

Opportunity Title: CDC Bioinformatics Specialist Fellowship

Opportunity Reference Code: CDC-NCHHSTP-2022-0215

Organization Centers for Disease Control and Prevention (CDC)

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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.

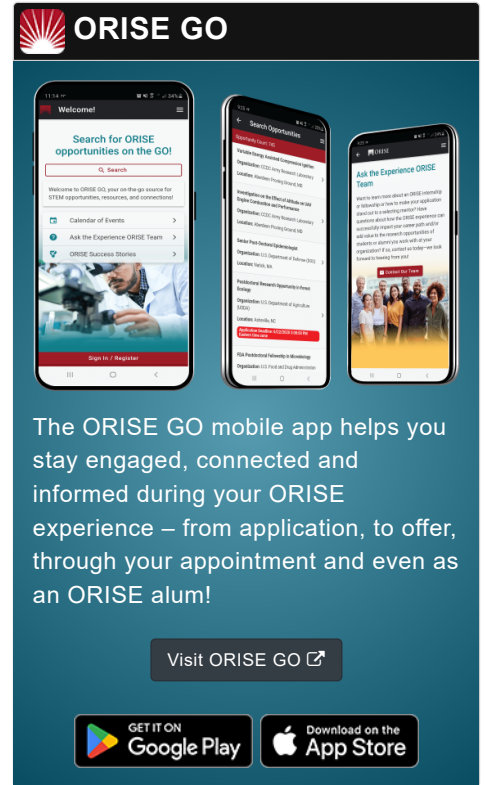
Application Deadline 7/19/2022 3:00:00 PM Eastern Time Zone

Description **Applications will be reviewed on a rolling-basis and this opportunity could close before the application deadline.*

CDC Office and Location: A research opportunity is currently available within the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP), at the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia.

The 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: Under the guidance of the mentor, the selected participant will have the opportunity to learn bacterial genomics and bioinformatics, understand how genomic surveillance systems are implemented for various Sexually Transmitted Diseases (STD) causing pathogens as well as apply the principles of genomic epidemiology in routine public health practice. The applicant will develop methods/workflows to conduct large scale phylogenetic analysis and visualization by integrating various antimicrobial resistance markers, phenotypic and other demographic data with potential application of improving genomic surveillance within CDC as well as State and other public health labs. In addition, the participant will have the opportunity to learn analyzing next generation sequencing data generated from metagenomics projects intended for direct sequencing of STD pathogen genomes and targeted genes from clinical specimens using both short and long read sequencing



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technologies.

Learning Objectives:

- Providing customized or guided computational support within a team environment. Co-evaluating existing methods for genomic data analysis
- Performing bioinformatics analyses of large-scale genomics data. Processing data through genomic data analysis pipelines.
- Supporting various research projects as assigned by supervisor. Teaming with department personnel and researchers in the institution.
- Supporting the development of new methods for genomics data analysis
- Helping to integrate statistical analysis to project design and data interpretations
- Participating in the preparation of summaries, presentations, manuscript sections and figures for the visualization and publication of complex data and results
- Enhancing 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 Sandeep

Joseph (jww9@cdc.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: September 1, 2022. 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 (LPR) only.

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 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

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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 be currently pursuing or have received a master's or doctoral (preferred) degree in one of the relevant fields. Degree must have been received within the past five years.

Preferred skills:

- Demonstrated technical activity involvement
- Knowledge of NGS technology and concrete skills in bioinformatics analysis for Illumina NGS data
- Knowledge of prokaryotic genomics and phylogenetics
- Interest in antibiotic susceptibility and resistance mechanisms
- Proficiency in at least one high level scripting and programming language (e.g. Python (preferred), JAVA, R, C++)
- Experience in Nextflow workflow management software is desired but not required
- Knowledge of a Linux environment, running a cluster using SGE and BASH shell scripting
- Knowledge of application programming interfaces (APIs) and their development
- Knowledge of statistical or mathematical analysis packages
- Strong oral and written communication skills and strong interpersonal skills
- Demonstrate initiative in evaluating and experimenting with new technologies

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
 - **Computer, Information, and Data Sciences** (9 )
 - **Life Health and Medical Sciences** (7 )
 - **Mathematics and Statistics** (3 )

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

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STEM degree which necessitates training in a new field.)