One Health Day 2023:
Connecting Human, Animal, and Environmental Health

One Health Day Seminar

"One Health Approaches to Zoonotic Disease Prevention, Preparedness & Response"

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Zoonotic diseases, or those that jump between animal species and humans, make up the majority of novel infectious diseases and are primarily driven to emerge due to anthropogenic factors including land-use change, climate change, development, and agricultural expansion. However, the specific mechanisms that influence disease transmission, prevalence, and cross-species disease "spillover" are still not elucidated for most diseases and most ecosystems. Our current lack of understanding of these processes impedes our ability to develop and implement mitigation measures. Integrated 'One Health' research and policy approaches, at the nexus of ecology, biodiversity science, infectious disease dynamics, human and veterinary research, and socio-economics are needed given the complexities and global impact of emerging infectious diseases (EIDs). For example, new policy approaches that holistically consider risk factors, ecosystem services, economics, and health, i.e., emerging infectious disease risk assessments, should be incorporated into land-use decision making. In this talk I will give an overview of my research and other initiatives at EcoHealth Alliance designed to strengthen emerging disease *prevention* at the landscape-animal-human interface where they are needed most – particularly in lower-middle income countries in "EID hotspot" regions of the world. This will include: examples of how multi-sector disease surveillance and training can improve preparedness for EIDs; how simple diagnostic tools (e.g., conserved virus-family PCRs) can lead to early detection and response of *novel* virus threats; how spatial and ecological models allow us to better target zoonotic disease surveillance to the species, locations and interfaces where they will be most cost-effective; and, lastly, five policy recommendations for strengthening One Health systems for zoonoses prevention.

For more information, contact Sandra P. Chang (email: sandrac@hawaii.edu; phone: 808-692-1607)

Sponsored by the UH Manoa One Health Workgroup: John A. Burns School of Medicine, College of Tropical Agriculture and Human Resources, School of Ocean and Earth Science and Technology, and Thompson School of Social Work and Public Health. Graphic from CDC One Health website.