freedom from the Cold Chain by Allowing Villagers to Help Themselves

by Dr. Felix Lankester, clinical assistant professor in the Allen School and director of the Serengeti Health Initiative

The sun is not long up. Sitting on the step of my guesthouse, I can already see children walking down the dusty street with their dogs. Most of the dogs are trotting along freely by their owners’ sides, whilst a few are leashed with a piece of twine. One girl strolls past carrying a litter of puppies nestled into a bucket on her head. All are making their way to the center of the village where, in an hour’s time, the Serengeti Health Initiative team will begin vaccinating dogs against canine rabies. But this day will be different. Unlike the normal vaccination campaign the team has carried out around the Serengeti National Park since 2003, this will be a lot more work. Today the team are carrying out a WSU-funded vaccine trial* that will determine whether our hypothesis—that the rabies vaccine is still effective even when it is not stored at cold temperatures—is true.

Continues
The significance of confirming the hypothesis cannot be overstated. For most rural areas in Tanzania, and many other parts of Africa where electricity is yet to arrive, it will mean that batches of vaccines can be delivered to villages and safely stored at ambient temperatures. As a result, rather than waiting for a campaign to come through their village, communities will be able to manage and administer vaccines to their dogs themselves. Because puppies are born frequently, being able to routinely vaccinate any new litter will greatly increase vaccination rates and, as a result, herd immunity. Unlike in America where the reservoir host for rabies is wildlife species such as raccoons and skunks, in Africa and Asia, where 99% of human rabies cases occur, the reservoir host is the domestic dog. So when dogs are vaccinated, it protects people and other animals including domestic and wildlife species that are not vaccinated.

To test the hypothesis that the rabies vaccines are effective even when stored outside of the “cold chain,” dogs will be immunized with vaccines randomly selected from one of seven batches, with each batch having been stored, for up to six months, at a different temperature. Batch number seven, for example, has had vaccines stored at 37°C (98.6°F) for six months! After receiving a vaccine, each dog will be microchipped and will have a blood sample collected. One month later the team will return to the same village and will identify all the dogs that have taken part in the trial so that a follow up blood sample can be collected and a cold chain vaccine can be given. In this way the team can be sure that, following the trial, every dog is protected. All the blood samples will be analyzed for rabies antibodies. This will allow us to determine whether the hypothesis is correct: that vaccines stored outside of the cold chain are effective at eliciting a protective immune response.

The first round of immunizations is complete. We now must wait one month before returning to collect samples that will be sent for testing. The results of the test will be known sometime this summer. The battle against this most terrifying disease will continue, yet these children and their dogs may play a crucial role that will determine whether this ancient disease can finally be defeated.

*The trial is conducted in association with MSD Animal Health (Merck Animal Health) using the Nobivac® rabies vaccine. Learn more about the WSU Rabies Vaccination Program at go.vetmed.wsu.edu/Rabies.*

**Faculty News**

**Jennifer Zambriski,** clinical assistant professor, has been awarded $291,000 from the Bill & Melinda Gates Foundation to study Cryptosporidium, a parasite that is the second leading cause of diarrhea in infants worldwide. Children under two years of age who contract this parasite are at an increased risk of malnutrition and stunting, which can irrevocably affect cognitive development. There is currently no vaccine to prevent infection, but two medications hold promise as effective treatments. Because calves are also susceptible to the same infection, Dr. Zambriski and her team will treat animals with the drugs to learn more about their effectiveness. Their results could help children in resource-poor areas, while also helping agriculture in the United States and abroad. Her work will be the foundation for a large-scale clinical trial in children in Africa.

**Shira Broschat,** adjunct professor in the Allen School, received a Women of Color Empowered Award for Women in Male-Dominated Careers from the Northwest Asian Weekly Foundation. Dr. Broschat and 13 other women were in Seattle to receive the award in February 2015. The Northwest Asian Weekly Foundation started Women of Color Empowered to enhance the quality of life for women of all races and backgrounds, empower women in the workforce, and help women give back to their communities.
Student and Fellow News

Congratulations to the Allen School’s 2015 Wiley Research Expo Winners! Four Allen School graduate students, pictured with their mentors, were recognized in three different research categories.

Svetlana Lockwood (left) with Dr. Shira Broschat
Administrative and Information Sciences (oral presentation)

Sylvia Omulo (right) with Dr. Douglas Call
International Research (poster presentation)

Jackie Stone (left) with Dr. Hector Aguilar-Carreño
Medical and Life Sciences (poster presentation)

George Wudiri (left) with Dr. Anthony Nicola
Medical and Life Sciences (oral presentation)
More News

Cattle killer: two parasites are better than one
go.wsu.edu/CattleKiller

Tiny parasite, big disease: 22 years since fatal outbreak
go.wsu.edu/TinyParasite

Fear the measles virus—not the vaccine, says WSU researcher
go.wsu.edu/MeaslesVirus

For past newsletter and more news about the Allen School, visit go.wsu.edu/AllenNews.