Opportunity Title: Software Programmer/Data Scientist/Bioinformatician -- CDC
Opportunity Reference Code: CDC-NCHHSTP-2017-0049

Organization Centers for Disease Control and Prevention (CDC)

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How to Apply 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
- Two educational or professional references

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

If you have questions, send an email to CDCrpp@orau.org. Please include the reference code for this opportunity in your email.

Description A fellowship opportunity is available with the Laboratory Branch of the Division of HIV/AIDS Prevention (DHAP) 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.

This fellowship offers the opportunity to join a high-priority, high-impact issue in domestic HIV, hepatitis, tuberculosis (TB) and sexually transmitted disease (STD) surveillance. This is an exciting opportunity for a bioinformatician or computer scientist to assist with an innovative CDC project to develop a bioinformatics pipeline for the analysis and visualization of microbial transmission networks. The opportunity includes being involved with internationally renowned laboratory and epidemiology scientists at the CDC with expertise with a variety of pathogens in our center, including TB, HIV, hepatitis and STDs. Very large microbial datasets exist to both develop and be analyzed by using this new platform, the outcomes of which will have significant public health impact.

The fellow will help develop a comprehensive software system that integrates multiple bioinformatics tools for the analysis and visualization of transmission networks, including development of methods to improve integration, analysis, and interpretation of phylogenetic, network, and epidemiologic, clinical and antimicrobial treatment data. When possible, this approach will utilize existing individual software programs and bioinformatics tools that are free and open source. The developed methods will use the rich metadata available from various studies and allow for searching and filtering sequences and metadata by specific characteristics, risk groups, and antimicrobial treatments. These new tools will help identify meaningful cluster characteristics and trends in subgroups at local and national levels. This project will provide CDC with a better understanding of pathogen transmission in communities and will better utilize resources to target specific prevention efforts. The new tools will also facilitate providing data and results back to state and local health departments for use in additional investigations and to guide local prevention efforts.

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The fellow may have the opportunity to be involved in the following activities:

• Developing novel bioinformatics pipeline for characterizing and visualizing microbial transmission networks
• Participating in multidisciplinary research projects involving molecular epidemiology, microbiome analysis and bioinformatics
• Assisting in the training of scientists in the selection and use of bioinformatics tools
• Collaborating with external and internal stakeholders
• Assisting with a high profile public health project
• Analysis of large complex microbial datasets using the new pipeline
• Preparing manuscripts describing new pipeline and/or analysis of dataset
• Communicating research results through conference presentations, scientific publications or project reports

This program, administered by ORAU through its contract with the U.S. Department of Energy to manage the Oak Ridge Institute for Science and Education, was established through an interagency agreement between DOE and CDC. The initial appointment is for one year, but may be renewed upon recommendation of CDC contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time at CDC in the Atlanta, Georgia, area. Participants do not become employees of CDC, DOE or the program administrator, and there are no employment-related benefits.

Qualifications

- MS or PhD degree in an area of computational or life sciences with at least two years programming experience, including bioinformatics within the last 5 years.
- Experience with data manipulation and software development using Python, R, and/or javascript and a willingness to learn additional programming languages as needed. Experience with SAS and Scala.
- Knowledge of relational databases (SQL and Postgres) and a willingness to work in the Hadoop ecosystem.
- Familiarity with molecular and public health epidemiology and analysis of genetic sequence data, including phylogenetic and network analyses.
- Experience manipulating, analyzing, and annotating very large biological sequence data sets, both in exploratory and pipelined fashions.
- Highly capable of being involved collaboratively with an interdisciplinary team, including laboratory scientists, epidemiologists, bioinformaticians, statisticians, and data analysts, and have strong written and verbal communication skills.
- Self-motivated, be involved independently or in a team environment, and be able to multi-task.

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Eligibility Requirements

- **Degree:** Master's Degree or Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (6 👁)
  - **Engineering** (1 👁)
  - **Life Health and Medical Sciences** (5 👁)
  - **Other Non-Science & Engineering** (2 👁)