

**Opportunity Title:** Research of Potential Powertrain Controller Methods in Support of Laboratory Test Programs

**Opportunity Reference Code:** EPA-OTAQ-2018-10

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

**Reference Code** EPA-OTAQ-2018-10

**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](mailto:EPArpp@orau.org). Please include the reference code for this opportunity in your email.

**Description** A research 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 Testing and Advanced Technology Division (TATD) at the National Vehicle and Fuel Emissions Laboratory (NVFEL) in Ann Arbor, Michigan.

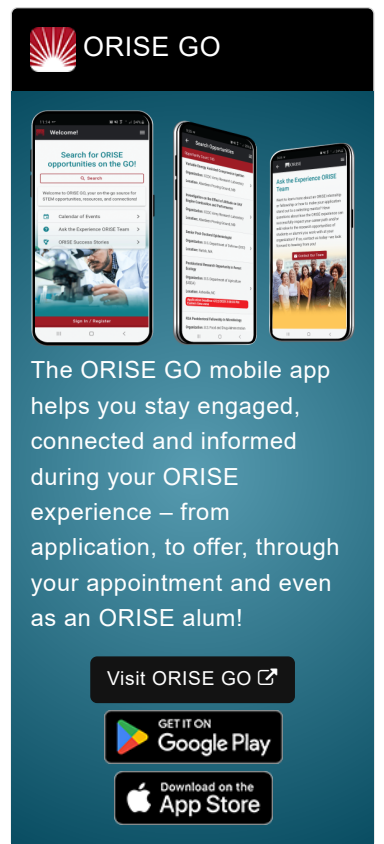
Participants will research options for creating electronic controllers from an existing open Electronic Control Unit (ECU) platform and developing options for installing the controller in the transmission/engine test cell.

This project will allow the participant to research, design, program and configure custom "open ECU" hardware and software to hold transmission in gear, control oil pressure and torque converter lock up, and trouble shoot & debug the system within an operating test cell. Research will include assessing currently available methods of system control, identifying possible ways to obtain transmission inputs and sensor outputs to ensure adequate system control, and monitoring signals over a wide range of test operation.

The participant will learn basic programming and apply these in an experienced-based research project, utilizing project management skills to design, fabricate, and implement: system controls, sensor integration, data acquisition specification and application. The participant will also learn automatic transmission fundamentals, test cell operation, methods to review data for quality, and techniques to formally summarize results and conclusions.

This opportunity will add to the skills the student learns in school. These skills will be exercised by giving the student the opportunity to apply knowledge from mathematical and engineering classes to real world applications.

The participant will learn alongside experienced engineers who will mentor and provide guidance on solving engineering problems.




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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. For additional information about this program, please visit <https://orise.orau.gov/epa/>. This appointment may be full time or part time for one year and may be renewed upon recommendation of EPA and contingent on the availability of funds. The participant will receive a monthly stipend based on level of education. 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 will be Mark Stuhldreher (stuhldreher.mark@epa.gov). The desired start date is June 23, 2018.

**Qualifications** Applicants must be currently enrolled at an accredited U.S. college or university pursuing a bachelor's degree in engineering. Students must provide proof of enrollment each semester.

- Eligibility Requirements**
- **Degree:** Currently pursuing a Bachelor's Degree.
  - **Academic Level(s):** Undergraduate Students.
  - **Discipline(s):**
    - **Engineering** ([27](#) )