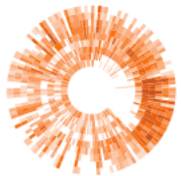


Emerging Pathogens and Climate Change

Derek A.T. Cummings

University of Florida

Johns Hopkins University

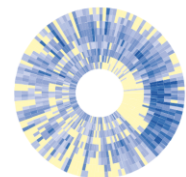


Infectious Disease
DYNAMICS

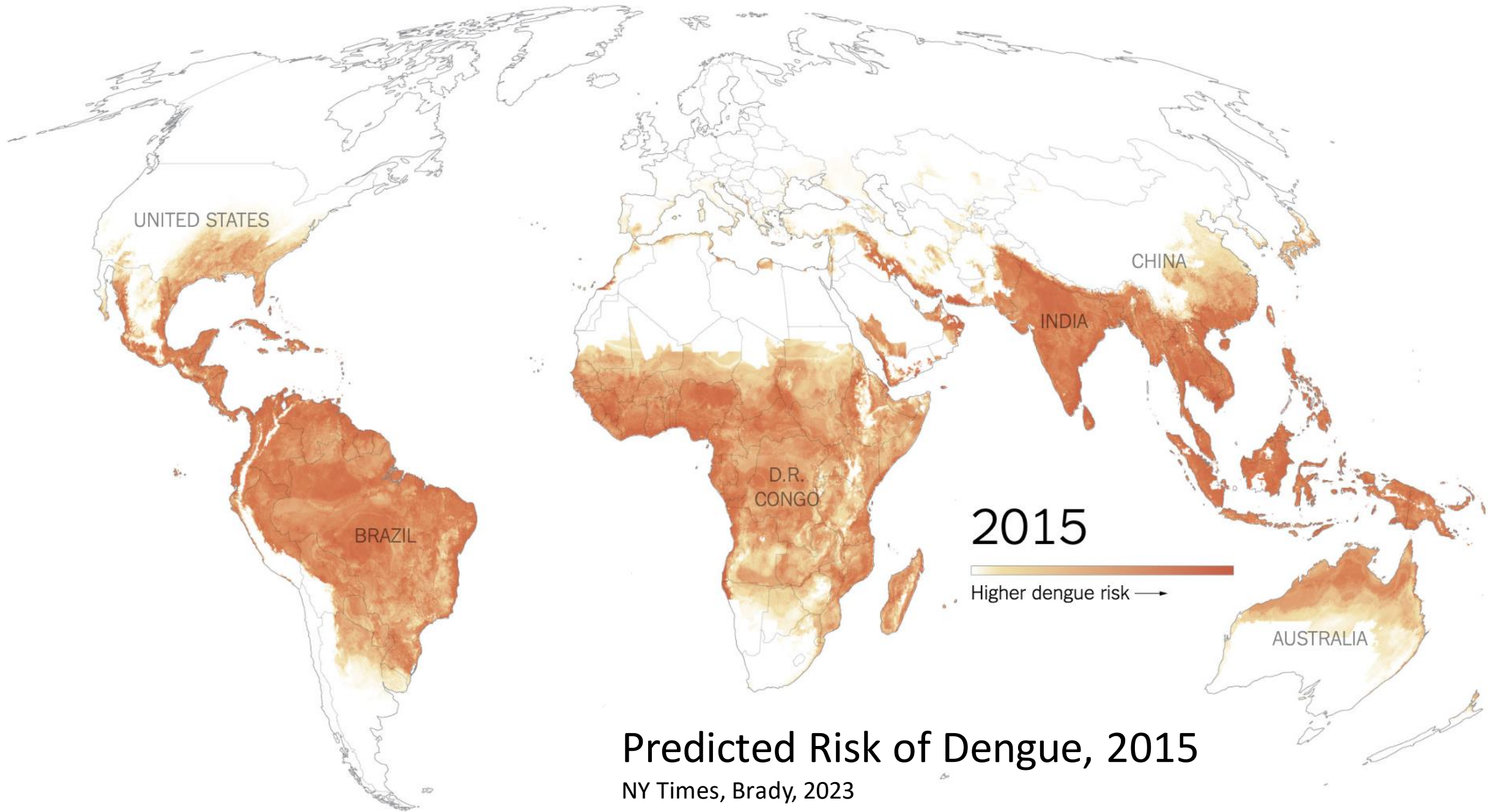
UNIVERSITY of
FLORIDA



Emerging Pathogens Institute
UNIVERSITY of FLORIDA

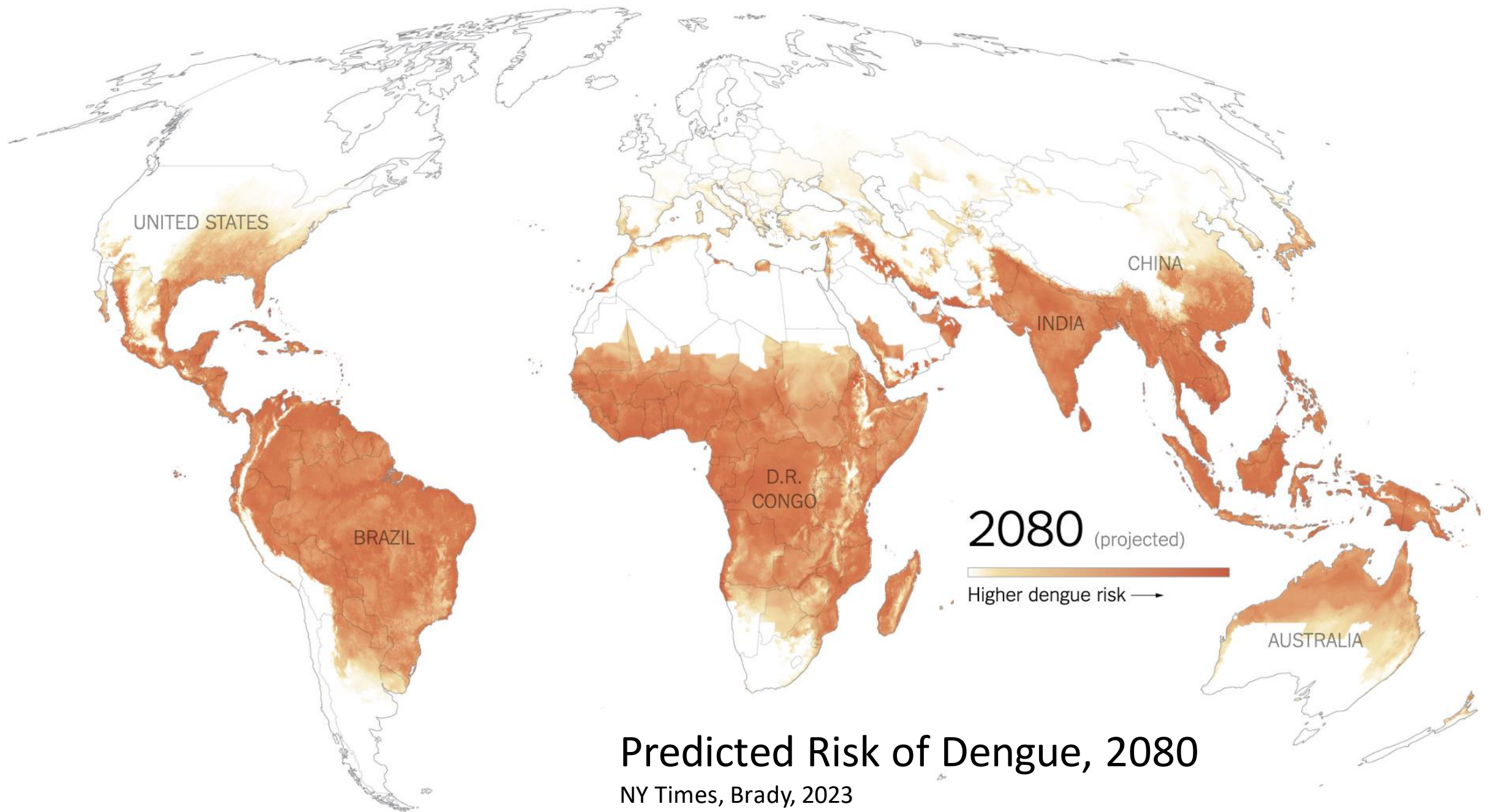


Infectious Disease
DYNAMICS
JOHNS HOPKINS BLOOMBERG SCHOOL of PUBLIC HEALTH



Predicted Risk of Dengue, 2015

NY Times, Brady, 2023

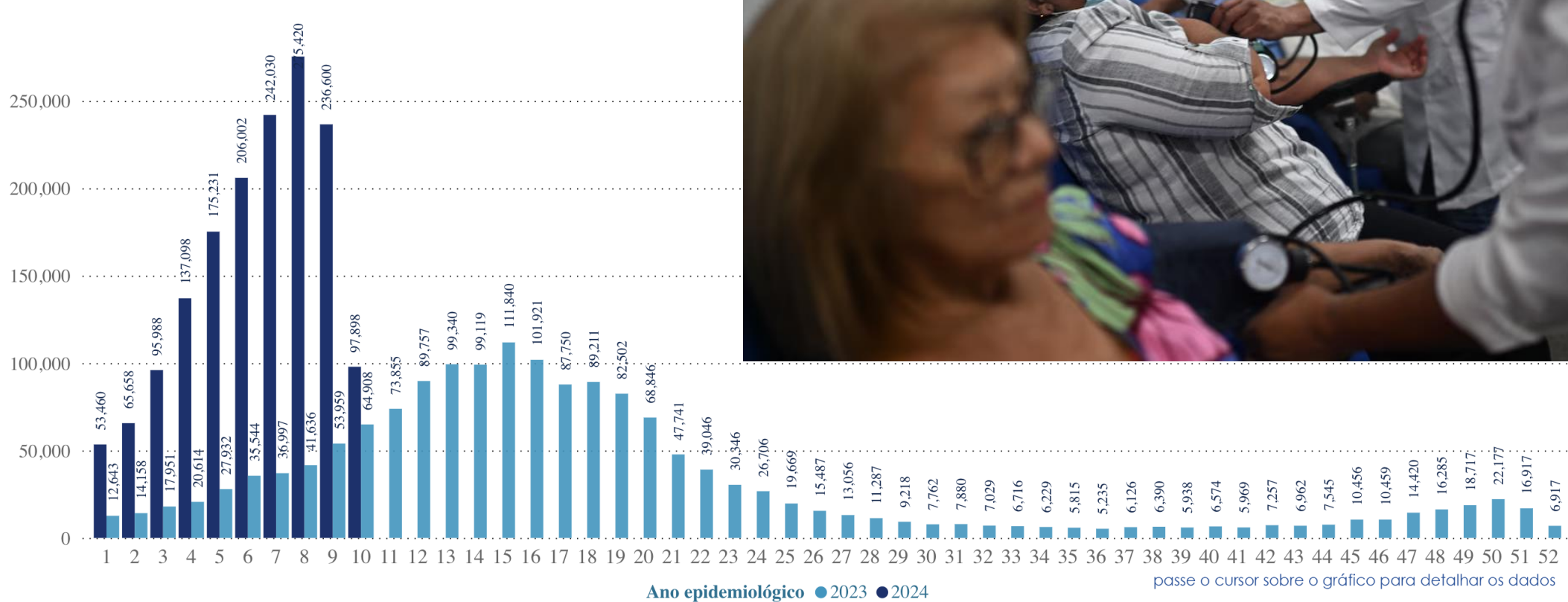


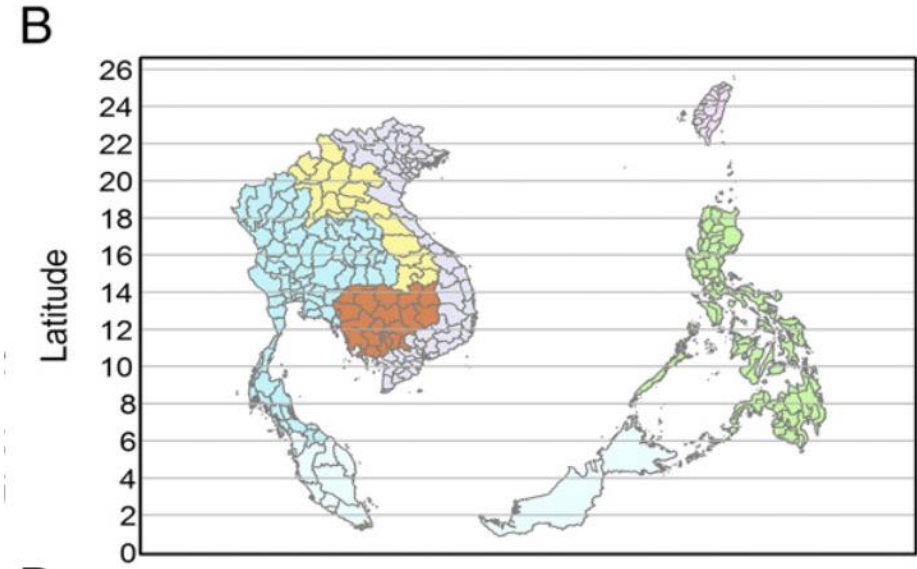
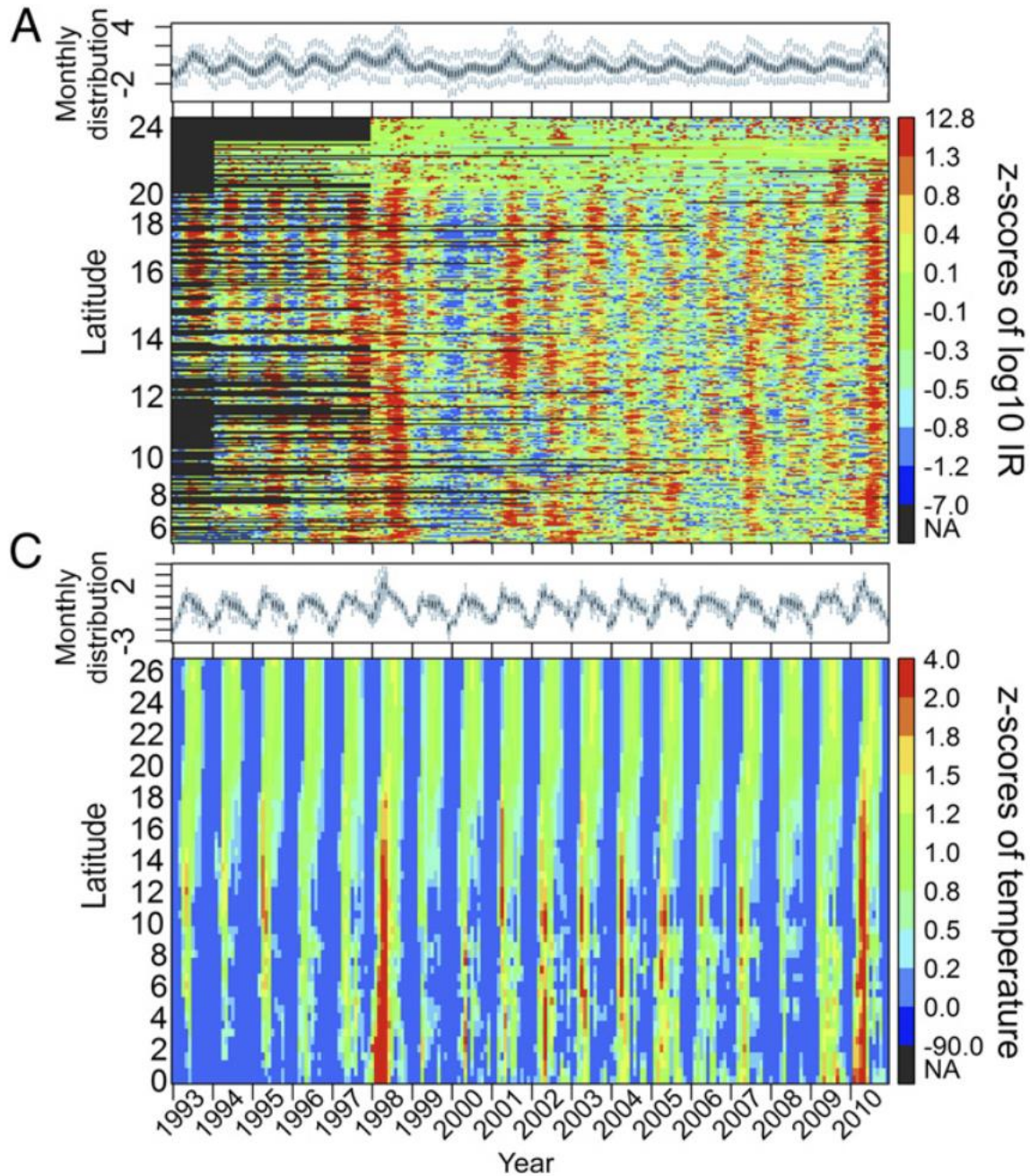
Predicted Risk of Dengue, 2080

NY Times, Brady, 2023

Record Numbers of Dengue Cases in Brazil in 2024

CASOS PROVAVELIS DE DENGUE POR ANO E SEMANA EPIDEMIOLÓGICA, 2023





Climate variation drives epidemics to be more intense, more coincident Across regions

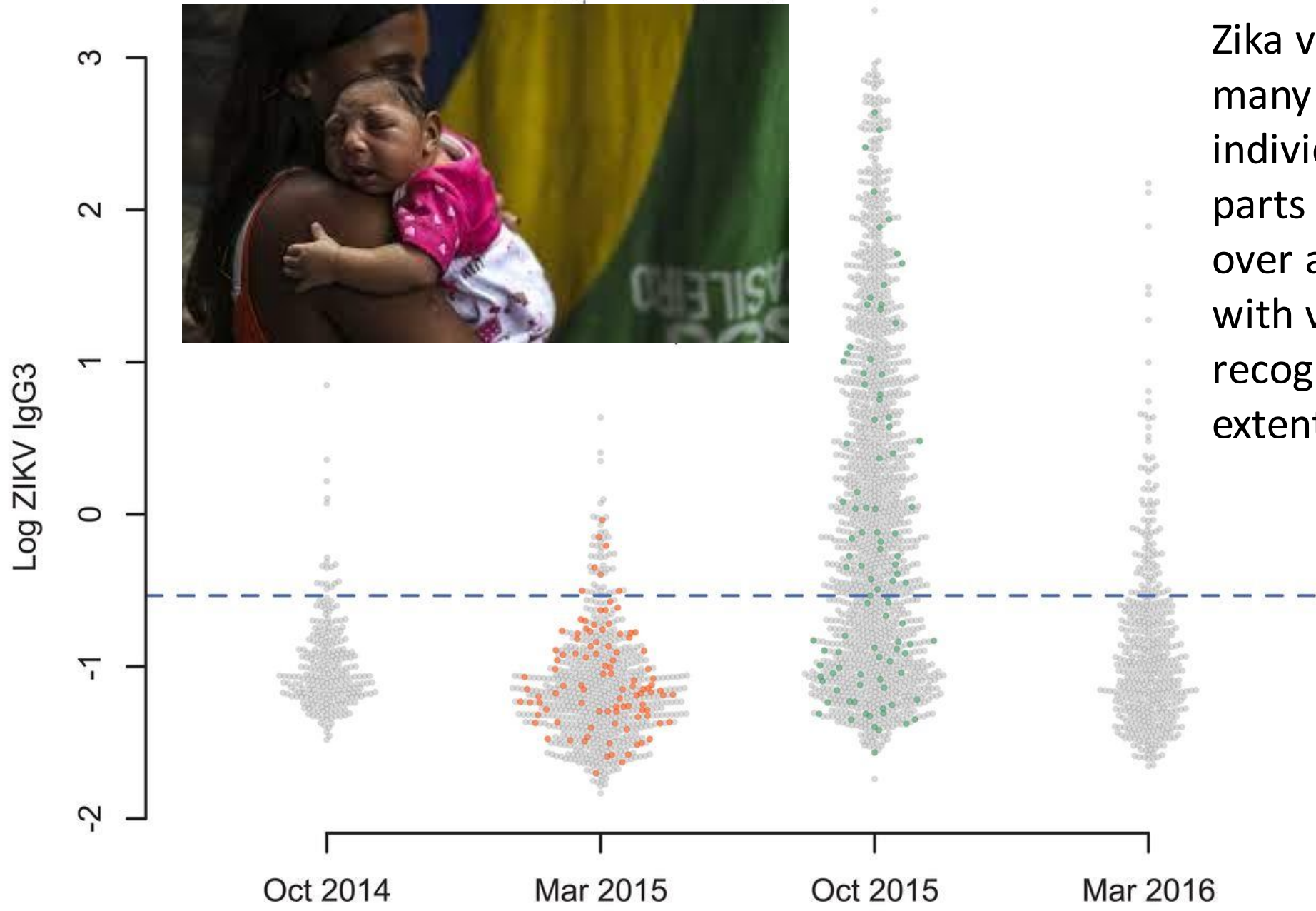
El Niño events associated with region wide outbreaks

Outbreaks of consistently present pathogens present an opportunity

- Build expertise
- Test strategies and systems
- Build trust



Pathogens disproportionately affects people with low resources



Zika virus infected as many as 70% of individuals in many parts of South America over a 5 month period with very little recognition of the extent of transmission

Key need to build a global serum observatory

- Draws upon experiences during COVID pandemic
- Strengths of UK and US
 - REACT-2
 - US Military Serum Repository
- Current blindspot
 - How do we measure the incidence of SARS-CoV-2 presently?
- Analytic, logistic framework needs to be built and extended to other parts of the globe to build a generalizable, comparable framework

Thank you