

Opportunity Title: In-Use Testing Capability Research

Opportunity Reference Code: EPA-OTAQ-2016-11

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-OTAQ-2016-11

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.

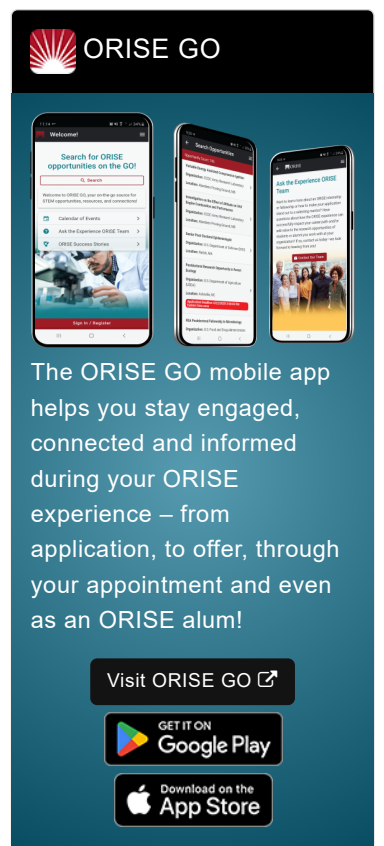
If you have questions, send an email to EPArpp@orau.org. Please include the reference code for this opportunity in your email.

Description A research training opportunity is available at the U.S. Environmental Protection Agency's (EPA) Office of Transportation and Air Quality (OTAQ). This appointment will be served with the National Vehicle and Fuel Emissions Laboratory (NVFEEL), Gasoline Engine Compliance Center (GECC) in Ann Arbor, Michigan.

The project involves research into emission test cell development, field emission measurement, and data acquisition systems.

1) Emission Test Cell Development: This project involves researching technical and regulatory specifications for test engines, equipment and procedures with the objective of designing a versatile Marine and Nonroad SI Engine test cell layout. This project may include designing a marine outboard test tank that accommodates a broad size range of outboard engines, designing test fixtures, mounting brackets, and couplings that isolate vibrations and torsional harmonics; designing, and proving the concept of a field grade fuel measurement system that is safe and robust in harsh environments; and researching the needs of a functional data acquisition system. CAD skills and experience with instrumentation and data acquisition systems will be helpful for the research involved.

2) Field Emission Measurement and Data Acquisition Systems- EPA develops and implements screening and "field" or "Not-to-Exceed" tests to gather in-use emission testing data in order to cross-check product performance in the real world against data generated in laboratory test cell systems. This project involves researching new and more efficient ways to test engines and vehicles in-use. The intern will be involved developing methods and test concepts for in-use emission measurement. This includes equipment setup, test cycle development, pilot testing and data collection, and developing a data analysis tool for the testing of non-road equipment such as generators, fork lifts, boat engines (inboard and outboard), and on-highway Medium-Duty Trucks, using the PEMS (Portable Emission Testing System). Research will be performed on methods and tools to assist with data analysis of in-use performance to identify trends of emission



Opportunity Title: In-Use Testing Capability Research

Opportunity Reference Code: EPA-OTAQ-2016-11

performance in various control modes (cold start, open-loop, activation of AECD's, etc) to look for defeat devices. Research will also be done to develop a method to correlate screening in-use tests to laboratory-grade testing.

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 EPA.

Qualifications Applicants must have received a bachelor's or master's degree in engineering or environmental science within five years of the desired start date or currently be enrolled in a bachelor's or master's program at an accredited U.S. college or university. Students will be required to provide proof of enrollment each semester.

The appointment is full-time for twelve months and may be renewed upon recommendation of EPA and contingent on the availability of funds. The participant will receive a monthly stipend. Funding may be made available to reimburse the participant's travel expenses to present the results of his/her research at scientific conferences. No funding will be made available to cover travel costs for pre-appointment visits, relocation costs, tuition and fees, or participant's health insurance. The participant must show proof of health and medical insurance. The participant does not become an EPA employee.

The mentor for this project is Michael Delduca (delduca.mike@epa.gov). The desired start date is July 1, 2016.

- Eligibility Requirements**

- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 month(s).
 - **Discipline(s):**
 - **Engineering** ([27](#) )
 - **Environmental and Marine Sciences** ([1](#) )