



Director's Update

Dr. Deb Miller



Fall is in the air, and it is an awesome time to be outside enjoying the weather and watching the colors of nature erupt! I love this time of year because, although we are watching nature prepare for a long winter sleep, it reminds us of the repeating cycles of life. Of course, it also reminds us of the start of cold and flu season, as we plan our family excursion to get annual influenza vaccinations. Personally, I am hoping that the socially accepted practice of mask wearing will also help to keep the incidence of all infectious respiratory illnesses low.

Inside this issue of the UT One Health Initiative newsletter, we feature the One Health Scholar and seed awardee Dr. Matthew Gray and his seed grant project, Socio-Economic Epidemiology of Disease Risk in

Wildlife Trade Networks. The wildlife trade network is poised to have a major impact on both biodiversity and human health, and thus, it behooves us to work together to develop practices and find avenues that promote healthy trade.

We have many events planned for October and November. For example, there will be a Graduate Student Swap on October 22. No, we are not swapping graduate students! Rather, the graduate students are swapping information about their research with each other. This will be an informal meeting and we plan to follow it up with a formal event in the spring. On October 28, Dr. Elizabeth Strand will present a Team Science Workshop on "Liberating Structures for Consilience and APT Methodologies." If you want to learn more about facilitating consilience within transdisciplinary teams, don't miss this event! On October 30, we'll be participating in Bewitching Beasts, a Halloween event in the UT Gardens for families with children 10 years of age and younger. We are super excited about this event and hope to see many smiling faces and fun costumes at our table! Then on November 3, we will celebrate One Health Day with a morning of engaging speakers and a panel discussion on Climate Change followed by an afternoon of exciting outdoor activities. We are looking forward to a full day of learning and active participation!

As always, you can keep track of these and many more activities through our website, onehealth.tennessee.edu. We especially think you will enjoy the podcasts with comedian Shane Maus. We also want you to be aware of the available past Lunch and Learn seminar recordings, resources for K-12 educators, and information on the One Health minor. There is even a donation button for those who want to support OHI activities! So please check it out.

I hope you enjoy this issue; as always, I invite you to join us in uniting disciplines to protect and promote the health of all life on Earth!

UTOHI Research

Socio-Economic Epidemiology of Disease Risk in a Wildlife Trade Network

Investigators: Matthew Gray, Neelam Poudyal, Nina Fefferman

People move animals across the globe for all sorts of reasons. When it comes to moving wildlife, one major influence on who moves which animals where and how is the global pet trade. Unfortunately, a lot of the animals that people catch, breed, sell, and keep as pets can carry diseases with them. This not only affects the health of the animals kept as pets, but also has the potential to lead to spill-over, where disease in domestically held animals infects wild populations. This can have especially dire consequences when the pets are transported far from their native range, bringing with them pathogens that wild species around their new homes may not have been exposed to before. There are some steps that importers, breeders, distributors, and retailers of wildlife can take to try to minimize these risks, but it's not always clear how effective they are, and they are frequently costly.

In this project, we are looking at the example case of diseases in amphibians being transported as pets into and within the United States. We are surveying businesses involved in the amphibian pet trade and collaborating with the Pet Industry Joint



Advisory Council to find out what the critical economic, social, and epidemiological factors are that shape the amphibian pet trade network across the country. We're using this understanding to identify trade practices that are most likely to increase the risk of pathogen introduction to new areas. We are taking actual samples from animals in the current network to determine what types of pathogens they might already be carrying and which industry practices are doing best at keeping animals healthy. We are also building mathematical models that will use these findings to determine some efficient strategies for detection and surveillance across the whole network, letting us make efficient choices about how to monitor for the presence of infectious pathogens.

Our One Health team is a collaboration between a disease ecologist (Matt Gray), a social scientist (Neelam Poudyal), and a mathematical modeler (Nina Fefferman), along with some great industry partners and colleagues at other institutions. We are taking a multidisciplinary approach to tackle this important question, involving every step from basic scientific research to working with industry partners and pet owners, will help keep our wildlife, our pets, our businesses, and ourselves healthy.

For more information on this project or to see how you can get involved, visit:

onehealth.tennessee.edu/pijac.



One Health in the News

- **[Rutgers Inspires Establishment of New Jersey One Health Task Force](#)**
New Jersey became the first state to legislate a task force to fight disease transmission from animals to humans. The NJ One Health Task Force promotes communication between state agencies and scientists to address how humans, animals, and the environment affect each other. The task force was one of the visions of the Rutgers One Health Steering Committee, inspired by discussions among scientists at Rutgers and many of the state's preservation sites.
- **[CDC and Georgia Aquarium Collaborate for One Health Investigation on Otters with SARS-CoV-2](#)**
SARS-CoV-2, the virus that causes COVID-19, poses a risk to not only people, but to animals as well. The finding of SARS-CoV-2 in seven Asian small-clawed otters at the Georgia Aquarium initiated a One Health investigation to learn how the otters became infected and prevent further spread of the virus. "Thankfully, our Asian small-clawed otters had mild illness and have fully recovered, but the multi-organizational ties developed in the process are persistent," said Dr. Tonya Clauss at Georgia Aquarium.
- **[How Our Food Choices Cut into Forests and Put Us Closer to Viruses](#)**
Industrial agriculture is the greatest driver of deforestation, which results in the extreme simplification of ecological systems through the loss of plants, wildlife, and other biodiversity. The erosion of the forest frontier further increases exposure to zoonotic diseases. Forest loss and landscape change bring humans and wildlife into ever-increasing proximity, increasing risk of spill-over. In addition, zoonoses may be more prevalent in systems with lower levels of biodiversity.
- **[Hill's and AVMF Support Disaster Relief for People and Animals Impacted by Hurricane Ida](#)**
Hill's Pet Nutrition and the American Veterinary Medical Foundation have teamed up to support disaster relief in Louisiana and scholarships at Tuskegee College of Veterinary Medicine. "Hill's Disaster Relief Network has already partnered with multiple organizations to donate of 126,000 pounds of food to feed pets impacted by the storm." In addition to funding relief work by organizations, the AVMF provides individual grants that help veterinarians, vet students, and animals needing medical care in times of disaster.



One Health Opportunities

Extramural Funding:

www.foundationfar.org/what-we-do/scientific-workforce/new-innovators-in-food-and-agriculture

Student Internships/Training:

www.foundationfar.org/what-we-do/scientific-workforce/ffar-fellows

www.foundationfar.org/what-we-do/scientific-workforce/vet-fellows

www.foundationfar.org/what-we-do/scientific-workforce/kirchner-food-fellowship

One Health Events

*Event information and previous seminars
can be viewed on our website:
onehealth.tennessee.edu/events*

Grad Student Research Swap and Social

October 22, 2021 | 3:30-5:30pm EST

Virtual event via Gather.Town

*Get to know fellow grad students, share your research
interests, and explore collaboration opportunities.*

Space is limited, [registration required](#).

tiny.utk.edu/ResearchSwap

Team Science Workshop

October 28, 2021 | 12-1pm EST

*Liberating Structures for Consilience and
APT Methodologies*

Dr. Elizabeth Strand, University of Tennessee

Zoom: <https://tennessee.zoom.us/j/93306234092>

Passcode: onehealth

One Health Day

November 3, 2021 | 9am-5pm EST

Student Union, Room 362-A/B

*Join us for a day of presentations and hands-on activities
focusing on One Health and climate change.*

Virtual and in-person options available as circumstances allow.

Register at tiny.utk.edu/OneHealthDay

One Health Lunch & Learn Seminar

December 1, 2021 | 12-1pm EST

*Impact Assessment of Climate Change on Cotton Production
via Computational Simulation*

Dr. Xinhua Yin, University of Tennessee

Zoom: <https://tennessee.zoom.us/j/96927036451>

Passcode: onehealth

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