

position description

Date: October 2021

Title: Research Assistant 2, Functional Genomics

Department: Genetics and Genome Sciences

School: Medicine

Location: BRB

Supervisor Name and Title: Professor Ann Harris

POSITION OBJECTIVE

Working under general supervision, the Research Assistant 2 will plan and carry out molecular and cell biology research projects in accordance with general plans. The lab uses functional genomics approaches to elucidate the molecular and cell biology of human epithelia and their dysfunction in disease states such as Cystic Fibrosis. Projects will involve genome editing, gene expression analysis and assays of chromatin accessibility and structure.

ESSENTIAL FUNCTIONS

1. Conduct state-of-the-art genomics technologies and functional assays including but not limited to CRISPR/Cas9 protocols to manipulate cis-regulatory elements in the CFTR locus; analysis of the impact of therapeutic gene editing on CFTR locus architecture and gene expression; analysis of DNA, RNA and proteins; all related protocols of functional genomics including chromatin and RNA purification; analysis by deep sequencing and single cell sequencing and protocols of cell biology and biochemistry such as cell culture and protein analysis. (30%)
2. May assist in developing improved techniques based on genomics technologies and functional assays, projection methods or procedures. (20%)
3. Collect data using appropriate laboratory machines designed for performing cell biological, biochemical and molecular analysis. Data will involve images and numbers, which will be analyzed by appropriate statistical packages. (15%)
4. Maintain certain equipment facilities including laboratory cell culture facility and functional genomics equipment room with advanced thermal cyclers for quantitative gene expression analysis, bioruptors etc. Oversee supply inventory and ordering. Maintain chemical and biological inventories. (10%)
5. Collaborate with faculty members and scientists in training in the performance and analysis of complex and advanced research studies. Train new staff; direct the work of students. (10%)
6. Maintain research related materials to include study data, publications, submitted grants and other scientific documents. Collaborate with scientists in the preparation of manuscripts. Maintain laboratory databases. (8%)

NONESSENTIAL FUNCTIONS

1. Participate in meetings to present research study findings. (5%)

2. Perform other duties as assigned. (2%)

CONTACTS

Department: Daily contact with principal investigators, postdocs, research associates, research assistants and graduate students to review reagent needs or organize research interactions between different research teams in the department.

University: Daily contact with principal investigators, postdocs, research associates, research assistants, graduate students outside department. The supervisor has many collaborations both internal to the university and elsewhere, which will be facilitated by the research assistant.

External: Limited contact with outside vendors to obtain quotes for reagents, organize maintenance of equipment or solve problems relating to ordering and invoicing.

Students: Daily contact with graduate students, undergraduates and fellows to facilitate their research and ensure an efficient work environment

SUPERVISORY RESPONSIBILITY

This position has no direct supervision of staff employees. Train new staff; direct the work of students.

QUALIFICATIONS

Education and Experience: Bachelor's degree and 1 to 3 years of related experience or Associate's degree in an approved biotechnology program and 2 to 4 years of experience required.

REQUIRED SKILLS

1. Prior experience in practical cell biology, genetics, molecular biology or functional genomics techniques and analysis is required, at minimum in undergraduate research setting.
2. Prior bench work experience in an academic science or medicine setting and/or a clinical research setting in strongly preferred.
3. Strong numeracy and data analysis skills.
4. Computer proficiency in Microsoft Suite, Adobe Creative Suite, Graphpad an advantage.
5. Strong oral and written communication skills.
6. Strong organizational and management skills and ability to work in a fast paced environment.
7. Ability to meet consistent attendance.
8. Ability to interact with colleagues, supervisors and customers face to face.

WORKING CONDITIONS

The position entails working in a biomedical research laboratory. The employee will be expected to adhere to all required certification for laboratory work and adhere to all safety regulations including the

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use of personal protective equipment, standard lab coat, gloves and safety glasses when appropriate. The position may require extended hours including weekends as experiments dictate.