



THE PHOTOGRAPHER'S FRAME

ONE HEALTH FOR ALL

The intrinsic connection among people, animals, and our shared planet

Amy Bond • Eunah Preston • Jennifer K. Lane • Jonna A.K. Mazet



INTRODUCTION

A One Health awakening

The Centers for Disease Control and Prevention defines One Health as “[a] collaborative, multisectoral, and trans-disciplinary approach—working at the local, regional, national, and global levels—with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment.” With the arrival of and response to the COVID-19 pandemic, the world faces an awakening to the critical necessity of a One Health approach.

Simply being reactive to zoonotic viruses—those that move from animals to humans such as SARS-CoV-2, Ebola, and some influenzas—after they emerge, results in devastating health and economic consequences. These consequences are exacerbated when combined with other global ecological drivers of health effects such as climate change and biodiversity loss.

Proactively addressing the causes of emerging health threats, as in the current case at the source of spillover from animal hosts, before high-risk pathogens move into humans is not only possible, it is the core of a One Health axiom for solving the complex challenges facing humans, animals, plants, and the environment.

Pioneering One Health

In 1964, Dr. Calvin Schwabe, an epidemiology professor at the University of California, Davis School of Veterinary Medicine and a founding member of the faculty of the UC Davis School of Medicine, coined the term “One Medicine” in his book *Veterinary Medicine and Human Health*. Recognizing the close relationship between people and animals, he bridged the human health and veterinary professions, emphasizing principles and

strategies for disease control and prevention in animals as important for human wellness.

Decades later, in 2009, the One Health Institute (OHI) was founded at UC Davis as a key component of its continued vision for and commitment to a healthy and sustainable future for the world.

One Health in action

OHI works at the interface of animals, people, plants, and the environment to solve complex problems that impact health and conservation. Today, OHI operates in collaboration with cutting-edge scientists and policymakers around the world through our centers, laboratories, programs, and projects addressing infectious disease surveillance and response, health disparities, wildlife conservation, disaster response, biodiversity loss, climate change, and food and water security and safety, to name a few.

Gorilla Doctors, SeaDoc Society, the California Raptor Center, and the Oiled Wildlife Care Network operate at the nexus of wildlife health and conservation through hands-on veterinary care, scientific research, and emergency response for vulnerable species around the world. The work of the EpiCenter for Disease Dynamics, the Health for Animals and Livelihood Improvement (HALI) Project, and the University of California Global Health Institute’s Planetary Health Center of Expertise elevate our understanding of viral emergence in rapidly changing ecosystems while identifying new ways for humans and animals to build resilience in the face of these ecological changes. The One Health Institute Laboratory detects and discovers pathogens at the human–animal interface, including responding to

(overleaf) ONE HEALTH IN ACTION

A One Health approach advances human, wildlife, and environmental health and conservation around the world responding to a wide range of environmental crises, such as oil spills that threaten the health of animals, humans, and ecosystems.

COVID-19 here and around the world and recently discovering an entirely new species of Ebolavirus—the first one to ever be detected before emerging in humans.

A strong foundation of science, research, education, and advocacy has positioned the One Health Institute as a global leader, helping to train the next generation through the United States Agency for International Development’s One Health Workforce–Next Generation and the Rx One Health Field Institute, while also building international partnerships to prepare for and stop future pandemics through the PREDICT legacy and the Global Virome Project.

Ultimately, the One Health Institute aims to address the great challenges of our time, all interconnected and all posing significant health threats to our collective world. When the world is safe, healthy, sustainable, and just for every living creature on this planet, then, and only then, will we have achieved our vision of One Health for All.

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IT'S ALL CONNECTED

The UC Global Health Institute collaborates across research, education, and community engagement to identify local and international solutions to build resilience in the face of changing environments, and the many resulting health challenges.



THE HEALTH OF ONE IMPACTS THE HEALTH OF ALL

Many species, including hummingbirds, are sentinel species and can indicate overall environmental health. Hummingbirds are threatened by habitat loss, climate change, and human development.



THE HEALTH CONSEQUENCES OF CLIMATE CHANGE

International cooperation and scientific collaboration are key to understanding the connections among climate change, disease emergence, and health impacts on ecosystems and inhabitants, including marine mammals.

IMAGE © NOAA [NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION]; REPRINTED WITH PERMISSION



SILENT SPILLOVER

It is estimated there are over 500,000 unknown zoonotic viruses that could threaten health and food security. As habitat overlaps and shared environments between humans and animals increases, so do the risks for viral spillover.



LIVING SAFELY WITH BATS (AND ALL WILDLIFE)

Disease emergence and the risk of another pandemic is directly linked to habitat loss, human exploitation of wildlife, and species extinction. Modifying people's behavior to walk more gently on the Earth is a critical step toward reducing risk and preventing the next pandemic.



ACCELERATING HEALTH THREATS

Antimicrobial resistance (AMR) is a significant global health concern with a projected mortality of 10 million people per year by 2050 if not brought under control. Research and training that improve surveillance on the drivers of AMR emergence in people and livestock around the world is urgent and feasible.



TRAINING THE NEXT GENERATION

A prepared and nimble One Health workforce is essential to respond to the world's most pressing challenges. Trained transdisciplinary professionals are now at the forefront of the COVID-19 response around the world, making us all safer.



THE FUTURE IS IN OUR HANDS

With the arrival of COVID-19, humans are living the impact of our collective choices. Together, we have the power to change our individual choices and build a collective solution to the greatest health challenges we face.



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The Interdisciplinary Journal of Place-based Conservation

Co-published by the [Institute for Parks, People, and Biodiversity](#), University of California, Berkeley and the [George Wright Society](#). ISSN 2688-187X

Berkeley Institute for
Parks, People, and Biodiversity



Citation for this article

Bond, Amy, Eunah Preston, Jennifer K. Lane, and Jonna A.K. Mazet. 2021. One Health for all: The intrinsic connection among people, animals, and our shared planet. *Parks Stewardship Forum* 37(1): 265–276.

Parks Stewardship Forum explores innovative thinking and offers enduring perspectives on critical issues of place-based heritage management and stewardship. Interdisciplinary in nature, the journal gathers insights from all fields related to parks, protected areas, cultural sites, and other place-based forms of conservation. The scope of the journal is international. It is dedicated to the legacy of [George Meléndez Wright](#), a graduate of UC Berkeley and pioneer in conservation of national parks.

Parks Stewardship Forum is published online at <https://escholarship.org/uc/psf> through [eScholarship](#), an open-access publishing platform subsidized by the University of California and managed by the California Digital Library. Open-access publishing serves the missions of the IPPB and GWS to share, freely and broadly, research and knowledge produced by and for those who manage parks, protected areas, and cultural sites throughout the world. A version of *Parks Stewardship Forum* designed for online reading is also available at <https://parks.berkeley.edu/psf>.

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The journal continues *The George Wright Forum*, published 1981–2018 by the George Wright Society.

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On the cover of this issue

Family exploring tidepools at Cabrillo National Monument, California. | [GEDAPIX](#)

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