

**A. MAJOR DUTIES**

Typical, but not all-inclusive, duties are illustrated by performance of any combination of the following:

Performs a wide range of duties designed to solve complex microbiological research problems.

Determines proper experimental approach.

Independently selects and carries out measurements and analyses by applying established or modified methods; performs difficult nonstandard tests and assays.

Evaluates data and performs appropriate calculations and analyses.

Actively participates in the modification of existing methods of analysis or the development of new techniques in order to improve accuracy and efficiency or to overcome difficulties in dealing with specific systems or microorganisms.

Searches scientific literature for principles, methods, and procedures and selects the most appropriate for the research goals and fiscal resources.

Maintains official laboratory notebooks, recording methods and procedures used, any procedural modifications, observations, and results obtained.

Participates in the preparation of data for scientific technical reports and manuscripts.

Analyzes the results according to established principles.

Modifies methods, if necessary, to solve problems or make improvements.

Writes periodic laboratory reports including discussion on experimental design, principle, procedure, and results.

Evaluates the adequacy of the results for meeting objectives.

Summarizes experimental results of completed projects in the form suitable as the basis for the first draft of written reports to scientific journals.

Organizes experimental progress in the form suitable for oral presentation or posters for scientific meetings.

Undertakes routine care, maintenance, and calibration of moderately complex laboratory instruments, e.g. centrifuges, HPLC instrument.

Provides proper technical advice, when needed, to lower level support personnel assigned to research programs in the unit.

Keeps abreast of current scientific advancement by reading literature, review articles, and attending supervisor approved meetings, workshops, and conferences.

## **B. EVALUATION FACTORS**

### **1. Knowledge Required by the Position (FL 1-7: 1,250 points)**

Broad professional knowledge of the scientific theories and principles which underlie microbiology, molecular biology, chemistry and physics as they apply to microbiology.

Advanced knowledge of the microbiological methods, procedures, and techniques which are applied in the general area or field of microbiology involved.

Skill in calibrating, maintaining, operating, and modifying moderately complex analytical instruments to independently perform measurements, analyses, and interpretation.

Skill in obtaining accurate and valid results when analyzing and characterizing components and documenting results.

Skill in evaluating established methods and making proper modifications.

Ability to recognize complex microbiological problems and their scientific implications.

Ability to select ways in which microbiological methods, procedures, and techniques can be applied, adapted, or modified to solve these problems.

Ability to employ this methodology skillfully and with precision to a number of different work situations.

Ability to make refined observations, interpret their microbiological implications, and make accurate and precise reports on the results of these observations.

### **2. Supervisory Controls (FLD 2-4: 450 points)**

The supervisor sets the overall objectives and resources available. The incumbent and supervisor, in consultation, develop the deadlines, projects, and work to be done.

Incumbent plans and carries out the assignment; resolves most of the conflicts which arise, coordinates the work with others as necessary; and interprets policy on own initiative in terms of established objectives. The incumbent keeps the supervisor informed of progress, potentially controversial matters, or far-reaching implications.

Completed work is reviewed only from an overall standpoint in terms of feasibility, compatibility with other work, or effectiveness in meeting requirements or expected results.

Work methods involved in implementing new procedures are discussed and completed work is reviewed to see that it generally conforms to established practices and procedure and may be checked periodically to see that it is technically accurate.

**3. Guidelines (FLD 3-3: 275 points)**

Guidelines include methodologies, manuals, technical references, and precedent investigations that are not always directly applicable to the work.

The employee uses a high degree of judgment in selecting the most appropriate guides and references to apply to each problem. The employee evaluates results and recommends changes to specific problems.

**4. Complexity (FLD 4-3: 150 points)**

The work involves a variety of different and unrelated complex methods and procedures, whether established or modified, to prepare biological materials and obtain needed biochemical and biophysical information for defined objectives.

Incumbent will need to select methods and procedures which depend on the identity of the sample, its physical state, and objectives to be determined. Assignments normally require the application of established methods and procedures with proper modifications.

In planning and completing the work, the incumbent must produce the data, analyze and interpret the results, draw conclusions and report the findings.

**5. Scope and Effect (FLD 5-3: 150 points)**

The work involves performance and development of specific experiments, analyses and measurements in support of the research project objectives.

The results of the work affect the scientific adequacy and accuracy of the research project and impact on the research reputation of the organization.

**6. Personal Contacts and  
7. Purpose of Contacts (FLD 2b: 75 points)**

Personal contacts are primarily with scientists within the location. Contact with scientists outside the location may often be required.

Contacts are for the purpose of obtaining, clarifying, or exchanging information regarding theoretical and problematic solutions to the experimental designs and methods,

plan and coordinate the work, receive instructions and report progress and results of work.

**8. Physical Demands (FLD 8-2: 20 points)**

The work sometimes requires standing for prolonged periods of time.

**9. Work Environment (FLD 9-2: 20 points)**

Work is performed primarily in a laboratory. Incumbent is exposed to irritant chemicals on an irregular basis; on such occasions, special safety precautions are required and the microbiologist uses protective clothing and gear such as laboratory coat, safety glasses and gloves.

**C. OTHER CONSIDERATIONS (Check if applicable)**

- Supervisory Responsibilities (EEO Statement)
- Training Activities - Career Intern, Student Career Experience Program
- Motor Vehicle or Commercial Driver's License Required
- Pesticide Applicators License Required
- Safety/Radiological Safety Collateral Duties
- EEO Collateral Duties
- Drug Test Required
- Vaccine(s) Required
- Financial Disclosure Required
- Special Physical Requirements/Demands
- Other:

TOTAL POINTS: 2,390 points  
(GS-11 Range: 2,355 - 2,750 points)

September 26, 1996