

Opportunity Title: CDC Development of Novel Pipelines for Diagnoses of Arboviral Infections and Generation of Diagnostic Reagents and Controls

Opportunity Reference Code: CDC-NCEZID-DVBD-2022-0340

Organization Centers for Disease Control and Prevention (CDC)

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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.

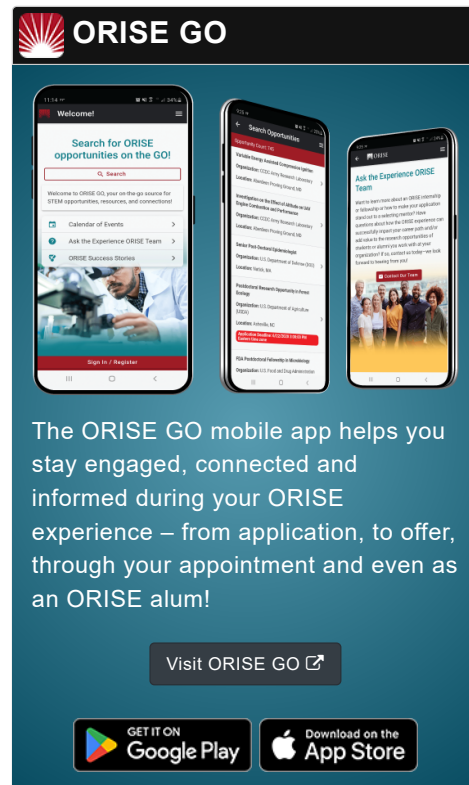
Application Deadline 11/22/2022 3:00:00 PM Eastern Time Zone

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

CDC Office and Location: A fellowship opportunity is available in the National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), Division of Vector-Borne Diseases (DVBD), at the Centers for Disease Control and Prevention (CDC) in Fort Collins, Colorado.

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: The fellow will have the opportunity to engage in several projects focusing on leadership and improving molecular detection of arboviruses. The diagnosis of arboviruses is confounded by the immense breadth of viral families and disease presentations. Moreover, molecular diagnosis is not often feasible in many countries due to limited resources. For example, yellow fever molecular diagnosis in resource limited countries is infrequently successful due to difficulties in sample stabilization and degradation of RNA during long transportation periods where cold-chain shipments are not feasible. In light of this, many labs rely on serological testing, however, serological diagnosis is confounded by cross-reactivity of co-circulating viruses and reoccurring vaccination campaigns. The fellow will focus on improving molecular diagnosis in yellow fever endemic



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regions by investigating methods to improve RNA stabilization via FTA cards.

Learning Objectives: This project will offer the fellow the opportunity to collaborate with the WHO yellow fever Laboratory Technical Workgroup and participate in a pilot study in collaboration with national labs in Africa and South America to test the feasibility of FTA sample stabilization methods. Additionally, the fellow will be involved with establishing data analysis pipelines to streamline molecular detection of arboviruses using whole-genome sequencing platforms. Genomic detection of arboviruses is confounded by a wide variety of viral families utilizing several different genomic strategies (e.g. positive, negative, segmented, or double-stranded RNA). This breadth of genomes confounds targeted genomic amplification, requiring analytically intensive de novo analysis. The fellow will begin to establish big-data informatic pipelines that can assist in genomic analysis for all appropriate viral families. Through streamlining analysis, whole genome sequences can be rapidly utilized to develop diagnostic and surveillance tools such as consensus RT-PCR and real-time RT-PCR assays.

Mentor(s): The mentor for this opportunity is Aaron Brault (zlu5@cdc.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: 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.

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

Qualifications The qualified candidate should be currently pursuing or have received a doctoral degree in one of the relevant fields.

Eligibility Requirements

- **Degree:** Doctoral Degree.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** (12 )
 - **Communications and Graphics Design** (2 )
 - **Computer, Information, and Data Sciences** (17 )
 - **Earth and Geosciences** (21 )
 - **Engineering** (27 )
 - **Environmental and Marine Sciences** (14 )
 - **Life Health and Medical Sciences** (48 )
 - **Mathematics and Statistics** (11 )
 - **Physics** (16 )
 - **Science & Engineering-related** (2 )
 - **Social and Behavioral Sciences** (28 )

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.)