



## Director's Update

Dr. Deb Miller



I hope this finds you enjoying a beautiful fall! The fall colors brought so much beauty to the landscape, just as the trees settle in for winter. I'm sure you also have witnessed the large flocks of birds that stop off for a short rest along their migratory paths and perhaps also the scurrying of small

mammals stocking up on winter forage. Such is the bustling of life all around us, preparing for the cooler days ahead.

It has already been an exciting month for us as we celebrated One Health Day on November 3. The theme this year was Policy and One Health, and together with the Baker Center, we co-sponsored a presentation by Dr. Jude Bayham, associate professor from Colorado State University. Dr. Bayham gave an illuminating talk on Economics and Epidemiology: Beyond Dollars and Cents. (In case you missed it, you can view the webcast here: [tiny.utk.edu/JudeBayhamEE](http://tiny.utk.edu/JudeBayhamEE).) We also partnered with the UT Gardens who hosted us for a picnic lunch and wonderful presentation by Dr. Derrick Stowell on their Horticultural Therapy program. That afternoon, we set out on kayaks and spent a few hours cleaning up Third Creek with our friends from Tennessee RiverLine and Ijams Nature Center. We all had a blast—just look at those smiling faces below! We plan to do more kayak cleanups in the future; if you'd like to be notified of the next one, let us know at [onehealth@utk.edu](mailto:onehealth@utk.edu).

With One Health Day behind us, we turn our attention to Big Orange Give on November 10. There's an exciting match this year for [gifts made to UT AgResearch](#).



10 YEARS.  
10,000 GIFTS.

**NOVEMBER 10**

**All gifts will be doubled by the UT AgResearch Dean's Office!** This is an amazing opportunity for your end-of-year gift to make twice the impact. Head over to [bigorangegive.utk.edu/agresearch](http://bigorangegive.utk.edu/agresearch) and click on OneHealth under "Support a Department or Unit."

Our research highlight for this issue of the UT One Health Initiative (OHI) newsletter focuses on an NSF-funded project predicting pandemic tipping points. This research team is led by our very own Dr. Nina Fefferman and includes expertise from many disciplines and many institutions. Although newly funded, it is already moving forward at high speed!

We are super excited about the newly formed One Health Student Coalition! This group is entirely student-led and is open to all UT students. They have already been active in One Health activities and have fantastic ideas for the coming year. You can find more information on our website and can contact them directly at [onehealthstudent@utk.edu](mailto:onehealthstudent@utk.edu).

I hope that each of you have been able to participate in some of the many activities hosted by the OHI! Our [Lunch and Learn seminar series](#) is held on the last Thursday of each month; however, we're taking a break in November and December! We'll resume next year on January 26 after the holiday season. Keep an eye out for new [One Health episodes](#) of the *Here We Are* podcast with comedian Shane Mauss. We had the pleasure of hosting Shane and his team on the UT campus this week while they captured interviews for new episodes.

We also want you to be aware of resources for [K-12 educators](#), information about the [One Health minor](#), and various information on research and educational opportunities that you can access via our website—check it out at [onehealth.tennessee.edu](http://onehealth.tennessee.edu).

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

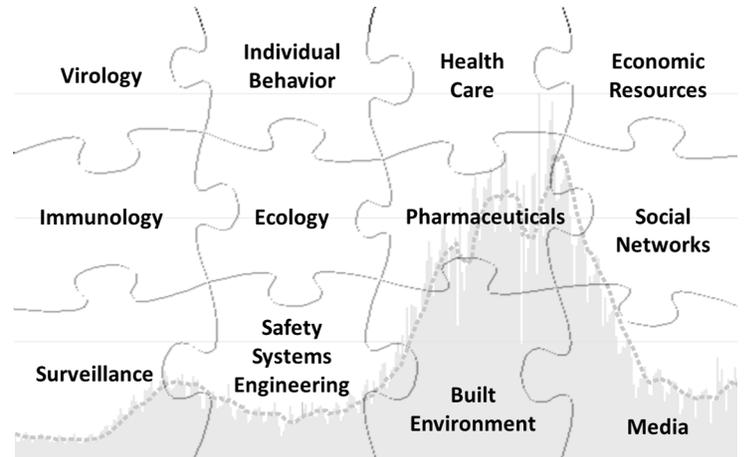


## Shifting the Paradigm on Pandemic Preparedness

Investigators: *Nina Fefferman, Deb Miller, Qiang He, and many others!*

Pandemics arise from the confluence of many contributing factors. Individually, some factors might be inconsequential but become critical when acting together with other, seemingly unrelated conditions. Complex sets of different factors, studied separately by many different scientific disciplines, can together result in a perfect storm for pandemic emergence. Preparing for, or even preventing, the next pandemic requires an improved understanding of system interdependencies across all relevant scales from molecular to social and from individual diagnosis to global surveillance.

In this project, we are focusing on how to identify and predict when emerging disease threats create just such a perfect storm of multidisciplinary factors and cause an otherwise localized outbreak to “tip over” into a global pandemic. We are working specifically to bring a One Health perspective to the problem, assembling a team of 21 scientists, representing expertise in disciplines spanning the gamut from basic biology, to social, behavioral, and economic sciences, to engineering, to computer and information sciences. Each researcher is both renowned in their respective fields and is also a dedicated interdisciplinarian. We are working together to leverage our collective diversity of expertise, experience, and perspective to build and test a framework for knitting together



disciplinary pursuits into a more complete, multifaceted, and predictive understanding; a fully One Health perspective. If it works, our new framework for multidisciplinary scientific collaboration can serve as a blueprint for all institutions dedicated to the discovery and analysis of complex linkages and will improve our capacity to predict and prevent coming pandemics.

Our One Health team is a collaboration between a mathematical modeler (Nina Fefferman), a veterinary physiologist (Deb Miller), a civil and environmental engineer (Qiang He), and many, many more. We are working together using this unified and cross-disciplinary approach to improve global, regional, and local safety to prepare for the next pandemic risk.

## One Health in the News

- [\*\*One Health in Action: Rabies Training Brings Together Human and Animal Health Professionals in Côte d'Ivoire\*\*](#)  
*This international rabies training aims to foster the emergence of collaborations between young professionals from different disciplines and sectors, and from diverse African countries. The course encouraged participants to discuss challenges in providing rabies post exposure prophylaxis and urged participants to see dog vaccination as a matter of human public health as well as animal health. This educational training is expected to strengthen the One Health approach in participatory countries to achieve the goal of zero human rabies cases by 2030.*
- [\*\*How Investing in Livestock Health Can Save People and the Environment\*\*](#)  
*The International Livestock Research Institute recently released a brief providing strategies to promote One Health through livestock systems, arguing that investing in these initiatives can prevent the rise of future zoonotic pandemics and develop resilient food systems. Implementing these One Health recommendations can help minimize greenhouse gas emissions, promote carbon sequestration, provide greater food security, empower women, enhance nutrition, and provide economic growth opportunities.*
- [\*\*Combined Human and Veterinary Services Enhance Primary Care Access for Homeless Youth and Their Pets\*\*](#)  
*The One Health Clinic based at New Horizons, a shelter for homeless youth in Seattle, provides concurrent primary health care and veterinary care for young pet-owners and their animals. “This integrated model leverages the power of the human-animal bond to increase primary care access for individuals experiencing homelessness, many of whom prioritize care for their animals over care for themselves.”*

- [Monkeypox Outbreak Highlights Need for One Health Approach to Prevent Future Zoonotic Diseases](#)  
*The current global outbreak of monkeypox is yet another warning for the adoption of a One Health approach to minimize the risk of zoonotic pathogen emergence. Researchers highlight three examples where a One Health approach to preventing spread of monkeypox is particularly needed – land-use change, bushmeat trade, and exotic pet trade.*

## One Health Opportunities

Hiring Organization	Position
The Heritage Foundation	<a href="#">Research Fellow, Climate Science and Policy</a>
IBSS Corp	<a href="#">Oceanographer (Coastal Modeler)</a>
Loyola University, School of Environmental Sustainability	<a href="#">Lecturer in Plant Restoration Ecology</a>
Oak Ridge National Laboratory	<a href="#">Associate Laboratory Director, Biological and Environmental Systems Science</a>
Otterbein University	<a href="#">Assistant / Associate Professor, Zoo Science (tenure track)</a>
Piedmont Environmental Council	<a href="#">Senior Energy and Climate Policy Analyst</a>
Rutgers Global Health Institute	<a href="#">Assistant / Associate / Professor in Health Equity, Social Justice and Population Health</a>
University of Georgia	<a href="#">Open Rank Faculty - Infectious Disease Dynamics and Modeling</a>
University of Montana	<a href="#">Research Coordinator: Building a Cross-agency Collaboration Workflow to Optimize Regional Management of CWD in Cervids</a>
USDA Forest Service, Southern Research Station	<a href="#">Research Biological Scientist</a>
USDA Natural Resources Conservation Service	<a href="#">Soil Conservationist / Rangeland Management Specialist</a>
Woodwell Climate Research Center	<a href="#">Research Assistant/Associate - Adaptation Monitoring &amp; Modeling</a>



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