Opportunity Title: CDC Vaccine Immunology Fellowship
Opportunity Reference Code: CDC-NCIRD-DVD-2024-0201A

Organization Centers for Disease Control and Prevention (CDC)

Reference Code CDC-NCIRD-DVD-2024-0201A

How to Apply ***To submit your application, scroll to the bottom of this opportunity and click 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
- 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.

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

CDC Office and Location: A research opportunity is currently available within the Viral Vaccine Preventable Diseases Branch (VVPDB), Division of Viral Diseases (DVD), 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.

DVD is responsible for the surveillance of multiple viruses associated with both vaccine preventable and non-vaccine preventable diseases. VVPDB also serves as a Global Specialized Laboratory within the World Health Organization (WHO) Measles and Rubella Laboratory Network.

Research Project: Despite the widespread implementation of vaccination programs in several countries, measles, mumps, rubella, and varicella (MMRV) remain highly relevant viral diseases for domestic and global public health programs. Understanding the prevalence of MMRV antibodies in a population is an important component of surveillance activities that can help verify vaccine coverage rates and identify subgroups within the population that may be at risk of disease transmission and outbreaks. VVPDB has developed a multiplex bead assay (MBA) to evaluate measles and rubella seroprevalence at the population level. The MBA is based on

Luminex technology, where viral antigens are coupled to microbeads with unique fluorescence properties, providing the ability to test for antibodies against multiple pathogens simultaneously. The MBA is both high throughput and scalable by design and has already been implemented in large-scale international serosurveys with numerous additional studies planned.

The COVID-19 pandemic was disruptive to routine immunization programs and supplemental immunization campaigns globally, with millions of children and adults missing scheduled vaccine doses. The impact of this disruption to MMRV immunization programs is still unknown, but cross-sectional surveys of population immunity from specimens collected before and after the COVID-19 pandemic began can help to address this question.

To help accomplish these and other goals, the selected participant will join the Vaccine Immunology Team within VVPDB. Under the guidance of a mentor, research opportunities may include:

- Developing and evaluating antigens to integrate MBA testing for additional pathogens
- Performing quality control and method validation for MBAs utilizing new pathogens
- Testing large panels of sera by MBA to generate data for serosurveys

The results of this project will provide VVPDB with an improved serologic assay platform for rapidly quantifying protective immunity against measles, mumps, rubella, and varicella. The selected participant will collaborate with subject matter experts and team members who are performing various aspects of this research.

Learning Objectives: The participant will have the opportunity to train on a variety of projects related to vaccine immunology and assay development. The participant's primary project will be focused on the implementation of novel multiplex bead-based serology assays, where the participant will receive laboratory training in evaluating the immune responses to vaccines, including the use of serology testing to quantify antibody titers. The participant will also receive training in diagnostic assay development, as well as additional formal training in microbiology and immunology through the attendance of scientific conferences and workshops.

Mentor(s): The mentor for this opportunity is Stephen Crooke (qjf9@cdc.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: January 1, 2025. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for up to 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.

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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.NCIRD@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 biology, microbiology, immunology, or a related field; or be currently pursuing one of these degrees and expect to complete the degree by the start date of the appointment. Degree must have been received within 5 years of the appointment start date.

Preferred skills:

- Experience with serological assays and cell culture techniques highly desirable.

Eligibility Requirements

- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (3 👁)
  - **Engineering** (1 👁)
  - **Life Health and Medical Sciences** (7 👁)

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.)