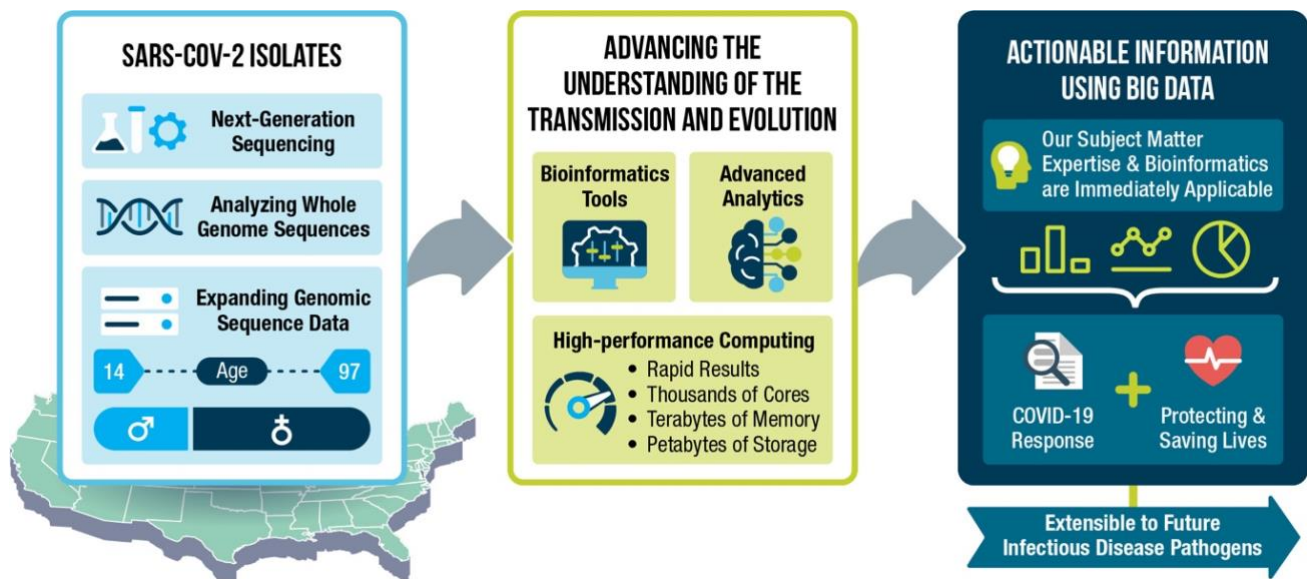




# Advancing the Overall Understanding of COVID-19 Transmission and Evolution

**Noblis is elucidating SARS-CoV-2 evolution and the emergence of clinically important variants through innovative approaches to rapidly analyze data from whole genome sequencing.**

The rapid spread of COVID-19 has highlighted biosurveillance, public health, logistics and computational challenges. The extent of genomic diversity of SARS-CoV-2 in circulation, and the potential impact of genetic variation on viral transmissibility, pathogenicity, and diagnostic and therapeutic efficacy have yet to be fully elucidated. Through Noblis Sponsored Research, Noblis is analyzing hundreds of SARS-CoV-2 genomes provided by a collaborator who is sequencing COVID-19 clinical samples obtained from a diverse cohort throughout the United States. This work is expanding our nation's SARS-CoV-2 baseline genomic sequence data repositories, supporting state and local surveillance through direct public health agency reporting, and advancing our overall understanding of the transmission and evolution of clinically important variants, ultimately protecting and saving lives worldwide.



As part of this ongoing research, the sequenced and analyzed genomes and associated metadata are available at NCBI GenBank: [PRJNA718231](https://www.ncbi.nlm.nih.gov/genbank/prj/PRJNA718231). Learn more about the Noblis response to COVID-19 at [noblis.org/covid-19](https://noblis.org/covid-19).

## An Industry Leader in Advanced Bioinformatics



Noblis turns genomic data into actionable information using advanced analytics and high-performance computing (HPC). We design and develop cutting-edge software to address client missions and challenges. Our tailored solutions are agile and adaptive for rapidly responding to emerging outbreaks. By innovating computational tools and applying our subject matter expertise, we are responding to our nation's rapidly evolving biosurveillance challenges and preparing for future threats.

Noblis' biosafety level 2 (BSL-2) facility enables on-going COVID-19 and other infectious disease research with state-of-the-art equipment including: Oxford Nanopore MinION and Illumina iSeq 100 sequencing technologies, [Noblis Field Portable Sequencing System](#), ABI StepOnePlus™ Real-Time PCR System and Cellink BIO X™ 3D Bioprinter. Learn more at [noblis.org/download-labs](https://noblis.org/download-labs) and at [bioportal.noblis.org](https://bioportal.noblis.org).

## Noblis in Action – Client Success Story



Scientists from Noblis and the Defense Biological Product Assurance Office (DBPAO), a component of the Joint Program Executive Office for Chemical, Biological, Radiological, and Nuclear Defense's (JPEO-CBRND) Enabling Biotechnologies, are continuously evaluating mutations and circulating variants from genomic sequence data to assess their potential deleterious effect on SARS-CoV-2 detection assays using Noblis' unique bioinformatics application, BioLaboro. **Features include:**

- BioVelocity® – our patented tool which identifies unique signature regions in a set of target sequences
- Primer3 – an open-source tool which determines potential Polymerase Chain Reaction assay primers and probes in the identified signatures
- PCR signature erosion tool (PSET) – our DBPAO-Noblis tool evaluates new and existing assay sequences against user customizable sequence datasets

Noblis is furthering DBPAO's mission to be a trusted resource for high-quality and reliable biological threat agent detection assays. Updated research data generated by BioLaboro are published at the online discussion forum, [virological.org](https://virological.org). You can also read our press release at [noblis.org/coronavirus](https://noblis.org/coronavirus).

## Latest Publications and Presentations

Brinkac L, Diepold S, Mitchell S, Kolakowski LK, Nelson WM, Jennings K. (2021, February 25). [Emerging SARS-CoV-2 mutations circulating in the United States \[Conference poster abstract\]](#). Emerging Pathogens Institute (EPI) Research Day, virtual event, University of Florida, United States.

Holland M, Negrón D, Mitchell S, Dellinger N, Ivancich M, Barrus T, Thomas S, Jennings KW, Goodwin B, Sozhamannan S. 2020. [BioLaboro: A bioinformatics system for detecting molecular assay signature erosion and designing new assays in response to emerging and reemerging pathogens](#). bioRxiv doi: 10.1101/2020.04.08.031963.

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**Working with Us:** Noblis is an OASIS Pool 1 and Pool 4 contract holder as well as a member of the U.S. Army Cornerstone consortium for other transaction agreements. Learn more at [noblis.org/contracting](https://noblis.org/contracting).