

Every day, millions of people – especially those living in poverty – are exposed to a wide variety of pathogens and other health hazards in the environment. The new field of “Planetary Health” seeks solutions that promote healthy outcomes for both people and nature. This requires an understanding of the links between human disease and environmental change. Through Stanford’s Program for Disease Ecology, Health and the Environment, interdisciplinary researchers ranging from epidemiologists to engineers are studying these connections and pioneering solutions that improve public health by fostering healthy environments.

Mission

To discover sustainable ecological solutions to humanity’s health challenges and to prepare the next generation of planetary health innovators.

Goals

- Advance research and creative solutions to modern health and environmental challenges
- Promote interdisciplinary dialogue among the health, environment and socio-economic sciences
- Educate and engage students in the emerging field of planetary health

WE ARE

- A partnership of experts in public health, ecology, engineering, computer science, medicine and the social sciences
- A joint initiative of the Stanford Woods Institute for the Environment and Stanford Center for Innovation in Global Health

WE REACH

- Global health, science and environmental leaders
- Researchers
- Students
- Communities
- Engaged citizens



Keystone Projects

The Program for Disease Ecology, Health and the Environment (DEHE) supports keystone projects, which are case studies to advance research at the interface of health and environmental science. The keystone projects design and test ecological solutions for ongoing health and environmental challenges around the world.

In West Africa: The Upstream Alliance

The Upstream Alliance is a multi-institutional partnership to develop environmental interventions aimed at reducing schistosomiasis, a waterborne parasitic disease. The team's reintroduction of native prawns at river access points in West Africa, upstream of the Diama Dam, led to fewer disease-carrying snails and reduced transmission of the disease, while restoring a natural aquatic predator that was previously

excluded by the dam. A scaled-up prawn-farming enterprise has the potential to curb disease, fight hunger, and alleviate poverty.

In China: Pigs and Parasites

A Stanford-led team is piloting interventions to stop *T. solium*, the pork tapeworm, a parasite that afflicts millions in Latin America, Africa, and Asia. Interventions will be tested in rural Tibetan steppe communities in China to find solutions to address environmental pollution with human sewage, to vaccinate pigs, to improve access to healthcare, and to increase awareness of the disease. The project aims to interrupt a cycle of poverty and disease created by this infection and showcase the utility of a holistic approach to linked health and environmental interventions.

In Southeast Asia: Water-Sensitive Cities

A prime example of the DEHE focus on planetary health, an international consortium – including faculty and students at Stanford – plans to transform water and sanitation infrastructure within informal settlements (i.e. slums) in Fiji and Indonesia. The approach relies on 'nature-based solutions,' such as wetland engineering and water reclamation, rather than a traditional 'big pipes' approach to urban water infrastructure. If successful, the project would demonstrate an affordable, ecologically-based health solution that could improve the lives of more than a billion people living in urban slums. The interdisciplinary team is quantifying the human health, environmental, economic, and social benefits of the intervention.

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