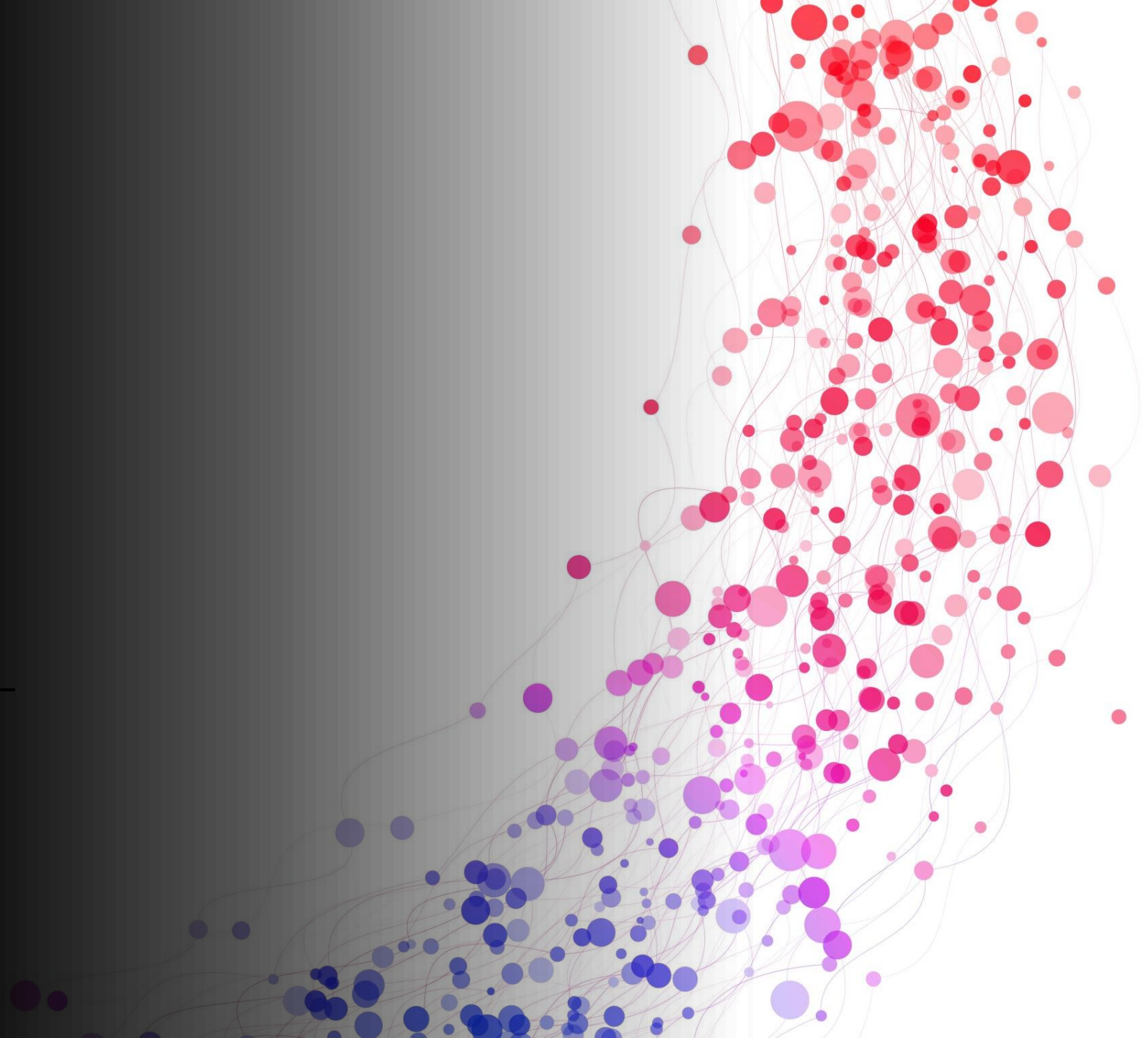




Paul J. Burns, MD, FAAFP

Pandemics

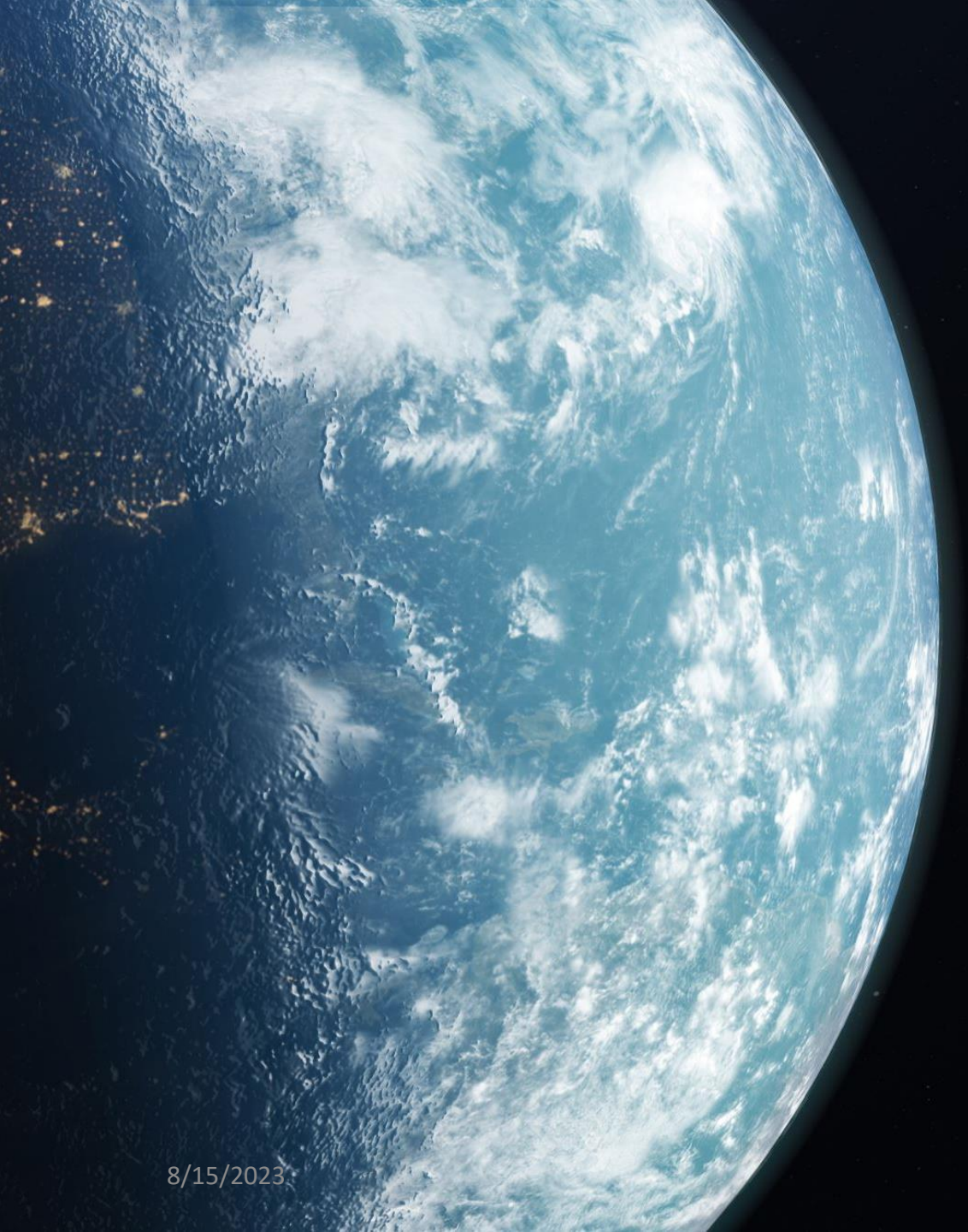
Why we care and prepare



History

Previous to 2000 the world has averaged 3 pandemics per century

- In 1900's: 1918, 1957, 1968
- 2000's: there have been two pandemics, 2009 (H1N1) and 2019(SARS-CoV2)
- However there have been other events of concern since 2000 that have not quite met the pandemic threshold.
 - 2003-SARS CoV 1
 - 2012-MERS
 - 2013-Ebola
 - 2015-Zika



Factors that suggest the world is at higher risk of additional pandemics

- Population increase
- Urbanization of wild spaces
- Increased global mobility
- Climate change
- Changes in food and agricultural systems

How do we prepare?

Surveillance

- Sentinel systems
- Wastewater testing
- Strong public health systems

Diversify supply chains globally

Strategic National Stockpiles

Funding

Plan for infection control in new construction and updates to old buildings to allow increased ventilation, safety and flexibility of function



Lessons Learned - Positives

- Public-private partnerships were beneficial
 - Vaccine development (operation warp speed)
 - Distribution – CVS, Walgreens
 - Mobility and contact tracing – Google
 - Testing – USPS
- Science as a whole – Genome identified with in first months of start of pandemic
- Health Care – Responded, showed up and did not flee

Lessons Learned – Need improvement

- Communications
 - Need to be better at sharing why decisions were made and better at saying “I don’t know”. Examples: masks, school closings
 - Public Health is political but should not be partisan, need better understanding of priorities of partners
- Health Systems preparedness, there is no surge capacity in our health systems so is difficult to manage emergency situations
- Public Health Funding, funding comes after an emergency starts, funding is neglected or cut when not an emergency
- Lack of centralized data system and process, we had 51 separate responses.



Lessons Learned - Additional

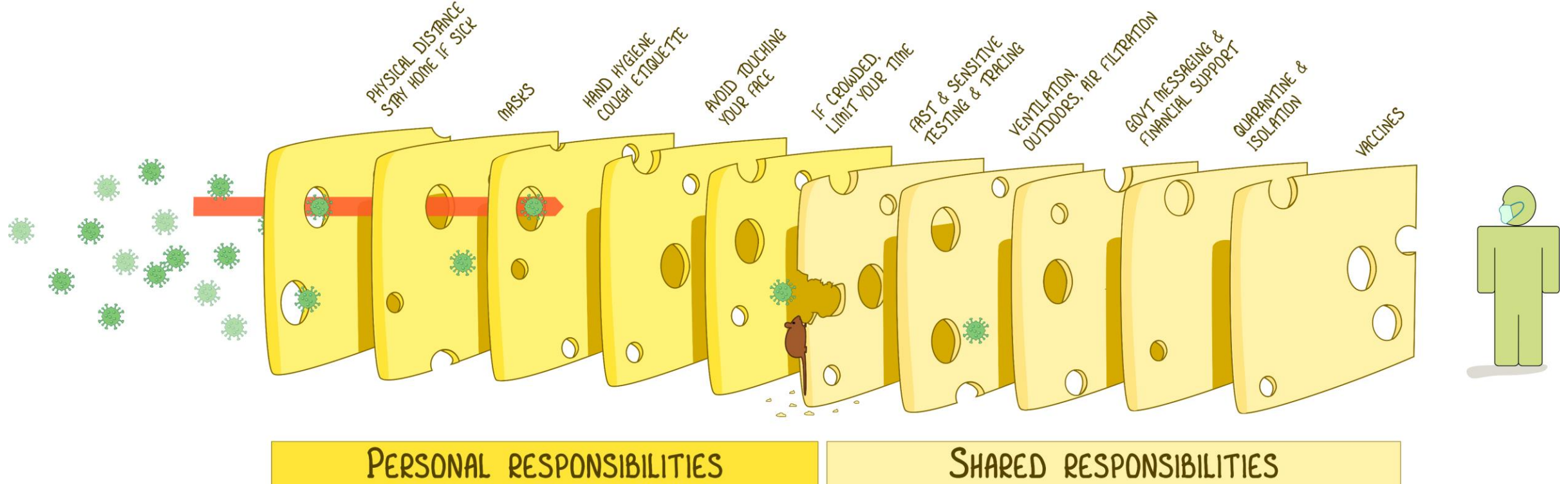
- Access to those with social or economic struggles. Vaccines were not readily available to poorer countries and communities and made it more difficult to stop continued spread
- A final point on communication. Science is not static. It is ever evolving and that is not well understood and has been poorly communicated

There are examples of success

- PEPFAR (President's Emergency Plan for AIDS Relief) under President Bush (the younger) credited with saving 25 million lives and preventing 5 million children from being born with AIDS
- Polio Eradication efforts, not fully done but also has cross benefits, the surveillance system set up helped catch EBOLA in Nigeria before it could be spread.

THE SWISS CHEESE RESPIRATORY VIRUS PANDEMIC DEFENCE

RECOGNISING THAT NO SINGLE INTERVENTION IS PERFECT AT PREVENTING SPREAD



EACH INTERVENTION (LAYER) HAS IMPERFECTIONS (HOLES).
MULTIPLE LAYERS IMPROVE SUCCESS.