

STATE OF SOUTH DAKOTA CLASS SPECIFICATION

Class Title: Senior Microbiologist

Class Code: 40662

Pay Grade: GJ

A. Purpose:

Conducts tests and oversees testing activities in a specialized section of a microbiology laboratory to determine and identify the presence and type of known or unknown pathogenic microorganisms.

B. Distinguishing Feature:

The Senior Microbiologist is responsible for completing, analyzing, and monitoring testing activities in one or more specialized sections of a microbiology laboratory such as quality control for water quality, virology, bacteriology, serology, immunology, parasitology, mycology, food safety, or mycobacteriology; and ensures that proper procedures are followed by coworkers, monitors quality control methods, validates new test procedures, and participates in and/or directs method development.

The Microbiologist follows established procedures for processing specimens and performs assigned analytical tests according to predetermined protocol.

The Laboratory Quality Assurance Coordinator defines, writes, implements, and monitors the quality control system for the laboratory.

C. Functions:

(These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions which may be found in positions of this class.)

1. Performs complex microbiological examinations of various substances to identify known or unknown organisms or viruses.
 - a. Evaluates specimens.
 - b. Selects appropriate test methods.
 - c. Determines test components.
 - d. Performs necessary special procedures to complete testing.
 - e. Observes for and recognizes deviation from expected results.
 - f. Analyzes and solves testing problems utilizing scientific principles.
 - g. Types the organism to assist in treatment or track outbreaks.
 - h. Conducts a drug sensitivity on the organism to assist in the treatment of the patient or animal.
2. Provides consultation and direction to Microbiologists and other laboratory staff to ensure they understand testing requirements and lab safety; and to maintain test quality.
 - a. May direct Microbiologists in performing proficiency sample testing.
 - b. Interprets test results.
 - c. Completes or ensures the completion of documentation.
 - d. Assists in problem solving for absent test results.
 - i. Provides input.
 - ii. Makes suggestions.
3. Directs and participates in test performance to ensure appropriate tests are completed timely.

- a. Determines test priorities and schedules or follows those established by the section.
 - b. Prepares written forms to collect test data.
 - c. Creates computerized files and worksheets to support each test.
4. Directs quality assurance activities in an assigned section of the laboratory to ensure compliance with the quality assurance plan.
 - a. Selects materials and procedures for quality control.
 - b. Directs or performs preventative maintenance procedures.
 - c. Oversees and completes the documentation of quality assurance activities.
 5. Assists in laboratory operations and administration to ensure submitters receive accurate results and the laboratory operates at optimum capability.
 - a. Evaluates new techniques and procedures.
 - b. Compares test methods, analyzes costs, and assists in establishing reference intervals.
 - c. Writes and revises technical procedures.
 - d. Recommends the purchase of supplies and laboratory equipment.
 6. Writes new test procedures to complete required testing, generate laboratory reports, and document test results.
 - a. Names tests.
 - b. Obtains proper codes.
 - c. Determines the desired results of the test.
 - d. Determines quality control standards.
 - e. Interprets test procedures and enters findings into the computer.
 - f. Develops the standard operating procedures (SOP) for the test.
 7. Serves as a reference to other laboratories in the state and ensures compliance with state and federal testing regulations.
 - a. Visits other laboratories.
 - b. Observes procedures, laboratory practices, and laboratory equipment.
 - c. Reviews personal qualifications, sample collection, handling, and preservation.
 - d. Recommends changes for a laboratory to maintain certification.
 8. Performs other work as assigned.

D. Reporting Relationships:

Typically reports to a Health Laboratory Administrator or university faculty and may provide work direction to Microbiologists, Laboratory Technicians, Laboratory Aides, interns, and/or students assigned to the laboratory.

E. Challenges and Problems:

Challenged to complete testing and report results timely. There are a large number of tests that need to be completed and a vast amount of documentation to complete with each test. Another challenge is identifying unusual microorganisms. There is no set rule that works for every microorganism, so the appropriate tests must be selected and the results interpreted.

Typical problems include incomplete specimen forms, samples too old for testing, determining the source of contamination, correct interpretation of rabies testing, no reagents available for a test, repeated test runs continuing to give controls out of range, determining what additional

tests are needed, submitters disagreeing with test results, laboratory instrument and computer failures, missing laboratory reports, informing submitters of correct specimen collection and submission procedures, running more than one test at a time, supervising ongoing research projects, revising and modifying analytical procedures and techniques, cell culture failure, standardization of reagents, and providing timely test results on mycobacteria tests.

F. Decision-making Authority:

Decisions include determining if tests are valid; final test results; scheduling of tests; work assignments of other staff; what supplies to order; safety and accuracy of equipment; whether to repeat tests; when to send tests to other laboratories; how each sample will be treated; the identity of reference specimens; which biochemical will identify an organism; appropriate cell cultures; sources of testing problems; significance of test results; when to contact submitters for additional information or to notify of test results; contacting submitters about new test protocols; what constitutes a borderline result; whether to call service for a piece of laboratory equipment; and informing submitters of current and new specimen rejection policies.

Decisions referred to a superior include whether new tests will be developed; policies and procedures for the laboratory; how to handle controversial test results; resolution of problem cultures; and deviations from policy.

G. Contact with Others:

Daily contact with specimen submitters, doctors, faculty, veterinarians, communicable disease, and regulatory agencies to give results or ask for additional information; occasionally with vendors to receive information of laboratory equipment and supplies; and periodically with other laboratories to verify procedures and to check test results.

H. Working Conditions:

Potential for exposure to blood borne pathogens, body fluids, infectious agents, dangerous chemicals, high voltage equipment, toxic fumes, high-pressure steam, temperature extremes, and radioactive elements.

I. Knowledge, Skills and Abilities:

Knowledge of:

- the methods and techniques of diagnostic laboratory analysis;
- principles of microbiological examinations and biochemistry;
- laboratory quality controls procedures and appropriate statistical methods.

Ability to:

- perform various bacteriological, virological, serological, and parasitological tests and analyses;
- follow specific testing procedures;
- work safely with dangerous and contagious materials and specimens;
- operate scientific equipment and computers;
- perform quality assurance;
- identify reference specimens;
- determine which biochemical will identify a specimen;
- identify and maintain appropriate cell cultures;

- identify species of microorganisms;
- establish and maintain effective working relationships with others;
- perform various tests, adapt techniques as required, and perform complex computations;
- prepare scientifically accurate and thorough reports.