

PART I	DEPARTMENT OF PERSONNEL SERVICES	5.510
	STATE OF HAWAII	5.514
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	Class Specification	5.524
	for the	

MICROBIOLOGIST SERIES

This series includes all classes of positions the duties of which are to supervise and/or perform professional scientific work in the detection, isolation, identification, cultivation, use and control of microorganisms.

Microbiologists work in a laboratory setting involving three basic areas of activity: (1) public health or veterinary medicine; (2) regulation and control; and (3) research.

Public health and veterinary medicine activities involve conducting various tests for the diagnosis and control of diseases caused by pathogenic microorganisms which are communicable to man and to animals. This includes the isolation and identification of microorganisms from tissues, body fluids, excreta or lesions; and determinations of serological and immunological reactions and the determination of antibiotic sensitivities.

Regulatory and control activities involve the testing of such items as water, food, and dairy products, antibiotics, antitoxins, etc., to see that they conform to legal standards, such as those established for purity, potency, and safety. It may also be concerned with the establishment of such standards and with the inspection of production facilities producing biologicals for conformance with approved methods and procedures.

Research involves work in the interest of extending the body of knowledge in the field of microbiology. Responsibility for research of a substantive nature and scope is normally assigned at supervisory and administrative levels.

Microbiologists also provide training to students of microbiology or other related fields and consultation services to various federal, state, and county as well as private agencies.

Microbiologist classes are defined in terms of the nature and scope of responsibilities and the complexity of duties assigned. These are described in relation to the factors of nature and variety or scope of work; supervision received; supervision exercised; originality required; nature and scope of recommendations, decisions, commitments and conclusions; and knowledge and abilities required to perform the work. Each factor is not necessarily significant or pertinent in each class level, or they may be combined in the class specifications to improve the conveying of meaning or for the sake of brevity.

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This is an amendment to the MICROBIOLOGIST SERIES approved on December 20, 1976 due to incorporation of managerial levels in EMCP in accordance with Act 254, SLH 1980.

DATE APPROVED: 9/28/82 /s/ Clement L. Kamalu  
for DONALD BOTELHO  
Director of Personnel Services

MICROBIOLOGIST II

5.510

Duties Summary:

Performs a variety of assignments in the field of microbiology; and performs other related duties as required.

Distinguishing Characteristics:

This class involves the performance of a wide range of laboratory work in accordance with standard techniques and well-defined procedures and policies, under the supervision of a higher-level microbiologist. Initially, assignments are geared to provide experience and training in the application of basic professional knowledge, abilities and in the use of scientific methods, procedures and techniques. Review of work is spot-checked during progress and results are not checked in detail except when reported observations are inconclusive or deviate from those normally expected in a given situation. As employee gains competence, work direction becomes increasingly general and adherence to approved work methods and procedures is expected.

Examples of Duties:

Performs bacteriological, serological, parasitological, mycological, immunological biochemical and other microbiological work; makes diagnostic examinations of fecal specimens, urine, blood, spinal fluid, serum, pus, lesion swabs, throat swabs, respiratory secretions, exudates, transudates, and other body fluids of human and/or animal origin for diseases such as tuberculosis, pneumonia, undulant fever, meningitis, diphtheria, gonorrhea, septicemia, typhoid fever, food poisoning amoebic dysentery, bacillary dysentery, streptococcal and staphylococcal infections; identifies hookworms, tapeworms, and other types of microparasites; makes serologic examination of blood serum and spinal fluid for evidence of syphilis; makes heterophile and febrile agglutination tests for infectious mononucleosis, undulant typhoid and paratyphoid fevers and tularemia; makes microbiological examinations for the sanitary control of

potable water for domestic use; makes microbiological examinations for the sanitary control of beach and swimming pool water for recreational use; makes microbiological examinations of eating, drinking, and food servicing equipment for the sanitary control of public eating places; makes microbiological tests on foods for the presence of food poisoning organisms; makes microbiological examinations of milk, dairy and food products; makes microbiological examinations of sewage and waste products; keeps records, compiles data, and submits reports.

Knowledge and Abilities Required:

Knowledge of: Basic principles and practices of microbiology; fundamental principles of chemistry, physics and related mathematics.

Ability to: Use and care for laboratory equipment and apparatus; apply standard procedures and techniques used in laboratories; perform tests accurately and make tentative conclusions; prepare clear and concise reports of laboratory findings; understand and carry out oral and written instructions.

MICROBIOLOGIST III

5.514

Duties Summary:

Performs the full range of assignments in one or more areas in the field of microbiology; and performs other related duties as required.

Distinguishing Characteristics:

This class involves the independent performance of the full range of microbiological work in one or more areas. Work is performed within a framework of established policies and procedures, but judgment is regularly required in the selection of methods, procedures and techniques and the evaluation of results. Work is performed under the general supervision of a higher level microbiologist who reviews all completed work for technical accuracy and logical evaluation of results. A position at this level may also be assigned to research and investigational projects to carry out major segments under the guidance of a microbiologist in overall charge. A position in this class may direct and oversee the work of lower-level professional or technical personnel as assigned.

Examples of Duties:

Independently performs bacteriological, serological, parasitological, mycological, immunological, biochemical and other microbiological work; makes diagnostic examinations of fecal specimens, urine, blood, spinal fluid, serum, pus, lesion swabs, throat swabs, respiratory secretions, exudates, transudates, and other body fluids of human and/or animal origin for diseases such as tuberculosis, pneumonia, undulant fever, meningitis, diphtheria, gonorrhea, septicemia, typhoid fever, food poisoning, amoebic dysentery, bacillary dysentery, streptococcal and staphylococcal infections; identifies hookworms, tapeworms, and other types of microparasites; makes serologic examination of blood serum, and spinal fluid for evidence of syphilis; makes heterophile and febrile agglutination tests for infectious mononucleosis, undulant typhoid and paratyphoid fevers and tularemia; makes microbiological examinations for the sanitary control of potable water for domestic use; makes microbiological examinations for the sanitary control of beach and swimming pool water for recreational use; makes microbiological examinations of eating, drinking, and food servicing equipment for the sanitary control of public eating places; makes microbiological examinations of milk, dairy and food products; makes microbiological examinations of sewage and waste products; instructs others in performance of laboratory work; evaluates laboratory data; keeps records and makes reports.

Knowledge and Abilities Required:

Knowledge of: In addition to the knowledge required at the next lower level, work at this level requires a general knowledge of the principles and practices of microbiology pertinent to the assigned area or areas.

Ability to: In addition to the abilities required at the next lower level, work at this level requires the ability to apply, adapt, and use the methods, procedures and techniques pertinent to the area or areas assigned, perform tests requiring extreme accuracy and deriving at logical conclusions and to instruct others in the area or areas assigned.

MICROBIOLOGIST IV

5.518

Duties Summary:

Conducts special investigations or research projects in one or more specialized fields of microbiology in a laboratory; and/or supervises and participates in the activity of one or more areas in the field of microbiology; and performs other duties as required.

Distinguishing Characteristics:

Microbiologist IV positions are typically of two general types. The two types are:

1. A position responsible for planning and conducting specialized investigations and/or research projects of an intensive and comprehensive nature. The scope and intensity of the investigations or projects typically require supervising several lower level microbiologists and may include one or more laboratory assistants. Work at this level requires the skillful application, adaptation and modification of methods, procedures, and techniques in solving a wide range of problems or in meeting the needs of many situations pertinent to the investigations or projects assigned.
2. A position responsible for the services required of a small laboratory unit encompassing one or more areas in the field of microbiology. At this level the scope of operation typically requires supervising several lower-level microbiologists and may also include one or more laboratory assistants. Typical assignments in the assigned area or areas of microbiology include the performance of the more difficult and complex tests, examinations, and analyses, the testing and evaluation of commercial materials for acceptability in certain laboratory tests, examinations and analyses, and the modification of laboratory methods, procedures and techniques. Assignments also include maintaining a continual awareness of current, more effective and efficient techniques; and adapting or modifying techniques to suit laboratory needs.

Examples of Duties:

1. Plans, organizes, and performs investigational and/or research activities in one or more specialized fields of microbiology such as virology, veterinary medicine, sanitary microbiology and medical microbiology; discusses with key persons pertinent problems related to the investigational and/or research projects such as the nature, objectives, finances and personnel involved, etc.; draws up and finalizes workable draft including time requirements, costs, space requirement, literature review, equipment and supplies needed, methods and procedures to be applied, the purpose, expected findings, significance of findings to microbiology and public health, etc.; assembles needed equipment, supplies and materials needed for the investigations and/or projects; instructs and directs the activities of personnel assigned to the investigations and/or research projects; develops, adapts, and modifies methods, procedures and techniques as necessary; compiles and analyzes data; submits findings for publication; attends and presents findings in scientific meetings.

2. Plans and organizes the services of a small laboratory unit of one or more areas of microbiology, such as tuberculosis, water, food, serology, hematology, bacteriology, parasitology and mycology and supervises and performs the tests, examinations and analyses required; assigns and reviews the work of other microbiologists and laboratory assistants; reads technical journals and recommends changes in methods, procedures and techniques; assists in the preparation of legal papers for the prosecution of adulterators of food; participates in the supervision of student trainees in laboratory work; performs job performance ratings of subordinates and recommends personnel actions; requisitions and maintains equipment and supplies; assists other laboratories in areas pertaining to specific area or areas assigned; prepares and submits reports.

Knowledge and Abilities Required:

Knowledge of: In addition to the knowledge required at the next lower level, work at this level requires a comprehensive knowledge of the principles and practices of microbiology pertinent to the specialized area or areas; and as required, a knowledge of the principles and practices of supervision.

Ability to: In addition to the abilities required at the next lower level, work at this level requires the ability to recognize a substantial range of microbiological problems and the scientific implications of the problems, the ability to select ways in which microbiological methods, procedures, and techniques can be modified in an assigned area or areas; plan, organize and carry out the work activities assigned, including determining equipment, supply and other needs; analyze, evaluate, draw sound conclusions and prepare and submit results for publication; establish and maintain effective working relationships with others; and as required, the ability to supervise and instruct others.

MICROBIOLOGIST V

5.522

Duties Summary:

Directs and supervises the activities in one or more specialized fields in microbiology in a moderate size laboratory section; or manages and operates a public health laboratory servicing a county-wide jurisdiction; and performs other duties as required.

Distinguishing Characteristics:

Microbiologist V positions are typically of two general types. These are:

1. A position responsible for directing the activities in one or more specialized fields in a moderate size laboratory section. A position in this class includes the maintenance of effective relationships with staff, physicians and/or veterinarians and others regarding services requested and rendered, supervising a staff of four or more microbiologists, and carrying out various activities for effective management of the laboratory such as, seeing that adequate supply levels are maintained, recommending equipment purchases and setting priorities of assignments.
2. A position responsible for the management and operation of a public health laboratory servicing a county-wide jurisdiction such as in Maui, Hawaii and Kauai, under the administrative direction of the District Health Officer. Technical guidance and direction is obtained from the Microbiologist VII or other designates in the central laboratory located on Oahu. In addition to performing the various tests and analyses in the laboratory, a position in this class carries out the various activities for effective management of the laboratory such as budget estimating, maintaining adequate supplies, and recommending equipment purchases. positions at this level include supervising lower level microbiologists, laboratory assistants and other related personnel.

Examples of Duties:

Plans, coordinates, directs and supervises the activities in a moderate size laboratory section; assigns and reviews work of staff; participates in interviews and selection of new employees; prepares efficiency reports for employees of the laboratory; prepares or supervises the preparation of daily reports to physicians and/or veterinarians, institutions and other agencies; prepares monthly and annual reports of the activities of the laboratory; conducts surveys and investigational studies; conducts in-service training and orientation programs for students, trainees, new employees and other personnel from the Peace Corps, East-West Center, University, hospitals, and other institutions or agencies; tests and evaluates the performance of other laboratories to qualify for premarital, prenatal, milk and other certificates; reads technical journals and attends special training programs to keep abreast of developments in the field; recommends changes in laboratory methods, procedures and techniques; attends and participates in scientific meetings.

Knowledge and Abilities Required:

Knowledge of: In addition to the knowledge required at the next lower level, work at this level requires a knowledge of the trends in microbiology pertinent to the assigned field of microbiology and a knowledge of the principles and practices of supervision.

Ability to: In addition to the abilities required at the next lower level, work at this level requires the ability to plan, organize, direct, and evaluate the work of others;

organize and conduct in-service training programs and prepare operational reports; maintain effective relationships with members of the medical community and others.

MICROBIOLOGIST VI

5.524

Duties Summary:

Directs the activities in one or more specialized fields in microbiology in a large laboratory section; and performs other duties as required.

Distinguishing Characteristics:

This class involves responsibility for directing, through subordinate Microbiologist supervisors, the activities in one or more specialized fields in microbiology in a large laboratory.

Examples of Duties:

Plans, organizes, directs and coordinates the activities in one or more specialized fields in a large laboratory, providing microbiological services in a variety of specialized areas; assigns and makes final review of the work of the staff for accuracy and completeness of analysis and examination reports prior to their transmission to physicians, hospitals or private laboratories, or federal, state or other agencies; reports unusual laboratory findings which may affect the health and welfare of the community to the supervisor and other personnel for appropriate action; evaluates the work of employees; plans and conducts orientation and in-service training programs for students, trainees, new employees, neighbor island microbiologists, and other personnel from the Peace Corps, East-West Center, University, hospitals, and other similar institutions and agencies; provides consultative or informational services on various aspects of the laboratory work such as methods and techniques applied, significance of laboratory findings, materials and equipment used, to physicians and/or veterinarians, hospital and private laboratory technologists, federal, state and other agency personnel; evaluates the performance of other laboratories on a statewide basis on certain tests, and recommends annual certificates upon satisfactory evaluation; prepares and submits appropriate reports of the activities of the laboratory; conducts staff meetings; interviews and recommends selections of new employees in the laboratory; makes recommendations for promotions on disciplinary actions for employees in the laboratory; may perform various microbiological work; may testify in court proceedings on laboratory findings; keeps abreast of developments in the assigned specialized fields of microbiology; attends and participates in scientific meetings.

Knowledge and Abilities Required:

Knowledge of: In addition to the knowledge required at the next lower level, work at this level requires a comprehensive knowledge of one or more specialized fields in the assigned field of microbiology.

Ability to: In addition to the abilities required at the next lower level, work at this level requires the ability to direct the activities, through subordinate supervising microbiologists, the activities in one or more specialized fields in microbiology in a large laboratory.