

RESEARCH AND POSTGRADUATE



NEWS & EVENTS

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HAPPY 2021!

The New Year will bring about some exciting activities for the Research & Postgraduate office. Watch out for celebratory presentations from our PhD Candidates in the form of public defenses, as well as a new dynamic series of Journal Club presentations. There are opportunities for our DVM students to engage in research and the chance to be selected as the RUSVM Morris Animal Foundation Veterinary Scholar of 2021. ■



WELCOME NEW POSTGRADUATE STUDENTS

Welcome to **Ashley Gauze**, **Jennifer Schoonmaker** and **Reginald Thomas** who are joining the One Health online program. Also to our newest Research degree students; **Mayra Trujillo** (DVM/MSc) investigating Q Fever in ewes from Saint Kitts, supervised by Drs. Ananda Muller and Aspinas Chapwanya, and **Audrey Bolanos** (DVM/MSc) investigating the Assessment of Toxins from Blubber Samples of Various Species of Cetaceans, supervised by Drs. Don Bergfelt and Sarah Hooper. ■

PUBLICATIONS



We're thrilled to announce that 2020 brought an all-time high for RUSVM publications! Our faculty, staff and students authored **127** papers last year, 54 of which were published in the Fall semester. View our [Publications page](#) for a complete list. ■

GRANTS & SCHOLARSHIPS

The Morris Animal Foundation Veterinary student scholarship program is now accepting applications with a deadline of February 10, 2021. The program awards stipends to veterinary students who are selected by their institutions to participate in clinical or basic animal health research.

Our internal deadline to receive applications to be selected for submission by RUSVM is January 15, 2021. Institutions can only submit one application. More information about the program and guidelines can be found on the [Morris Animal Foundation website](#). ■

GRADUATING STUDENTS

We launch into 2021 with several of our PhD Candidates completing their defense (viva) and anticipating the final corrected theses of several of our Master's by Research students. Our One Health Candidates have also been busy presenting their capstone research projects to external examiners as they complete their 2-year online program. For those of you writing up, be sure to review the thesis rubric and formatting requirements found within the postgraduate Canvas pages. Remember, we are here to support you as you approach the finishing line! ■



SHARE WITH US

Have a story, research project, or photos you'd like to share? Let us know! Email us at: postgrad@rossvet.edu.kn





JOURNAL CLUB

Thank you to our Journal Club presenters from the Fall 2020 semester. We had a number of distinct and unique presentations with research focus areas and topics that included:

- Ultrasonographic and Anatomopathological Study of the Deep Digital Flexor/Tendon Apparatus in the Equine Foot
- Rabies Vaccination of 6-Week-Old puppies born to immunized mothers: A Randomized Controlled Trial in a High-Mortality Population of Owned, Free-Roaming Dogs
- Insights and research gaps in the systematics of amphistomes of ruminants in Eastern and Southern Africa
- Influence of β -1,3-1,6-GLUCANS on rabies vaccination titers in cats
- Leatherback sea turtle (*Dermodochelys coriacea*) hatch success and essential and nonessential metals in eggs and embryos from nests in St. Kitts (2015)
- *Bartonella* in wild carnivores, a review of the literature

Journal club is a platform available through Canvas (RUSVM Journal Club) to present and share our research proposals, recent peer review publications as well as ongoing research projects and collaborations with our the RUSVM faculty and student community. The sessions also provide our postgraduate students the opportunity to present their work with assistance from their faculty advisors. ■

UPCOMING JOURNAL CLUB DATES

- January 21
- February 4
- February 18
- March 4
- March 18
- April 1

Interested in signing up for a session? Please use our online [Journal Club calendar](#) to sign up for your desired session.

PAVING THE WAY FOR BAT CONSERVATION

Last fall, the world celebrated National Bat Week, which aims to raise awareness about the need for bat conservation. But just why are these creatures so important to not only the health of our ecosystems, but humans and animals as well? Dr. Sarah Hooper, Assistant Professor, helps us to answer these questions and more as she walks us through her research and the importance of bat conservation.

WHY DO BATS MATTER?

There are over 1,400 different species of bats throughout the globe. From consuming insects to pollinating plants, each species plays a vital role in promoting biodiversity and balancing its ecosystem in a variety of ways. While bats are important to environmental health, they have received a lot of attention in recent years due to their ability to host a variety of zoonotic viruses—that is, viruses that can spread from animals to humans. According to a 2006 study, researchers discovered that bats host more than 60 human-infecting viruses[1], including rabies, Ebola, and various strains of coronavirus.



Hiking the Mark Twain Cave Complex in Hannibal, Missouri to perform a hibernaculum count—an effort to estimate bat population trends in the winter.

Because of their widespread geographic diversity, bats are increasingly coming into contact with humans and domesticated animals, heightening the risk of zoonotic disease transmission. The expansion of urban areas and agriculture has also contributed to stressors on the immune systems of these animals, in turn making them more susceptible to infection. According to Dr. Hooper, “Bats who are stressed from anthropogenic activities—human activities that impact our environment such as pollution and habitat destruction—are at an

increased risk for becoming ill. These unhealthy bats are unable to provide the important ecosystem services and are more likely to transmit viral diseases to humans.”

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DR. HOOPER'S BAT CONSERVATION IN THE U.S.

Dr. Hooper has dedicated a large part of her career to research in wildlife conservation. She has studied multiple bat species in North America and has volunteered much of her time to educating communities about the importance of conservation, and in particular, the important role bats play within the intersection of human, animal, and environmental health.

Dr. Hooper's work has included assessing potential treatments for White-nose Syndrome, an invasive fungal disease in hibernating bats caused by *Pseudogymnoascus destructans*. She has also worked on projects funded by the U.S. Forest Service and the Missouri Department of Conservation which focused on understanding how forest management affects the health of endangered and threatened North American bat species, as part of an effort to reduce the severe population decrease in many of the species. According to Dr. Hooper, "If we understand how the different management techniques affect the fitness, or health, of bats, we can include specific forest management recommendations in the Species Recovery Plans which are designed to help save our endangered and threatened bat species from extinction."

Dr. Hooper's work has led her to master a wide range of research technologies, allowing her to devise more non-invasive methods for studying bats. Previously used methods for marking bats relied on physically marking them with bands, which sometimes resulted in injury or mortality in some subjects. "After capturing thousands of photographs of bat wings, we discovered that the collagen fibers present in the wings could serve as 'wing prints,' allowing biologists and researchers to identify bats biometrically and without any risk of injury or death to the bat," says Dr. Hooper. She continues to work on other methods of understanding threats to bat populations to aid in their conservation. "I am currently working on developing methods of using -omic technologies to determine what biomarkers we can use to better understand how anthropogenic stressors are responsible for severe population declines of bat species."

BAT RESEARCH IN ST. KITTS AND NEVIS

Dr. Hooper recently moved to St. Kitts and Nevis to join Ross Vet as an assistant professor. While on the island, she plans to establish her research lab, the "Caribbean and Beyond Hooper Bat and Ecohealth Lab," designed to study the various bat populations in the region. According to Dr. Hooper, endemic island bat species are some of the most understudied bat populations in the world. She hopes her research will contribute to understanding local bat species, their migratory patterns, and their role in the ecosystem health of the Caribbean region.



The Antillean Fruit-eating Bat is just one of several bat species found in St. Kitts.

"Bats are one of the only native mammals remaining on St. Kitts and Nevis today. It has been suggested that they are the primary pollinators within island ecosystems and help provide natural pest control against diseases that are spread via mosquitos and other insect vectors. With veterinary student volunteers, we will be working together to understand what bat species are present seasonally and year-round on St. Kitts and how they contribute to the EcoHealth of the islands," says Dr. Hooper.

By participating in Dr. Hooper's research project, veterinary students will be able to help contribute to gathering knowledge about the habitat use and threats to bats in the Caribbean to help develop species conservation plans. "Our published findings will provide the International Union of Conservation of Nature (IUCN) important data for their Data Deficient Caribbean bat species," says Dr. Hooper, "Currently, not enough information is known about the bat species, so they cannot assess if it is endangered or a very common species with little risk of extinction. Our research will be an important factor in filling in those gaps."

To follow Dr. Hooper's wildlife research, visit her [website](#) or follow her on Twitter at [@EcoPhysBatVet](#). ■

[1] Calisher, C., Childs, J., Field, H., Holmes, K., & Schountz, T. (2006, July). Bats: Important reservoir hosts of emerging viruses. Retrieved November 03, 2020, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1539106/>