

**Opportunity Title:** EPA Fellowship in Particulate Matter Measurement and Sampling Methods

**Opportunity Reference Code:** EPA-OTAQ-2022-04

**Organization** U.S. Environmental Protection Agency (EPA)

**Reference Code** EPA-OTAQ-2022-04

**How to Apply** *Connect with ORISE...on the GO!* Download the new ORISE GO mobile app in the Apple 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
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. All transcripts must be in English or include an official English translation. 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 recommendations. Click [here](#) for detailed information about recommendations.

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

**Application Deadline** 8/2/2022 3:00:00 PM Eastern Time Zone

**Description** **\*Applications may be reviewed on a rolling-basis and this posting could close before the deadline.** Click [here](#) for information about the selection process.

**EPA Office/Lab and Location:** A research training opportunity is available with the National Vehicle and Fuel Emissions Laboratory (NVFEL) at the Environmental Protection Agency's (EPA) Office of Transportation and Air Quality (OTAQ) located in Ann Arbor, Michigan.

**Research Project:** The selected participant will contribute to the development of improvements to a reference method for measurement of particulate matter (PM) from combustion and turbine engine exhaust streams. This research will include use of multi-physics software to model fluid dynamics, heat transfer, and chemistry of particulate matter evolution in exhaust and sample flow streams, as well as developing and testing the sampling system and measurement instrumentation.

This participant will perform hands-on research at the EPA's National Vehicle and Fuel Emissions Laboratory (NVFEL) which will include testing the sampling system and measurement instrumentation and use of multi-physics software to model fluid dynamics, heat transfer, and chemistry of particulate matter evolution in exhaust and sample flow streams.

**Learning Objectives:** The participant will contribute to the modeling of a particulate matter and gaseous emissions sampling system for a particulate matter number reference system. The model development tools include fluid dynamics, thermal properties, and chemistry of the sampling system and PM transport in the sampling system. This participant will also have hands-on experience with internal combustion engine emissions sampling system components.



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The participant will have opportunities to present and publish results at conferences and in professional journals.

Additionally, the participant will benefit by having an opportunity to learn how national laws and policies are implemented and will become familiar how EPA informs and engages with stakeholders.

The participant will also gain a deeper knowledge of these techniques through collaborations with engineers and scientists at the NVFEL, vehicle manufacturers, aircraft gas turbine engine manufacturers, compression and spark ignition engine manufacturers, and the associated laboratories (such as federal, state, universities, and private) that collaborate with NVFEL personnel.

**Mentor(s):** The mentor to contact for questions about this opportunity is Bob Giannelli ([giannelli.bob@epa.gov](mailto:giannelli.bob@epa.gov)). If you have questions about the nature of the research please contact the mentor(s).

**Anticipated Appointment Start Date:** **September 12, 2022.** All start dates are flexible and vary depending on numerous factors. Click [here](#) for detailed information about start dates.

**Appointment Length:** The appointment may be initially be for one year and may be renewed upon EPA recommendation and subject to availability of funding.

**Level of Participation:** The appointment is full-time.

**Participant Stipend:** The participant will receive a monthly stipend commensurate with educational level and experience. Click [here](#) for detailed information about full-time stipends.

**EPA Security Clearance:** Completion of a successful background investigation by the Office of Personnel Management (OPM) is required for an applicant to be on-boarded at EPA.

**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 EPA. Participants do not become employees of EPA, 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.

ORISE offers all ORISE EPA graduate students and Postdocs a free 5 year membership to the National Postdoctoral Association (NPA).

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 see the [FAQ section](#) of our website. After reading, if you

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have additional questions about the application process please email [ORISE.EPA.REG@ornl.gov](mailto:ORISE.EPA.REG@ornl.gov) and include the reference code for this opportunity.

**Qualifications** The qualified candidate should have received a master's or doctoral degree in one of the relevant fields (e.g. Physics, Chemistry, Mechanical Engineering, Chemical Engineering), or be currently pursuing one of the degrees with completion by October 31, 2022. Degree must have been received within five years of the appointment start date.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
  - **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or anticipated to be received by 10/31/2022 11:59:00 PM.
  - **Discipline(s):**
    - **Chemistry and Materials Sciences** ([3](#) 👁)
    - **Earth and Geosciences** ([2](#) 👁)
    - **Engineering** ([4](#) 👁)
    - **Physics** ([16](#) 👁)