

## RESEARCH TECHNOLOGIST SERIES

<b>Spec. Code</b>	<b>Class Title</b>	<b>Occ. Area</b>	<b>Work Area</b>	<b>Prob. Period</b>	<b>Effective Date</b>
4524	Research Technologist I	02	446	6 mo.	10/15/04
4525	Research Technologist II	02	446	6 mo.	10/15/04
4526	Research Technologist Manager	02	446	6 mo.	10/15/04

*Promotional Line: ???*

### Series Narrative

This series includes positions which involve performing, supervising, or directing routine and advanced, non-standardized technical laboratory work which supports a variety of research disciplines, such as biological, chemical, and/or medical research (in such areas as immunology, virology, pharmacology, toxicology, physiology, microbiology, or biochemistry). Employees may perform laboratory work in any one or a combination of these areas. Employees set up and conduct both original and standard experiments, including biological assays and quantitative and qualitative analyses related to the evaluation and development of materials and techniques as defined by the designated research program. Employees in these positions may perform instrumental analyses for departmental research projects, maintain departmental instrumentation in operating condition, and instruct faculty, staff, graduate students, and undergraduate research students in its use. The work requires the exercise of a high degree of professional judgment in in such areas as the designation of valid data and the determination of causes for irregular findings. For those research projects associated with animal subjects, employees are required to follow procedures that are consistent with Institutional Animal Care and Use Committee (IACUC) or similar standards. The work requires training in one of the biological, chemical, and/or medical sciences or a closely related field.

### DESCRIPTIONS OF LEVELS OF WORK

#### **Level I: Research Technologist I**

**4524**

Employees conduct experiments in the development and/or analysis of chemical, biological, or related materials and techniques as defined by the specific research program. The work involves the application of standard tests and procedures.

A Research Technologist I typically

1. performs a variety of standard tests and procedures, including biological assays and quantitative and qualitative analyses.
2. using detailed instructions covering specific methodology, sets up and conducts new or modified tests and experiments with responsibility for locating and reporting test deficiencies.
3. applies appropriate quality controls to insure validity and reliability of results; identifies results which exceed recommended or desired tolerances.
4. maintains exact mathematical records of test results; prepares statistical charts reflecting test ratios, distribution and progression curves, and other data; may have data entry component.
5. assists in ordering and maintaining laboratory supplies and equipment.

6. assists with animal procedures (i.e. surgery, collection and appropriate handling of specimens such as blood and tissue, post mortem examinations, etc.), consistent with IACUC or equivalent standards.
7. assists with demonstration of laboratory and/or specific research techniques and procedures to students and other personnel.
8. assists in maintaining departmental instrumentation in operating condition and supervises lower level laboratory personnel in the maintenance and preparation of laboratory materials and equipment.
9. performs related duties as assigned .

**Level II: Research Technologist II****4525**

Employees at this level exercise a considerable degree of independence in conducting experiments requiring expertise in the application and adaptation of numerous research techniques and procedures to produce desired results. For example, employees frequently alter independent variables, sometimes in rather fine degrees, and determine whether discernible and desired changes occur in the object of study. Employees at this level may manage scientific laboratories, supervise the use of laboratory equipment by students and staff, set up new equipment and train users, and update instrument software on a regular basis. Employees at this level also supervise lower level technologists, usually engaged in the same research project.

A Research Technologist II typically:

1. sets up, conducts, adapts, and correlates complex tests and experiments which require further development before implementation; evaluates adequacy of techniques and procedures under consideration by observing pertinent reactions and comparing results to test objectives.
2. performs animal procedures (i.e. surgery, collection and appropriate handling of specimens such as blood and tissue, post mortem examinations, etc.), consistent with IACUC or equivalent standards.
3. based on project objectives, recommends revision of methodology based upon evaluation of accumulated data.
4. reviews scientific literature and abstracts applicable method papers for possible inclusion in current research project.
5. monitors and maintains an appropriate quality control program consistent with institutional guidelines and/or regulations
6. collects relevant mathematical results and prepares tables, charts, and graphs reflecting the relationship of multiple tests and their respective results.
7. may co-author research papers.
8. instructs and trains students and other personnel in specific area of research conducted.
9. trains and supervises lower level technologists and other personnel in use and care of laboratory equipment, as assigned.
10. orders and maintains laboratory supplies and equipment.

11. performs work related to the next lower level of this series.
12. performs related duties as assigned.

**Level III: Research Technologist Manager****4526**

Employees at this level function as the senior technical assistant to the faculty supervisor administering a designated chemical, biological, and/or medical research program. As such, employees assist in the development and implementation of research projects and in the interpretation of intermediate and final results. Employees supervise subordinate personnel in all phases of major research projects.

A Research Technologist Manager typically:

1. serves as technical consultant and coordinator of a major research project by assisting in the development of research objectives, the determination of variety and depth of control/experimental tests and procedures, and the integration of diverse phases of laboratory experiments to assure optimal utilization of manpower and equipment.
2. performs initial analysis and interpretation of test results; designates valid test data; in conjunction with supervisor, assigns a theoretical relationship to other research findings within the project, and assists in the development of sequential experimentation by evaluating relevant material abstracted from scientific journals and other sources.
3. develops and initiates quality control methodology; revises established tolerances as necessary or desirable.
4. conducts advanced stages of experimentation which require the application of methods and procedures for which precedents may not exist.
5. assists faculty supervisor in formulating manuscript premises based on interpretation of experimental data, may co-author research papers.
6. evaluates new techniques, equipment, etc. and assists in the decision as to their appropriateness to departmental research; supervises ordering and maintenance of laboratory supplies and equipment.
7. supervises lower level technicians in performing animal procedures (i.e. surgery, collection of specimens such as blood and tissue, post mortem examinations, etc.), consistent with IACUC or equivalent standards.
8. supervises personnel in performance of research and general laboratory duties; assigns work and evaluates employees' performance.
9. provides professional guidance to staff and students to improve research skills and to increase understanding of techniques and procedures utilized; may instruct personnel in more advanced aspects of research project.
10. may serve as contact person, maintain appropriate records, and assist students and staff regarding compliance to directives from the Center for Environmental Health and Safety.
11. performs work related to the next lower level of this series.
12. performs related duties as assigned.

**MINIMUM ACCEPTABLE QUALIFICATIONS REQUIRED FOR ENTRY INTO:**

**Level I: Research Technologist I****4525**

## CREDENTIALS TO BE VERIFIED BY PLACEMENT OFFICER

1. Bachelor's Degree in biological, chemical, or medical sciences, (such as biology, pharmacology/toxicology, microbiology, chemistry, nutrition, physiology, or medical technology) or a closely related field

## PERSONAL ATTRIBUTES NEEDED TO UNDERTAKE JOB:

1. ability to understand and follow complex technical instructions
2. knowledge related to the specified field of research
3. knowledge of safety and quality control practices and procedures
4. ability to interpret, audit, summarize, and present complex data both accurately and thoroughly

**Level II: Research Technologist II****4525**

## CREDENTIALS TO BE VERIFIED BY PLACEMENT OFFICER

1. Bachelor's Degree in biological, chemical, or medical sciences, (such as biology, pharmacology/toxicology, microbiology, chemistry, nutrition, physiology, or medical technology) or a closely related field

AND

one year of experience comparable to that gained as a Research Technologist I

OR

Master's Degree in biological, chemical, medical sciences, or a closely related field (such as biology, microbiology, chemistry, physiology, or medical technology) or a closely related field

## PERSONAL ATTRIBUTES NEEDED TO UNDERTAKE JOB:

1. knowledge and ability to implement safety and quality control practices and procedures
2. ability to read, interpret, and explain to lower level employees complicated plans and specifications
3. ability to maintain good working relationships with other technical personnel
4. ability to interpret, audit, summarize, and present complex data both accurately and thoroughly

5. supervisory ability

**Level III: Research Technologist Manager****4526****CREDENTIALS TO BE VERIFIED BY PLACEMENT OFFICER**

1. Bachelor's Degree or higher in biological, chemical, or medical sciences, (such as biology, pharmacology/toxicology, microbiology, chemistry, nutrition, physiology, or medical technology) or a closely related field
2. Six months of experience comparable to that gained as a Research Technologist II
3. Six months of Research Technologist experience which were spent in a supervisory or team leader capacity

**PERSONAL ATTRIBUTES NEEDED TO UNDERTAKE JOB:**

1. ability to train, supervise, evaluate, and discipline personnel
2. ability to organize, assign, and direct work of lower level employees
3. higher level knowledge associated with specific area of research
4. knowledge and ability to implement and supervise others in the implementation of safety and quality control practices and procedures
6. ability to read, interpret, and explain to lower level employees complicated plans and specifications
7. ability to maintain good working relationships with other technical personnel