

# BIOINFORMATICIAN

Recruitment #2012-1933-001

<b>List Type</b>	Original
<b>Requesting Department</b>	HEALTH-LABORATORIES
<b>Open Date</b>	12/16/2020 12:15:00 PM
<b>Filing Deadline</b>	1/11/2021 11:59:00 PM
<b>HR Analyst</b>	Nola Nelson

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## INTRODUCTION

*Located on the western shore of Lake Michigan, Milwaukee is an urban hub bursting with energy. Milwaukee provides a casual sophistication – big city appeal without the big-city hassles. We are accessible and affordable, and our residents are welcoming. Milwaukee brings together its unsurpassed old world charm with a breathtaking art museum, top-flight arts and cultural attractions, professional sports, lakefront festivals, recreational opportunities and great restaurants.*

*The City of Milwaukee is proud to employ a diverse workforce that is committed to providing exemplary service to the City's residents. If you have a passion for being a part of an inclusive team of public servants, please consider the following opportunity.*

## PURPOSE

The Bioinformatician works under the supervision of the Laboratory Director. In support of the Microbiology, Virology and Molecular Science sections, the Bioinformatician is responsible for performing bioinformatic analyses by collecting and analyzing data, generating reports, assisting users in depositing and validating nucleotide sequence data, writing scripts and plug-ins to integrate submissions into laboratory workflows and developing analysis pipelines. These functions are performed in order to identify emerging microbial trends among clinical and environmental samples analyzed at the Milwaukee Health Department Laboratory (MHDL).



## ESSENTIAL FUNCTIONS

## **Bioinformatics**

- Direct and oversee the development, evaluation and implementation of data analysis methodologies and bioinformatics expertise to support MHD laboratory's genomic surveillance and molecular epidemiology functions, with particular emphasis on newly emergent and/or re-emerging pathogens of public health importance.
- Collect, classify and analyze nucleotide sequence and integrate microbiological and biochemical information through the development and use of computer databases, algorithms and statistical techniques; integrate knowledge of laboratory and computer science to appropriately apply and evaluate effectiveness of techniques.
- Select, use and evaluate sequence data visualization and representation tools (i.e., graphs, charts and tables) to provide meaningful insight into bioinformatics analyses.
- Facilitate the development of next generation sequencing (NGS), including laboratory developed NGS assays, in order to build bioinformatics infrastructure and data analysis pipelines.
- Participate with MHD staff and partners in the analysis and interpretation of NGS data as it relates to public health outbreak planning and response to infectious diseases of public health importance.

## **Data Access and Oversight**

- Apply, evaluate, and develop new data structures, and data management, storage and retrieval techniques, ensuring proper allocation of computing resources.
- Review and develop data standards and vocabularies as they relate to laboratory test results and the identification of microorganisms.
- Provide sequence data analysis support for molecular diagnostic method implementation and evaluation, and collaborate with laboratory staff and public health, clinical and academic partners in support of molecular surveillance and related research studies. Prepare written reports and publish data in peer-reviewed journals. Present information at statewide, regional and national meetings of clinical and public health personnel, including the Centers for Disease Control and Prevention Advanced Molecular Detection (CDC AMD) Program.

## **Quality Assurance and Compliance**

- Ensure compliance with applicable laws and regulations, including CLIA and the College of American Pathologists (CAP).
- Review and validate data integrity, implementing quality assurance methods and practices
- Develop and maintain a user manual.

### **Laboratory Information System (LIS) Support and Maintenance**

- Assist with building NGS tests in order to analyze, troubleshoot and solve LIS system-related problems relevant to bioinformatics practices
- Maintain the integrity of the LIS database and provide assistance for maintaining timely and accurate LIS operations for bioinformatics analysis and reporting

We welcome qualified individuals with disabilities who are interested in employment and will make reasonable accommodations during the hiring process in accordance with the Americans with Disabilities Act (ADA) of 1990, as amended by the Americans with Disabilities Act Amendments Act (ADAAA) of 2008.

### **CONDITIONS OF EMPLOYMENT**

- Must work safely in the presence of human specimens including blood, urine, and other clinical samples, body fluids or tissues.
- May be exposed to infectious agents or toxic laboratory chemicals.
- Required to wear a particulate respirator (N95 or higher) and respirator fit test annually or frequency recommended by the MHD Medical Directors.
- May be assigned to 24-hour emergency on-call rotation schedule (including weekends).
- May be required to participate in the Select Agent Program and must receive FBI background clearance.
- May travel outside the City of Milwaukee, occasionally overnight, for training purposes or for participation in job related meetings.
- Based upon each department's responses to the COVID-19 pandemic and the needs of each department, employees may be expected to work from home intermittently or continuously.

### **MINIMUM REQUIREMENTS**

1. A master's degree in Bioinformatics, Microbiology, Molecular Biology, Computer Science, Public Health or equivalent from an accredited college or university.

2. Two years of experience in sequence data analysis and knowledge of high-complexity laboratory testing in a clinical or public health laboratory setting.

*Equivalent combinations of education and experience may be considered.*

IMPORTANT NOTE: Academic (college and graduate) transcripts are required and must be received by the application period closing date. Transcripts should be attached to your online application. Applications without transcripts attached will be considered incomplete and will be rejected. Student/unofficial copies are acceptable; however, your transcript must be legible and include your college/university name, your name, the degree completed (if applicable) and the date completed.

## DESIRABLE QUALIFICATIONS

PhD in Bioinformatics, Microbiology, Molecular Biology, Computer Science or Public Health from an accredited college or university.

## KNOWLEDGES, SKILLS, ABILITIES & OTHER CHARACTERISTICS

### Technical Skills

- Knowledge of and the ability to apply techniques in design and analysis algorithms.
- Knowledge of and the ability to apply concepts relative to microbial genome sequence data and related analysis.
- Ability to build bioinformatics infrastructure and to develop data analysis pipelines.
- Knowledge of microbial disease surveillance concepts and methodologies.
- Knowledge of next generation sequencing (NGS) methods and bioinformatics analyses as applied primarily to infectious diseases and emerging pathogens.
- Knowledge of and the ability to apply the advanced concepts of molecular biology.
- Knowledge of and the ability to apply nucleotide sequence analysis.
- Knowledge of and the ability to effectively utilize biological databases.
- Knowledge of and the ability to apply biostatistics.
- Ability to apply computer programming related to design and analysis algorithms, molecular biology, molecular sequence analysis, and biological databases.
- Knowledge of clinical, or environmental, testing performed at a public health laboratory for molecular diagnostic, epidemiological or surveillance purposes.
- Comprehensive knowledge of recognized reference standards and accrediting agency requirements including Clinical Laboratory Improvement Amendments (CLIA), along with quality control, workload reporting, and proficiency testing

to design programs to assure the reliability of data and measure laboratory productivity.

- Ability to read, analyze and interpret complex technical, administrative and educational documents.
- Ability to access and analyze data from high complexity laboratory instruments, including Thermocyclers, conventional and next-generation sequencing instruments.

### **Communication Skills**

- Ability to write business correspondence and scientific procedural manuals.
- Ability to prepare reports and papers on significant analytical results for scientific publication or presentation to a variety of persons and audiences, both within and outside the laboratory.
- Ability to speak clearly and persuasively in order to effectively present information and respond to questions from managers, clients, researchers and the general public.
- Ability to respond effectively to the most sensitive inquiries or complaints.

### **Computer Skills**

- Ability to effectively utilize a personal computer with both Windows and Linux operating systems and data analysis software packages (e.g., CLC Genomics, BioNumerics, BaseSpace, etc.).
- Ability to effectively utilize software applicable to various reporting systems, particularly the Laboratory Information Management Systems (LIMS), local and cloud storage (e.g. Amazon web-services- AWS) and inventory control.
- Ability to efficiently utilize Microsoft office programs including Excel, Access, Word, PowerPoint, internet search and use of application database and software.

### **Interpersonal Skills**

- Ability to maintain positive working relationships with clients, multi-cultural and multi-disciplinary staff, other agencies, and the public.
- Ability to balance team and individual responsibilities.
- Ability to exhibit objectivity and openness to others' views.
- Ability to provide and receive feedback in a positive manner.
- Ability to contribute to a positive team spirit.

### **Judgment and Analysis**

- Ability to maintain confidentiality.
- Ability to solve practical problems.
- Ability to work under pressure and handle multiple and changing priorities.
- Ability to think and respond quickly and efficiently in a fast-paced environment.
- Ability to plan and organize work.

## CURRENT SALARY

The current salary range (2 JN) is \$62,338 - \$87,270 annually and the resident incentive salary range for City of Milwaukee residents is \$64,209-\$89,889 annually. *Appointment above the minimum is possible based upon level of experience and other qualifications and is subject to approval.*

The City of Milwaukee provides a comprehensive benefit program that includes the following:

- Defined Benefit Pension Plan
- 457 Deferred Compensation Plan
- Health and Dental Insurance
- Comprehensive Wellness Program
- Onsite Clinic Services
- Onsite Employee Assistance Program
- Alternative Work Schedules
- Long Term Disability Insurance
- Group Life Insurance
- Tuition Benefits
- Paid Vacation
- 11 Paid Holidays
- Paid Sick Leave and other paid leaves
- Flexible Spending Arrangement
- Commuter Value Pass

For full details of the benefits offered by the City of Milwaukee, please visit <https://city.milwaukee.gov/der/benefits>.

## SELECTION PROCESS

THE SELECTION PROCESS will be job related and will consist of one or more of the following: education and experience evaluation; written, oral, or performance tests, or other assessment methods. The Department of Employee Relations reserves the right to call only the most qualified candidates to oral and performance examinations. Oral examinations may include written exercises. Selection process component weights will be determined by further analysis of the job.

INITIAL FILING DATE - The examination will be held as soon as practical after **Monday, January 11, 2021**. Receipt of applications may be discontinued at any time after this date without prior notice. However, recruitment may continue until the needs of the City have been met. Qualified applicants will be notified of the date, time, and place of the examination. Unless otherwise required by law, the City of Milwaukee will not provide alternative test administration. The applicant is responsible for attending all phases of the job selection process at the time and place designated by the City of Milwaukee.

#### ADDITIONAL INFORMATION

- Applications and further information may be accessed by visiting, <http://city.milwaukee.gov/jobs>.
- If you would like assistance completing an application, please contact the Department of Employee Relations at (414) 286-3751 or [staffinginfo@milwaukee.gov](mailto:staffinginfo@milwaukee.gov).
- The Department of Employee Relations is located at City Hall, 200 E. Wells St., Room 706, Milwaukee, WI 53202.

#### CONCLUSION

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*The City of Milwaukee values and encourages diversity and is an equal opportunity employer.*