



Advanced Molecular Detection Academy: Intermediate Bioinformatics training for Microbiologists

April 8– 10, 2025 Atlanta, GA

Sponsored by the Association of Public Health Laboratories *in collaboration with the*
Office of Advanced Molecular Detection, Centers for Disease Control and Prevention

Description

This intermediate-level course will provide bioinformatics training to public health laboratorians with a microbiology background, with a focus on individuals with basic bioinformatic skills and those who work closely with epidemiologic personnel. This training will give the theory and background on next generation sequencing and the fundamental analytical approaches. In addition to the theory, this course will give hands-on experience with some of the common analysis tools. Attendees are expected to complete some prerequisite materials prior to the course.

Objectives

At the conclusion of this course, the participant will be able to:

- Understand and use in practice the basic theory quality management and sequence quality metrics for next generation sequencing for both surveillance and clinical testing.
- Explain sequencing and bioinformatics results to laboratorians and epidemiologists.
- Discuss the strengths and weaknesses of the specific types of tools used for different pathogens and how this can impact interpretation.

Audience

This course is intended for microbiologists who routinely generate and analyze NGS data, have some experience with basic bioinformatic analysis, and work closely with epidemiologic personnel. Participants should have access to at least some of the tools discussed during the course and/or have the infrastructure in place to utilize the tools discussed in this course upon return to the laboratory.

Continuing Education

The Association of Public Health Laboratories (APHL) is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E. Program.

Location

Centers for Disease Control and Prevention,
Atlanta, GA

Security Clearance Requirements

Non-US Citizens - These courses will be held at the training laboratory on the CDC Roybal campus. Due to CDC requirements for security clearance, all non-US citizens will be asked to provide information needed to obtain clearance. Detailed instructions will be provided upon acceptance into the course. Please do not make any non refundable travel plans until you have received confirmation of acceptance into the course and security clearance approval. The information you provide will be used for the purposes of attending this course.

Application and Registration

Application Deadline: December 20th.

- The preliminary [application](#) is to be completed online. Only completed applications received by the deadline will be considered. Application does not guarantee acceptance. If you are unable to complete the application online, email [Christin Hanigan](#) or call 240-485-2748
- Public health applicants must have approval from their state or local laboratory director to apply. Students will be selected according to the degree to which the applicant's job description, experience, and responsibilities are consistent with the prerequisites. Priority will be given for one applicant per public health laboratory, with a second person considered on a space available basis.
- **All costs for this for this workshop including registration, travel support, per diem, housing etc. will be covered by APHL.** Registration and logistical details will be provided upon acceptance into the course.
- Some states have lengthy travel approval processes so begin as soon as possible. Do NOT make travel arrangements until you are notified of acceptance into the course.

Questions?

Contact [Christin Hanigan](#)



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Preliminary Agenda:

Day 1 - Tuesday (April 8th)

Morning:

- Quality Management for NGS
 - Validation, Quality Control, and Benchmarking
- Best Practices for Bioinformatics Analysis and Discussion on Workflow Management

Afternoon:

- Sequencing Technology and Utilization
 - Clinical vs. Surveillance Application
- Introduction to Genomic Epidemiology

Day 2 - Wednesday (Joint Session) (April 9th)

Morning:

- Overview of Sequencing Utilization Across Programs and Pathogens (Tuberculosis, Foodborne, Respiratory, etc.)

Afternoon:

- Definition of Roles and Perspectives of Personnel Involved in Sequencing
 - Discussion on Sequencing and Data Workflows
- Introduction to Data Visualization Tools and Resources

Day 3 - Thursday (Joint Session) (April 10th)

Morning:

- Communication Exercise

Afternoon:

- Tabletop Exercises

Potential Faculty:

- Ariana Miles-Jay, Michigan PHL
- Alexandra Lorentz, Virginia DCLS
- Lee Katz, CDC
- Michael Weigand, CDC
- Jake Garfin, Minnesota PHL
- Brandon Sabina, Massachusetts PHL
- Christopher Jossart, Wisconsin PHL
- Jessica Chen, CDC

Special Needs

In compliance with the Americans with Disabilities Act (ADA), individuals seeking special accommodations should submit their request in writing at least three weeks prior to the start date of the workshop to Christin Hanigan.

Equipment and Software

Participants will need to bring their own laptop computers to participate in hands-on sessions. These computers must:

- Be able to connect to CDC's guest WiFi system and have internet access.
- Have either the Chrome or Safari browser installed. Microsoft's Internet Explorer or Edge browsers will not work with some of the applications.

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