

# SPHERES

## Sequencing for Public Health Emergency Response, Epidemiology and Surveillance

*A National Open Genomics Consortium for COVID-19 Response*

SPHERES is a new national genomics consortium to coordinate and standardize COVID-19 sequencing across the United States. SPHERES brings together partners from 85 institutions to share genomic data that will be used to highlight changes in the virus blueprint as input for mapping transmission of COVID-19. SPHERES data will also advance research for drug and vaccine development and will inform disease mitigation strategies now and for years to come.

### SPHERES Objectives

The SPHERES consortium has 8 core objectives:

- 1** To bring together a network of sequencing laboratories, bioinformatics capacity and subject matter expertise under the umbrella of a massive and coordinated public health sequencing effort.
- 2** To identify and prioritize capabilities and resource needs across the network and to align sources of federal, non-governmental and private sector funding and support with areas of greatest impact and need.
- 3** To improve coordination of genomic sequencing between institutions and jurisdictions and to enable more resilience across the network.
- 4** To champion concepts of openness, standards-based analysis, and rapid data sharing throughout the United States and worldwide during the COVID-19 pandemic response.
- 5** To accelerate data generation and sharing, including the rapid release of high-quality viral sequence data from clinical and public health laboratories into both the National Center for Biotechnology Information (NCBI) and Global Initiative on Sharing All Influenza Data (GISAID) repositories in near-real time.
- 6** To provide a common forum for US public, private, and academic institutions to share protocols, methods, bioinformatics tools, standards, and best practices.
- 7** To establish consistent data and metadata standards, including streamlined repository submission processes, sample prioritization criteria, and a framework for shared, privacy-compliant unique case identifiers.
- 8** To align with other national sequencing and bioinformatics networks, and to support global efforts to advance the use of standards and open data in public health.

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