### DOE's expertise in high performance computing provides unparalleled tools for development of medical therapies and for tracking the spread of the virus

These capabilities can accelerate the pace to develop therapeutic treatments, and to make our nation's response to the pandemic much more efficient.

### DOE maintains the world's leading characterization capabilities – X-ray and neutron sources, cryo-electron microscopy, and genomics facilities, for determining pathogen protein structure

These have been absolutely essential for understanding SARS-CoV-2.

### DOE's world-leading capabilities in materials development and manufacturing scale-up have addressed crucial supply-chain problems

The capabilities will continue to contribute to the fight against COVID from personal protective equipment (PPE) to testing supplies and vaccine manufacturing.

### DOE's complex-wide capabilities in biological and environmental sciences, building on biological and national security expertise, can be quickly leveraged to address pandemic response – supporting the national infrastructure for testing for disease as well as for understanding how novel pathogens spread

The NVBL has been supporting CDC, FDA, and other federal agencies in standing up COVID-19 testing.
NVBL: Lessons Learned

Getting ALL the National Labs to the table from the start is important

- Coordination with DOE Headquarters on funding/subject matter expertise

Enablers of NVBL success include:

- Strong consensus between DOE and the Labs on the problem statement
- Clear understanding of the problems and stakeholders for a given effort
- Rapid selection of projects and allocation of funding
- Timely access to unique DOE capabilities and staff
- Weekly interactions to share issues and ideation of solutions

Future vision

- Leverage NVBL collaborations and successes to enable national architecture for biosecurity and future pandemic preparedness
- Build alliances with universities, private sector, and other federal agencies to significantly increase the pipeline of talents for innovation
- Expand NVBL modality to the opportunity space of next-generation biology, biomanufacturing, and the bioeconomy
National Virtual Biotechnology Laboratory
COVID-19 R&D for the nation

https://science.osti.gov/nvbl