Opportunity Title: CDC Research Opportunity for Bioinformatics, WGS, and Bacterial Genomic Data Analytics
Opportunity Reference Code: CDC-NCHHSTP-2023-0058

Organization Centers for Disease Control and Prevention (CDC)

Reference Code CDC-NCHHSTP-2023-0058

How to Apply

Connect with ORISE...on the GO! Download the new ORISE GO mobile app in the Apple App Store or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!

A complete application consists of:

- An application
- Transcripts – Click here for detailed information about acceptable transcripts
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- One educational or professional recommendation. Your application will be considered incomplete, and will not be reviewed until one recommendation is submitted.

All documents must be in English or include an official English translation.

Application Deadline 2/29/2024 3:00:00 PM Eastern Time Zone

Description

***Applications will be reviewed on a rolling-basis.**

CDC Office and Location: A fellowship opportunity is available with the Communications, Education, and Behavioral Studies Branch, Division of Tuberculosis Elimination (DTBE), within the National Center for HIV, Viral Hepatitis, STD and TB Prevention (NCHHSTP) at the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia.

The Centers for Disease Control and Prevention (CDC) is one of the major operation components of the Department of Health and Human Services. CDC works to protect America from health, safety and security threats, both foreign and in the U.S. Whether diseases start at home or abroad, are chronic or acute, curable or preventable, human error or deliberate attack, CDC fights disease and supports communities and citizens to do the same.

Research Project: This project will provide genomic data analysis as part of a growing national, molecular surveillance program for *Neisseria gonorrhoeae* with a focus on detection of antibiotic resistance and antibiotic resistance mechanisms. The project supports capacity building of whole genome sequence technology, integrated genomic analysis pipelines and automated data visualization and reporting for the public health action to identify and respond to resistant *Neisseria gonorrhoeae*. The fellowship will support the optimization of quality initiatives and data management strategies. This fellowship may provide opportunities for hands-on wet-lab processing of whole genome sequencing to genomic analyses of isolates of concern from local jurisdictions.

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Learning Objectives:

- Providing customized or guided computational support within a team environment
- Evaluating existing methods for genomic data analysis
- Developing, validating, optimizing and implementing analysis pipelines for genomic data analysis
- Performing bioinformatics analyses of large-scale genomics data, processing data through genomic data analysis pipelines.
- Participation in the automation of analyses and data visualization for reporting
- Integrating statistical analysis to project design and data interpretations
- Providing data management recommendations, being a team supporter in development of database
- Partnering with department personnel and researchers in the institution
- Preparing summaries, presentations, manuscript sections and figures for the visualization and publication of complex data and results
- Hands-on preparation of bacterial specimens for next-generation sequencing. Learn best-practices for optimal whole genome sequencing of bacterial species, *Neisseria gonorrhoeae*
- Enhance professional growth and development by reviewing current literature and by participation in educational programs, workshops, conferences, and in-service meetings

Mentor(s): The mentor for this opportunity is Kim Gernert (nin1@cdc.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: May 1, 2023. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for one year, but may be renewed upon recommendation of CDC and is contingent on the availability of funds.

Level of Participation: The appointment is full-time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience.

Citizenship Requirements: This opportunity is available to U.S. citizens and Lawful Permanent Residents (LPRs).

ORISE Information: This program, administered by ORAU through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and CDC. Participants do not become employees of CDC, DOE or the program administrator, and there are no

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employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.

The successful applicant(s) will be required to comply with Environmental, Safety and Health (ES&H) requirements of the hosting facility, including but not limited to, COVID-19 requirements (e.g. facial covering, physical distancing, testing, vaccination).

Questions: Please visit our Program Website. After reading, if you have additional questions about the application process please email ORISE.CDC.NCHHSTP@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received a bachelor's, master's, or doctoral degree in one of the relevant fields, or be currently pursuing a master's or doctoral degree with completion before June 1, 2023. Degree must have been received within the past five years.

Preferred skills:

- Interest in public health, data analytics, informatics;
- Knowledge of prokaryotic genomics;
- Interest in antibiotic susceptibility and resistance mechanisms;
- Interest in or previous wet-lab experience in microbiology, whole genome sequencing;
- Demonstrated initiative in evaluating, troubleshooting and implementing new technologies;
- Knowledge of NGS technology and bioinformatics analysis for Illumina NGS data;
- Interest in automation of analysis pipelines, data visualization (PowerBI, Tableau, R);
- Proficiency in at least one high level scripting and programming language (PERL, Python, JAVA, R);
- Knowledge of databases using available software packages (SQL, MySQL) is a plus;
- Strong oral and written communication skills, strong interpersonal skills;
- Interest in joining a service-oriented team, to provide high-quality data, analyses and reporting to the public health community.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or anticipated to be received by 6/1/2023 12:00:00 AM.
- **Discipline(s):**
  - **Communications and Graphics Design** (2 👁)

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- **Computer, Information, and Data Sciences** (14 👁)
- **Earth and Geosciences** (1 👁)
- **Engineering** (5 👁)
- **Environmental and Marine Sciences** (14 👁)
- **Life Health and Medical Sciences** (48 👁)
- **Mathematics and Statistics** (4 👁)

- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).

Affirmation

I certify that I have not previously been employed by CDC or by a contractor working directly for CDC. I understand that CDC does not permit individuals with a prior employment relationship with CDC or its contractors to participate as trainees in the ORISE program. (Exceptions may be granted for individuals who, since the previous CDC employment, have obtained a new STEM degree which necessitates training in a new field.)