

Opportunity Title: CDC Fellowship - STD Pathogens Bioinformatics

Opportunity Reference Code: CDC-NCHHSTP-2022-0226A

Organization Centers for Disease Control and Prevention (CDC)

Reference Code CDC-NCHHSTP-2022-0226A

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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 8/15/2022 3:00:00 PM Eastern Time Zone

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

CDC Office and Location: A research opportunity is available in the Division of STD Prevention (DSTDP) with the National Center for HIV, Viral Hepatitis, STD, and TB Prevention (NCHHSTP), STD Laboratory Reference and Research Branch (SLRRB) at the Centers for Disease Control and Prevention (CDC) located 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: SLRRB is offering a fellowship opportunity to contribute to the development of automatically generated output that is understandable by field epidemiologists as well as to participate in developing algorithms to identify AMR markers from the genomic sequences of STD pathogens for which no systematic genomic surveillance is currently done.

The selected participant will be involved in an SLRRB project involved in antimicrobial resistance (AMR) marker detection in several STD-causing pathogens. The Gonorrhea, Chlamydia, and *Mycoplasma genitalium* (GC/CT/Mgen) Team is developing, in close collaboration with DSTDP epidemiologists, the capacity for auto-generated reports to our public health partners as well as AMR marker detection methods for STD pathogens. In particular, we are interested in algorithms for detecting AMR determinants from *Neisseria gonorrhoeae*, *Mycoplasma genitalium*, and *Treponema pallidum* in collaboration with the Syphilis and Emerging STIs Team in SLRRB.

Learning Objectives: Under the guidance of a mentor, the fellow will receive



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training in the following areas:

- Evaluating and adapting existing bioinformatics pipelines on CDC computing systems
- Writing of new pipeline components
- Building automations to facilitate analysis of sequence data
- Documentation for code and pipelines
- Regular collaboration with SLRRB and DSTDP partners to evaluate potential solutions to the analytical challenge
- Adaptation of selected methods to meet the analysis need, including writing new code as required

Mentor(s): The mentor for this opportunity is Matthew Schmerer (nmk7@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, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the [Guidelines for Non-U.S. Citizens Details](#) page of the program website for information about the valid immigration statuses that are acceptable for program participation.

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 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 one of the degrees with completion before September 1, 2022. Degree must have been received within five years of the appointment start date.




Preferred Skills:

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- Knowledge of NGS technology and concrete skills in bioinformatics analysis for Illumina NGS data
- Knowledge of prokaryotic genomics and phylogenetics
- Interest in antibiotic resistance mechanisms
- Proficiency in at least one high level scripting and programming language (e.g. Python, R, bash)
- Knowledge of a Linux environment, running a cluster using SGE and BASH shell scripting
- Strong oral and written communication skills and strong interpersonal skills
- Use of version control systems and code repositories (e.g. GitHub)

Eligibility Requirements

- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or anticipated to be received by 9/1/2022 12:00:00 AM.
- **Academic Level(s):** Graduate Students, Post-Bachelor's, Postdoctoral, Post-Master's, or Undergraduate Students.
- **Discipline(s):**
 - **Computer, Information, and Data Sciences** ([13](#) )
 - **Life Health and Medical Sciences** ([41](#) )
 - **Mathematics and Statistics** ([8](#) )

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.)