PERTUSSIS

WHAT CEID IS DOING ABOUT PERTUSSIS?

Pertussis ("whooping cough") is a highly contagious respiratory disease that causes severe infections, especially in infants and children. Despite 70 years of vaccination, pertussis causes roughly 195,000 infant deaths every year and remains a public health priority. Using data science and biological modeling, CEID scientist Professor Pej Rohani is figuring out why pertussis has resurged in recent decades. These discoveries are being used to develop more effective strategies for future vaccine campaigns.

THE ROHANI LAB

The Rohani Lab, in the Odum School of Ecology and College of Veterinary Medicine, uses mathematical modeling, data analysis, and statistical inference to understand the ecology and evolution of infectious diseases of humans and wildlife, including childhood infections, polymicrobial systems, and emerging infectious diseases. These methods elucidate the individual and social factors affecting transmission and the nature and duration of immunity, resulting in testable predictions with consequences for policy.
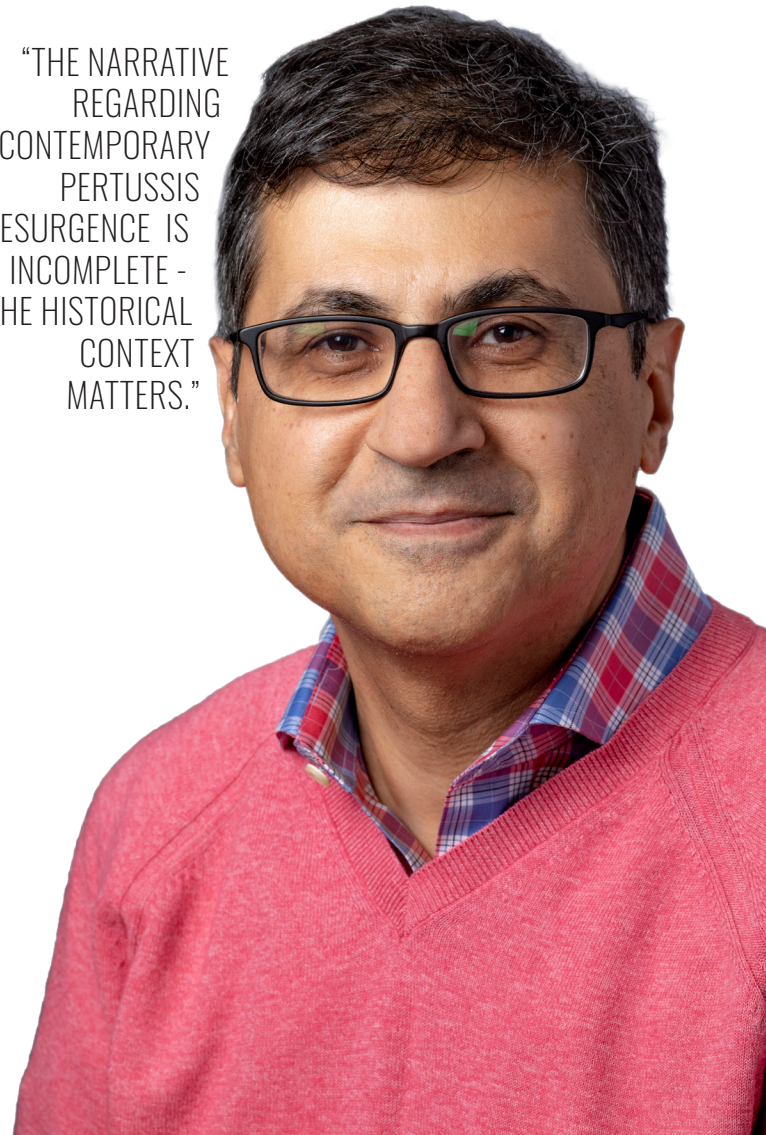
MAJOR DISCOVERIES

• The resurgence of pertussis is a consequence of incomplete historical coverage with an imperfect vaccine, and not a result of recent changes in the vaccine.
• While vaccine-acquired immunity from pertussis wanes over time, it lasts far longer than previous research suggested.
• Schoolchildren are a core transmission group for pertussis -- efforts aimed at curtailing transmission are more likely to succeed if they prioritize this population.
• Pertussis eradication is unlikely to occur without targeted booster campaigns.
• Decision makers should use data-driven mathematical models to guide interventions.

SUPPORT CEID

Financial support from individual, foundation, and corporate partners is crucial for CEID to continue driving research and educating the next generation of scientists. To learn more about how to support our research on pertussis and other infectious diseases, visit us at https://t.uga.edu/4xa or e-mail us at ceid@uga.edu

"THE NARRATIVE REGARDING CONTEMPORARY PERTUSSIS RESURGENCE IS INCOMPLETE - THE HISTORICAL CONTEXT MATTERS."

Pej Rohani
University of Georgia
Professsor

PERTUSSIS: EPIDEMIOLOGY, IMMUNOLOGY, AND EVOLUTION

In a new textbook, editors Pej Rohani and Samuel Scarpino bring together current research from multiple disciplines to shed light on the resurgence of this deadly disease. This is the first book in the Ecology and Evolution of Infectious Diseases series from Oxford University Press in partnership with CEID.

CEID MISSION

CEID brings together social and natural scientists through synthetic thinking, data science, and basic biology to solve pressing questions in the understanding of infectious diseases. As an intellectual community, we value scientific curiosity, seek rigorous solutions to the problems posed by ecology and infectious diseases, and prepare a rising generation of scientists with the technical skills needed to advance scientific inquiry and translational practice.