Opportunity Title: CDC Bioinformatics and Computer Science Fellowship
Opportunity Reference Code: CDC-NCIRD-ID-2022-0186

Organization	Centers for Disease Control and Prevention (CDC)
Reference Code	CDC-NCIRD-ID-2022-0186
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.

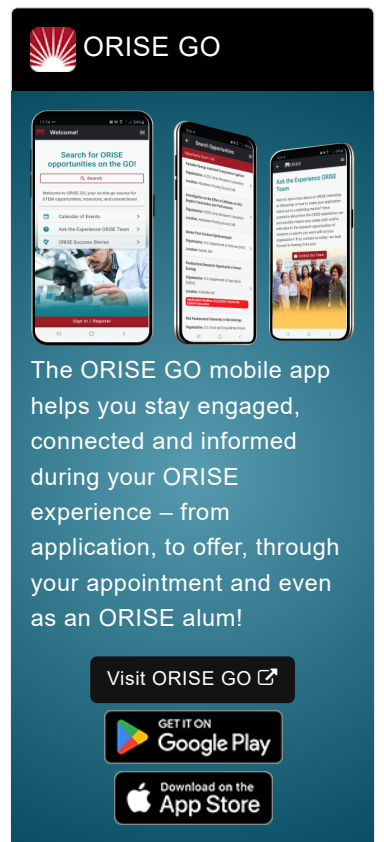|	
Application Deadline	6/22/2022 3:00:00 PM Eastern Time Zone
Description	***Applications will be reviewed on a rolling-basis.**

CDC Office and Location: A fellowship opportunity is currently available with the Influenza Division (ID) in the National Center for Immunization and Respiratory Diseases (NCIRD) at the Centers for Disease Control and Prevention (CDC) located 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.

ID performs domestic and international influenza surveillance, aids in influenza diagnosis, and is a leader in influenza virus characterization and control efforts.

Research Project: The selected fellow will be contributing research to the Informatics Group within the Influenza Division's Office of the Director (ID/OD). The ID/OD Informatics Group performs cross-cutting work spanning multiple areas, including the development of computational methods, data integration and enrichment, statistical analysis, laboratory automation, system management, special R&D projects, and technical consultation. The Informatics Group seeks to empower and strengthen informatics efforts throughout the division via innovation, collaboration, service, and the management of shared analytics resources. Additionally, the group serves as a forum for informatics knowledge exchange, helping to align division-wide computational efforts.

Learning Objectives: As an ORISE fellow within the ID/OD informatics group, you will have opportunities to engage in a variety of projects focused

on next-generation sequencing, data engineering, analytics, infrastructure and scalable computing. On the biology side, statistical and evolutionary research projects are available, such as augmenting systems for evolutionary group annotation, passage-mutation model refinement, and strain risk assessment. On the computer science side, the fellow may learn about and re-implement classic bioinformatics algorithms, understand vectorization, and explore genetic data processing. For example, one aim could be to implement and explore microservice architectures that extend from on-prem to the cloud using a modern language like Rust.

For analytics, the fellow will be trained to use distributed database techniques, such as Apache Hive and Apache Impala, using structured query language (SQL). There will also be opportunities to learn distributed scientific computation in the context of Apache Spark or Univa Grid Engine. The fellow will gain experience using Git / GitLab and will receive training to enhance programming skills. Finally, the fellow will learn about influenza, its molecular classifications and antigenic characterization, as well as the data ecosystem necessary for a world-class influenza surveillance system.

Mentor(s): The mentor(s) for this opportunity are Samuel Shepard (vfn4@cdc.gov) and Thomas Stark (ynh4@cdc.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: July 18, 2022. Start date is flexible.

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 or Lawful Permanent Residents (LPR).

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.NCIRD@orau.org and include the reference code for this opportunity.

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Qualifications The qualified candidate should be currently pursuing a bachelor's or master's degree in one of the relevant fields with completion by June 6, 2022.

Preferred Skills:

- Skill in at least one programming or scripting language (Rust, C/C++, Java, Perl, Python, R, Scala) and working knowledge of Linux command line (BASH, etc.) operations
- Experience in using Structured Query Language (SQL) is *favored*.
- Experience in one of the following is *strongly preferred*: (a) cloud literacy, (b) Rust, or (c) web APIs and microservices.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Currently pursuing a Bachelor's Degree or Master's Degree to be received by 6/6/2022 12:00:00 AM.
- **Overall GPA:** 3.00
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (6 👁)
  - **Life Health and Medical Sciences** (3 👁)
  - **Mathematics and Statistics** (3 👁)
  - **Physics** (1 👁)