

position description

Date: November 2021

Title: Analyst Programmer 1

Department: Genetics and Genome Sciences

Management Center: School of Medicine

Location: Biomedical Research Building/8th floor

Supervisor Name and Title: Chen-Han Wilfred Wu, MD, PhD, Director, Urogenetics Program, Department of Genetics and Genome Sciences; Assistant Professor and Attending in Genetics and Urology, Case Western Reserve University, University Hospitals, and Case Comprehensive Cancer Center

POSITION OBJECTIVE

Working under direct supervision, the Analyst Programmer 1 will formulate and define experimental objectives through research and analysis of bioinformatics applications, as well as generate new sequencing datasets for analysis. The research studies urological diseases/conditions, and applies genetics approaches to help patients. The data to manage and analyze include germline genome, somatic genome, transcriptome, epigenome, biochemical genetics, microbiome, population genetics, electronic medical records, and clinical questionnaires.

ESSENTIAL DUTIES

1. Write and maintain straightforward applications. Design, code, test, debug, modify and document systems from detailed instructions and specifications. Download and process large DNA, RNA, proteomics, and clinical/phenotype data files using existing pipelines. May perform very limited system analysis work. (40%)
2. Perform laboratory experiments to produce novel next-generation sequencing data. (15%)
3. Assist in preparing detailed specifications from which programs are written. Modify detailed pipelines or create new pipelines to customize analysis. Automate routine tasks. Scripts will be written in R and/or Python. Program turnover to the production control supervisor. (15%)
4. Analyze and define significance of results produced from scientific experiments using statistical tests in R, STATA, and/or Python and create quality images for papers and grant proposals using R, STATA, Python, PowerPoint or software such as Adobe Illustrator and Photoshop. (15%)
5. Keep accurate records and protocols in an electronic notebook and organize and maintain digital data in a database or repository using SQL or related software. Learn administrative application standards, procedures and policies for software development and stay abreast of newly developed programs in the field. (10%)

NONESSENTIAL FUNCTIONS

1. Present in lab meetings. Train undergraduates and collaborate with lab personnel as required. (2%)



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2. Interact with researchers and the Case Western Reserve University sequencing core to define sequencing requirements and develop biological and analytical solutions. (2%)
3. Perform other duties as assigned. (1%)

CONTACTS

Department: Daily contact with department staff in consultation necessary for data analyses, code debugging, and code optimization.

University: Regular contact with department administrators to exchange information. Regular contact with hospital administrators to exchange information.

External: Occasional contact with outside consultants and representatives in consultation necessary for data analyses, code debugging, and code optimization.

Students/Trainees: Frequent contact with students, trainees and volunteers in consultation necessary for data analyses, code debugging and code optimization.

SUPERVISORY RESPONSIBILITIES

Supervisory responsibility for students/trainees and volunteers.

QUALIFICATIONS

Experience and Education: 0 to 3 months of experience and Associate's degree in a computer-related research field required.

REQUIRED SKILLS

1. Requires experience in shell scripting experience such as Linux Bash. Requires programming experience in computational languages (Python, R, Perl, Matlab, Mathematica, C, etc.). Relational database design and maintenance would be valued.
2. Ability to operate computers running Microsoft Windows, Mac OS, and Unix, in addition to basic laboratory equipment.
3. Knowledge and understanding of commonly-used concepts, practices, and procedures within the field of Genomics.
4. Strong interpersonal skills: ability to work and communicate with various individuals from a broad spectrum of disciplines.
5. Ability to work collaboratively within an interdisciplinary research team. (Must be highly motivated, responsible, dependable, and a self-starter.)
6. Excellent verbal and written communication skills.
7. Strong organization skills: ability to multi-task, prioritize and meet deadlines. Must demonstrate attention to detail and accuracy, time management skills, and proven ability to successfully follow through on assigned projects.

8. Must demonstrate willingness to learn new techniques, procedures, processes, and computer programs as needed. This person will rely on instructions and protocols to perform the functions of the job.
9. Must demonstrate flexibility and ability to work under pressure; must be able and willing to work in a fast-paced, changing environment, and conform to shifting priorities, demands, and timelines.
10. Ability to meet consistent attendance.
11. Ability to interact with colleagues, supervisors and customers face to face.

WORKING CONDITIONS

General office and laboratory environment. Limited manual dexterity required. Work requires negligible physical exertion. May have exposure to hazards, such as blood-borne pathogens and standard laboratory chemicals. May be required to use personal protective equipment, including standard lab coat, gloves and safety glasses when appropriate.