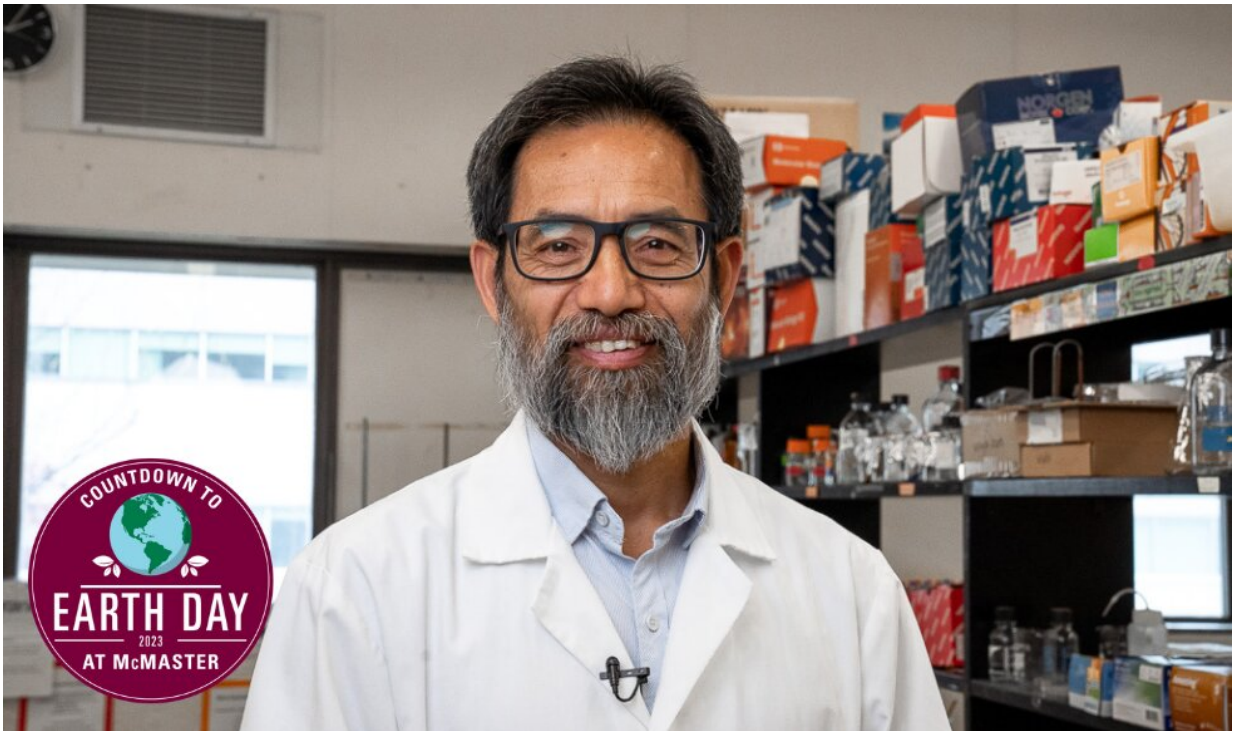


Climate change could lead to more fungal disease in humans, says expert

April 24 2023, by Blake Dillon



Jianping Xu is a professor of biology at McMaster University and a member of the Michael G. DeGroot Institute for Infectious Disease Research. Credit: McMaster University

Climate change is driving many fungi to adapt to the Earth's warmer temperatures, which could mean more disease-causing fungi will learn to live in and on humans, says a McMaster University expert.

Jianping Xu, a professor of biology at McMaster University and a member of the Michael G. DeGroot Institute for Infectious Disease Research, says that our warm body temperature—37°C—has long protected us from [fungi](#) that thrive in [cooler temperatures](#). But as global temperatures rise, he says people may be at a greater risk of infection.

In fact, recent research out of his lab, published in *Frontiers in Public Health*, showed that *Aspergillus fumigatus*—a common environmental fungi and a major cause of infections in humans—is capable of rapidly adapting to changes in temperature.

"As temperatures rise, 37 degrees is becoming an increasingly less important barrier for fungi to get into us," Xu says.

Xu, whose research supports the Global Nexus for Pandemics and Biological Threats, says that warming temperatures are just one part of the problem, noting that the heavy rainfalls and rising sea levels caused by a changing climate might likewise teach fungi to thrive in new environments.

"It's completely likely that this all will increase the number of fungal populations that are pathogenic to humans," he says.

Significant changes to how fungi live may also have implications beyond disease, Xu says. He notes that many species of "good fungi" have long been harnessed for food production, antibiotic discovery, plant growth and [environmental remediation](#), but that major disruptions could potentially turn good fungi bad.

Ensuring this doesn't happen is critical, Xu says.

"Some fungi cause disease in humans, animals, and plants, but most are actually very, very good," he explains. "They are very underappreciated

organisms, and, without them, we wouldn't have the world that we do today."

More information: Greg Korfanty et al, Assessing thermal adaptation of a global sample of *Aspergillus fumigatus*: Implications for climate change effects, *Frontiers in Public Health* (2023). [DOI: 10.3389/fpubh.2023.1059238](https://doi.org/10.3389/fpubh.2023.1059238)

Provided by McMaster University

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