

ELECTRON MICROSCOPY SHARED RESOURCE LAB MANAGER

Job Code: 2912

FLSA: E

Job Level: 14

Revised Date: 08/08/2021

Job Family: JF 05

Summary

Manage and direct an EM core resource that provides clinical and technical related microscopy services to Duke Medical Center and other research groups. Ensure exceptional service to the research community in a timely, economical, and efficient manner. Ensure specialized laboratory techniques with impeccable documentation and work standards. Perform any/all methods for producing data/results and interact with investigators to advise on best practices and interpret results.

Work Performed

I. Be responsible for the scientific output of the Electron Microscopy Laboratory by managing research specialists and technicians, by performing all of the different types of procedures (including reagent preparation, specimen processing, and microscope maintenance), and by determining the best method(s) for each project, in consultation with the director. That is to say, design, develop, and execute all procedures related to preparation of specimens, production of results, and recording of data (microscopy).

II. Ensure that the scientific data produced in the laboratory is sound by communicating with the director, experts in the field, and principal investigators and by managing the users. Inform the director of different or unusual types of projects so that the collaboration can produce the most logical and most likely to yield excellent results.

III. Perform specimen preparation and online research to determine the best procedures to use for different projects. Lead the development and optimization of assays and procedures and work with the director to improve and optimize protocols and standard operating procedures. Train and instruct research staff and students. Direct day-to-day activities of staff/students as well as the project management goals of the facility. Teach students to use the laboratory and instruments in such a thorough way as to ensure proper care of expensive equipment and reagents. Ensure that all staff/students perform duties in compliance with SOPs.

IV. Interact with principal investigators and users. Locate appropriate scientific literature necessary to design the experimental framework for clinical research to be able to advise users. Utilize effective project and resource management needed for successful operation and exceptional service. Teach and supervise graduate and postdoctoral students,

residents, and faculty the use of instruments and help them interpret their data. Work with principal investigators and the laboratory director to coordinate and direct 2-D and 3-D EM, ensuring that the experiments are designed appropriately and that samples are submitted in the best possible form for obtaining desired data. Monitor progress of projects and coordinate with the director to stay on budget and schedule for delivery of data. Facilitate collaborations/interactions with other scientific teams and other collaborators/subcontractors.

V. Handle new types of material. Research new methods from the literature or from colleagues in the field for use in investigating new projects. Not only does the processing of unusual and minute tissues require precise skills, it may require figuring out how to handle and keep track of them during processing. The completion and analysis of the project require knowledge of what the normal ultrastructure looks like and how mutation or treatment of the experimental system is altered by manipulation and changes the appearance. Help interpret structures and analyze and manage data. Be involved in the project and able to advise on designing, evaluating, and modifying research. We use methods newly required for processing data to render images into 3-dimensional (3-D) pictures. The number of ultrathin (50-60 nanometers thick) sections is in the hundreds, and the amount of data is massive. The computer programs for rendering the single micrographs are complicated and require months of study to be able to use them. The lab manager directs these projects and designs the experiments to obtain the large data sets that the investigators want. Summarize completed studies and write scientific articles for publication.

VI. Keep the records up to date with respect to accuracy, reproducibility, and recording of all identifiers and procedures performed on each project. Keep records of instrument service and maintain instruments both by performing routine maintenance and by recognizing problems that require a service engineer.

VII. Maintain the laboratory functionality by replenishing stock solutions, ordering chemicals and small equipment and instruments, and keeping the laboratory and instruments clean and aligned or functional.

VIII. Help develop and manage annual operating budgets for the facility in collaboration with the director. Serve in a financial management role for the facility by supplying financial data on supplies and maintenance costs, user fees received, and computer software and hardware for budgeting purposes. Provide information on research types and needs of each project. Provide information as needed for various grant and university reports. Write scientific publications and assist clients with publications.

IX. Perform other related duties incidental to the work described herein. The above statements describe the **general nature** and level of work being performed by individuals assigned to this classification. This is **not intended to be an exhaustive list** of all responsibilities and duties required of personnel so classified.

Required Qualifications at this Level

Education/Training: Bachelor of Science in a science field such as biology, chemistry, cell biology, microbiology, animal science, or other biological science required.

Masters or PhD preferred.

Experience: 5 to 7 years of related Lab Research Analysis.

Ability to communicate clearly in oral and written form.

Ability to work with information systems, automated and technical equipment.

OR AN EQUIVALENT COMBINATION OF RELEVANT EDUCATION AND/OR EXPERIENCE

Skills: Background in electron microscopy.

Excellent interpersonal skills and experience working with scientific collaborators.

Proficient in typing and in writing English compositions.

The intent of this job description is to provide a representative sample of the types of duties and responsibilities that will be required of positions given this title and **shall not be construed as a declaration of the total of the specific duties and responsibilities of any particular position. Employees may be directed to perform job-related tasks other than those specifically presented in this description.**

Essential Physical Job Functions

Certain jobs at Duke University and Duke University Health System may include essential job functions that require specific physical and/or mental abilities. Additional information and provision for requests for reasonable accommodation will be provided by each hiring department.