Dr. Justin Remais and Dr. Amy Kirby • Flooding and Climate Change

Dr. Justin Remais' research focuses on the environmental biology and epidemiology of infectious diseases, with a focus on the spread of waterborne and vector-borne diseases in rapidly changing environments. Dr. Remais combines environmental (and mathematical) models to better understand precisely how environmental factors influence the transmission of infectious diseases. His current projects quantitatively examine how key waterborne and vector-borne diseases are directly, proximally, and distally impacted by changes to the global climate system. Dr. Remais is Associate Professor of Environmental and Global Health at the Rollins School of Public Health at Emory University.

Dr. Amy Kirby is an Assistant Research Professor in the Center for Global Safe Water at Emory University. Her work focuses on the infection risk associated with water and sanitation. Her projects have examined the bacterial and viral contamination in drinking water, wastewater, and surface water, such as lakes, oceans, and floodwaters. She has projects in the Atlanta area and in low-income urban areas of Ghana and India. In addition to water microbiology, Dr. Kirby studies norovirus, the 'stomach flu'. Her studies include the epidemiology of the infection, vaccine trials, and evaluation of new disinfectants.

Discussion Notes

By directing more attention to the needs of Atlanta's low-income communities, the city could address issues related to flooding and climate change. The city has invested in infrastructure like roads and highways, which, despite being very useful, encourage flooding by creating more impervious surfaces. The health risks created by flooding are significant—the microbial risk is about the same as from raw sewage—and a changing climate is likely to influence an increase in the frequency and magnitude of flood events.

The city should understand that communities of low socioeconomic status are interested in green spaces, and communities need to be able to provide input to the city.

TAKE-HOME POINTS

Contact with floodwaters can cause bacterial and parasitic infections.

Washing your hands and cleaning affected areas with bleach can reduce your chances of getting sick.

Surface flooding can contaminate tap water. Consider boiling your drinking water during flood events.

KEY WORDS

Pathogen: something that causes disease

Waterborne disease: an illness caused by consuming contaminated water

Parasite: an organism that lives in, relies on, and negatively affects a host