## Viral Sub-species Classification

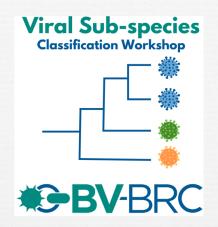
BV-BRC; NIAID; CDC; NCBI Workshop April 8, 9, 10, 2024

## Virus Sub-species

- Variation between members of a species
  - Sub-species variation is evolution in real time
  - ◆ Evolution of new, taxonomically-distinct virus ranks occurs across more protracted time frames
    - Decades to millenia and more
- Viruses evolve in real time in response to selection pressure
  - ◆ Increasing fitness due to phenotypic consequences
  - ◆ Increased fitness impacts transmission, pathogenesis and disease
- We classify and name evolving lineages to study and track this process

## Why do we Care?

- ◆ Intellectual curiosity
- ◆ To better understand how to respond more effectively to changing disease threats
  - ◆ Public Health response
  - Prevention
  - **♦** Treatment



- ♦ Day 1: What and Why
  - Tracking Evolution
  - ♦ The Viruses
- Day 2: How
  - Approaches to Classification
  - **♦** Tools
- Day 3: Response
  - Meeting Public Health Needs
- Next Steps