RESEARCH SPECIALIST

Schematic Code 12502 (30005043)

I. DESCRIPTION OF WORK

Positions in this banded class plan, develop, conduct and evaluate scientific research in a laboratory, clinic, field and/or teaching environment (hereafter referred to as “laboratory”). Employees in these positions understand the context and implications of the research in order to apply and interpret theoretical knowledge necessary to conduct research in one or more scientific disciplines. The range of duties includes, but is not limited to: project planning, experimental design, developing methodology, conducting procedures, modifying procedures as needed, data collection and analysis, laboratory management, project management, preparing publications and reports, and communication and instruction. Employees demonstrate and model effective mental concentration, visual attention and manipulative skills. Work may include the training and supervision of staff, students and others in performing specific techniques or phases of experiments.

II. ROLE DESCRIPTIONS BY COMPETENCY LEVEL

Contributing	Journey	Advanced
Positions at this level perform complex experiments according to outlined procedures and techniques in a research laboratory. They are responsible for planning methods and techniques of physical, chemical, or biological tests, conducting procedures, recording results, and assisting in the interpretation of data for a particular experiment or closely related series of experiments. Work requires the exercise of judgment and a basic theoretical knowledge of the applicable science. Work is guided by a general outline developed by the researcher. Work may include coordinating laboratory facility, equipment and supplies. Work may include coordinating and/or supervising the activities of others.	Positions at this level perform complex experiments requiring adaptation and modification of existing procedures in a research laboratory. Positions are responsible for developing research plans, reading literature relating to procedures, modifying and adapting procedures to suit particular project objectives, conducting the experiment, recording, and analyzing and interpreting data. Positions may initiate minor deviations in experimental design as necessary. Work may include training and supervision of others.	Positions at this level plan, develop and implement original experimental procedures in a research laboratory. Positions are responsible for interpreting previous experiments in order to develop an original procedure or technique applicable to the project objective, conducting all aspects of the experiment, making deductions from data, and preparing detailed findings on research results. Positions may perform administrative work in directing programs and projects in multiple locations.

III. COMPETENCIES

Competency	Definition
Knowledge – Professional/Scientific	Achieves a high level of professional/scientific skill or knowledge in specific area(s) and keeps up with current developments and trends in area(s) of expertise. Knowledge of the scientific principles, methods and processes (technical and/or theoretical) used to conduct a systematic and objective inquiry including study design, methods of data collection and analysis, and interpreting and reporting results; ability to operate instruments and equipment; knowledge of related information technology.
Research Design	Ability to identify and develop research objectives, methods and quality control measures based on literature searches; ability to plan methods and techniques to meet research objectives; may require ability to modify and/or refine procedures, methods and techniques as needed; ability to identify and plan for research project resources and methods of data collection.
Conducting Experiments/Procedures	Ability to perform tests, procedures and experiments applying specialized skills, knowledge and equipment; ability to modify and refine techniques and procedures to meet research objectives; ability to manage multiple, concurrent projects or a multi-faceted project.
Data Analysis	Ability to perform statistical analysis; ability to interpret and evaluate results; ability to prepare reports and/or presentations; ability to monitor and collect research data to assess accuracy, validity, and integrity.
Laboratory Management	Ability to provide oversight of technical programs and administrative activities in a research setting - research laboratories and/or agricultural research stations including quality assurance and safety programs; ability to coordinate and manage facilities, equipment, supplies and related resources; ability to monitor environmental risks and quality control; ability to understand and comply with safety standards to maintain a safe environment.
Communication	Ability to clearly and concisely convey information verbally and in written form; ability to effectively present ideas to individuals or groups to ensure that they understand the information and message. Ability to present research results and summaries; ability to adhere to reporting requirements of research project(s); ability to contribute to the writing of publications and reports.
Instruction	Ability to instruct and train staff, students, faculty and/or other clients in the performance of procedures and operation of equipment.

Note: Not all competencies apply to every position/employee; evaluate only those that apply. Competency statements are progressive.

IV. COMPETENCY STATEMENTS BY LEVEL

Knowledge – Professional/Scientific

Achieves a high level of professional/scientific skill or knowledge in specific area(s) and keeps up with current developments and trends in area(s) of expertise. Knowledge of the scientific principles, methods and processes (technical and/or theoretical) used to conduct a systematic and objective inquiry including study design, methods of data collection and analysis, and interpreting and reporting results; ability to operate instruments and equipment; knowledge of related information technology.

Contributing	Journey	Advanced
Knowledge of research and regulatory standards to maintain a laboratory environment. Knowledge and ability to conduct scientific literature reviews. Knowledge of scientific principles to conduct research process; knowledge of laboratory instruments and equipment.	Knowledge and ability to adapt work process and methods based on findings and literature review with limited supervision. Knowledge of scientific principles to modify procedures in response to changing conditions; knowledge of and skill in operating highly-specialized instruments and/or equipment.	Knowledge and ability to independently adapt work process and methods based on findings and literature review; may contribute new knowledge and/or techniques. Knowledge and analytical skills to design, monitor and modify the research process. Knowledge of other scientific areas and related research.

Definitions:
Process - work involving a number of steps and/or operations.
Procedure - method or manner chosen

Research Design

Ability to identify and develop research objectives, methods and quality control measures based on literature searches; ability to plan methods and techniques to meet research objectives; may require ability to modify and/or refine procedures, methods and techniques as needed; ability to identify and plan for research project resources and methods of data collection.

Contributing	Journey	Advanced
Ability to search literature demonstrating an understanding of scientific, experimental and/or research theory to assist in the design of methods, procedures and/or techniques. Ability to identify data to be collected and documented. Ability to identify resources needed to conduct experiments. Ability to monitor and report quality control measures.	Ability to use the research literature to design detailed experimental methods, procedures and/or techniques. Ability to identify data collection methodology. Ability to plan and document resources needed to conduct experiments. Ability to prepare/assist in research project budget(s). Ability to assist in designing quality control measures.	Ability to expand scope of literature search to support and/or propose alternative experimental methods, procedures and/or techniques. Ability to collaborate with others to plan and design data collection, technology and analysis (for example, statistical analysis software). Ability to modify and adjust resources needed to conduct experiments. Ability to gather information to prepare budget and propose estimates for acquisition of supplies and equipment. Ability to plan and design specific quality control measures and procedures as part of research protocol.

Conducting Experiments/Procedures

Ability to performs tests, procedures and experiments applying specialized skills, knowledge and equipment; ability to modify and refine techniques and procedures to meet research objectives; ability to manage multiple, concurrent projects or a multi-faceted project.

Contributing	Journey	Advanced
Ability to conduct tests, experiments, and/or procedures following standard protocol; ability to identify and document variations that may affect the validity of the experiment. Ability to master basic proficiency of a specialized technique or procedure.	Ability to identify problems, troubleshoot and analyze variations observed and reported in regular testing protocols; ability to modify, refine or adapt techniques and procedures; ability to modify and/or adjust quality control measures. Ability to coordinate multiple, concurrent assignments or a multi-faceted project. Ability to serve as an expert in conducting a specialized technique(s) or procedure(s).	Ability to analyze and resolve variations in complex tests, experiments and procedures; ability to design and implement modifications and changes to techniques, procedures and quality control measures. Ability to propose alternative research methods, techniques and initiatives. Ability to lead multiple, concurrent projects and/or multi-faceted projects; ability to direct others in making modifications. Ability to serve as an expert in a specialized area of research to influence research conclusions.

Definitions:
Test - a procedure in which the outcome is measured under various conditions.
Procedure - a sequence of actions that collectively accomplishes some desired task.
Experiment - the test of an hypothesis under controlled conditions.
Technique - a way of using skills to carry out a scientific operation.

Data Analysis

Ability to performs statistical analysis; ability to interpret and evaluate results; ability to prepare reports and/or presentations; ability to monitor and collect research data to assess accuracy, validity, and integrity.

Contributing	Journey	Advanced
Ability to monitor and collect data as required by research protocol. Ability to maintain appropriate documentation of research results, as required by research protocol. Ability to recommend revisions to experimental methods based upon observations. Ability to assist in preparation of research findings; ability to prepare reports. Ability to collect information for grant writing and reporting.	Ability to collect and analyze data for accuracy, validity and integrity. Ability to monitor documentation of results; ability to review and recognizes documentation which may lead to modification and adaptation of research methodologies; may require ability to collaborate with others. Ability to adapt and/or modify experimental methods based upon interpretation of data. Ability to contribute to preparation of publications and/or reports; ability to make presentations within department and/or at professional conferences. Ability to assist in grant writing and proposal development.	Ability to define standards for the collection of data; ability to set standards for accuracy, validity and integrity; ability to lead others in analysis. Ability to evaluate documentation of results; ability to lead efforts to modify and adapt research methodologies in collaboration with others; ability to ensure compliance with regulatory standards. Ability to adapt experimental design based upon interpretation of data and/or literature review, in collaboration with others. Ability to co-author/author manuscripts and publications; ability to serve as primary presenter within department and/or at professional conferences. Ability to collaborate in the conception and design of original research; ability to write grants and proposals.

Laboratory Management

Ability to provide oversight of technical programs and administrative activities in a research setting - research laboratories and/or agricultural research stations including quality assurance and safety programs; ability to coordinate and manage facilities, equipment, supplies and related resources; ability to monitor environmental risks and quality control; ability to understand and comply with safety standards to maintain a safe environment.

Contributing	Journey	Advanced
Ability to maintain laboratory resources including supplies, equipment and facilities. Ability to understand and execute quality assurance. Ability to comply with safety measures and guidelines including those related to hazardous waste/materials.	Ability to plan and monitor resources needed to operate the laboratory; ability to maintain inventory control; ability to coordinate space, field, equipment and/or facilities; may require ability to monitor expenditures. Ability to evaluate and modify quality assurance procedures. Ability to coordinate and train others to ensure compliance with safety measures and guidelines including those related to hazardous waste/materials.	Ability to manage laboratory resources including budget and personnel; ability to establish priorities in the use of resources including space, field, equipment and/or facilities. Ability to manage quality assurance program. Ability to manage compliance with safety measures and guidelines including those related to hazardous waste/materials.

Communication

Ability to clearly and concisely conveys information verbally and in written form; ability to effectively present ideas to individuals or groups to ensure that they understand the information and message. Ability to present research results and summaries; ability to adhere to reporting requirements of research project(s); ability to contribute to the writing of publications and reports.

Contributing	Journey	Advanced
Ability to communicate detailed outcomes and results of research in oral and written format. Ability to assist in preparation of research findings; ability to prepare reports. Ability to collect information for grant writing and reporting.	Ability to lead exchange of research information through demonstration and instruction. Ability to contribute to preparation of publications and/or reports; ability to make presentations within department and/or at professional conferences. Ability to assist in grant writing and proposal development.	Ability to lead, consult and make recommendations in the area of research through effective communication about the research project(s). Ability to co-author/author manuscripts and publications; ability to serve as primary presenter within department and/or at professional conferences. Ability to collaborate in the conception and design of original research; ability to write grants and proposals.

Instruction

Ability to instruct and train staff, students, faculty and/or other clients in the performance of procedures and operation of equipment.

Contributing	Journey	Advanced
Ability to train others in laboratory techniques and the use of laboratory equipment. Ability to document how to conduct procedures; review and maintain correct standard operations, procedures and protocols.	Ability to train others in the performance of complex tests and procedures and the proper use and care of specialized equipment. Ability to document experimental processes and results in reports and/or publications.	Ability to develop and coordinate instruction of others in the operation of specialized equipment and/or research techniques. Ability to collaborate with research staff and colleagues to validate and/or redirect research based on documented results.

V. MINIMUM TRAINING & EXPERIENCE

Bachelor's degree in a discipline related to the area of assignment; or equivalent combination of training and experience. All degrees must be received from appropriately accredited institutions.

Optional Guidelines:
Contributing: 4 year degree; or an equivalent combination of training and/or related experience.
Journey: 4 year degree + 1 year of directly related experience; or an equivalent combination of training and/or related experience.
Advanced: 4 year degree + 3 years of directly related experience; or an equivalent combination of training and/or related experience.

Note: This is a generalized representation of positions in this class and is not intended to identify essential work functions per ADA. Examples of competencies are primarily those of the majority of positions in this class, but may not be applicable to all positions.