Advanced Molecular Detection
National investment to advance genomic sequencing capacity

Mid-Atlantic Region

Maryland

Total Investment[1]: $10,701,938

State and Local Investment: $9,343,617

Research Awards: $1,358,321

CDC's Advanced Molecular Detection (AMD) program builds and integrates laboratory, bioinformatics, and epidemiology technologies across CDC and nationwide. Since 2014, AMD has received support from Congress—now a $40 million per year appropriation—to implement these technologies in public health programs. Through investments in AMD technologies, CDC is improving both public health outcomes and preparedness in dozens of areas including foodborne disease, influenza, antibiotic resistance, hepatitis, pneumonia, and meningitis.

With funding from the American Rescue Plan Act of 2021, the AMD program developed a multi-year plan to expand its support to state, local, and territorial public health laboratories with more staff and resources to collect specimens for COVID-19 testing, sequence them to identify and track SARS-CoV-2 variants, and share data, now and future years.

Workforce Development

Maryland is part of the Mid-Atlantic region. In 2018, the AMD program established seven workforce development regions across the country. Each region has an AMD training lead and a bioinformatics lead. This provides a network of customized AMD support which helps develop skills and provides training assistance to public health labs across the country.

Through the Mid-Atlantic region's training resources, Maryland receives lab support on data analysis and how to interface with IT departments. They also receive both pathogen-specific training and cross-cutting instruction to help staff develop the critical skills necessary to extract, analyze, and interpret sequencing data.

[1] Funding to public health departments includes support from the American Rescue Plan of 2021 and AMD annual appropriations in FY2021-2023. Awards to university and research partners were funded through appropriations supporting the COVID-19 response.

www.cdc.gov/amd

University and Research Partners in Maryland

These awards are intended to fill knowledge gaps and promote innovation in the U.S. response to the COVID-19 pandemic. Funding awards are determined through a competitive selection process based on scientific needs and available funds.

Johns Hopkins University

SARS-CoV-2 Genome: viral evolution as a factor of sustained community transmission and prolonged infection (2021—$1,358,321)

This study will provide real-time viral evolution data to identify whether specific changes in the SARS-CoV-2 genome mean a variant can spread more easily between people. It will also detect if a variant is better adapted to replicate within a host, or can make people more sick. Researchers will use novel methods to study how the virus evolves, not only in the community, but within a patient over a period of time.

Johns Hopkins University (Collaboration with Yale University School of Public Health, CT)

Virus genomics and human mobility to reveal the patterns of SARS-CoV-2's spread

This genomic epidemiologic study will integrate virus evolution and human behavior on regional and national scales. Revealing SARS-CoV-2 genetic diversity within New England and patterns of virus spread across the region and the country will help assess the effectiveness of intervention strategies for containing SARS-CoV-2.