16S rRNA Sequence Based Bacterial Identification

February 22-24, 2017 or May 3-5, 2017 • Atlanta, GA

Sponsored by the National Laboratory Training Network in collaboration with the Bacterial Special Pathogens Branch, Centers for Disease Control and Prevention

DESCRIPTION
This in-depth workshop is intended to build capacity for bacterial identification using 16S rRNA sequencing, Matrix Assisted Laser Desorption Ionization Time of Flight (MALDI-TOF) Mass Spectrometry, and MicrobeNet as tools for state public health laboratories. The training is comprised of didactic lectures and hands-on laboratory exercises covering the procedures from pathogen isolate to identification.

OBJECTIVES
At the conclusion of this program, the participant will be able to:
- Describe the processes and methods involved for sequencing and bacterial identification.
- Prepare and implement DNA sequencing reactions from bacterial cultures in the laboratory.
- Assemble, evaluate, and analyze DNA sequence results.
- Extract protein from bacterial cultures for MALDI-TOF and interpret spectra for identification.
- Incorporate MicrobeNet into the laboratory identification algorithm.

AUDIENCE
This intermediate-level program is intended for public health laboratorians working at the bench in either microbiology or molecular biology laboratories with DNA sequencing capacity.

APPLICATION
Application Deadline: November 28, 2016
- 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 Susan Bailey or phone +1 240.485.2746.
- 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.
- A limited number of seats will be available for this training. Only 10 applicants will be accepted to attend with one applicant per public health laboratory being accepted with a second person considered on a space available basis.
- Notification of acceptance status will be sent via email after December 5, 2016.

REGISTRATION
- Registration for this workshop is being offered at No Charge to the participants! Registration and travel details will be provided upon acceptance into the course.
- APHL will cover all customary economy travel costs (airfare and lodging) and provide a stipend to each qualified participant at the end of the workshop for other travel related expenses (per diem and ground transportation).
- 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.
- This program is funded by the Association of Public Health Laboratories (APHL) with support from the CDC Bacterial Special Pathogens Branch.

The National Laboratory Training Network is a training system sponsored by the Association of Public Health Laboratories (APHL) and the Centers for Disease Control and Prevention (CDC).

For a complete list of courses, visit www.nltn.org/courses.
Course # 588-100_103-17
PRELIMINARY AGENDA

Day 1
February 22, 2017 or May 3, 2017
7:45 a.m. Report to CDC Visitors Center, Building 19
8:15 Pre-Course Test
8:30 Welcome and Introductions
8:40 Introduction and Course Overview
8:50 Lecture: Laboratory Safety
9:00 Lecture: Overview of PCR
9:30 Laboratory: PCR Setup
10:15 Break
10:30 Lecture: Introduction to Bacterial Identification
11:15 Lunch
12:30 p.m. Lecture: MicrobeNet
1:00 Laboratory: PCR Gel and Cleanup
2:00 Laboratory: Sequencing Amplification Setup
3:00 Break
3:15 Lecture: Sequence Assembly and BLAST Example Sequences
3:45 Editing Sample Sequences
5:00 Adjourn

Day 2
February 23, 2017 or May 4, 2017
8:00 a.m. Review Day 1 and Q&A
8:30 Lecture: Sequence Assembly and BLAST
10:00 Break
10:15 Lecture: Microbe Bridge Software Interface
11:00 Lecture: MALDI-TOF in the Clinical Laboratory
11:30 Lunch
1:00 p.m. Lecture: Data Analysis and MicrobeNet
2:00 Laboratory: MALDI-TOF Setup and Run
3:00 Break
3:15 Laboratory: Data Analysis in MicrobeNet
4:30 Adjourn

Day 3
February 24, 2017 or May 5, 2017
8:00 a.m. Review Day 2 and Q&A
8:30 Data Analysis of Lab Sequences
10:00 Break
10:15 Discussion: The Future of MicrobeNet
11:30 Post-Course Test and Evaluation
12:00 p.m. Adjourn

FACULTY
Bacterial Special Pathogens Branch, Division of High Consequence Pathogens and Pathology, CDC
- John McQuiston, Ph.D.
- Anne Whitney, Ph.D.
- Ben Humrighouse, M.S.
- Melissa Ivey, M.S.
- Jessica Pryor
- Jarret Gartin

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 nonrefundable travel plans until you have received confirmation of acceptance into the course and security clearance approval. The information you provide will only be used for the purposes of attending this course.

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 start date of the workshop to APHL Customer Support. For more information phone +1 800.536.6586 or +1 240.485.2746.

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. Participants who successfully complete this program will be awarded 17 contact hours. This course has been approved for 17 contact hours in the category (Microbiology/Mycology/Parasitology) for Florida Laboratory Licensees.

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