

Opportunity Title: EPA Chemical Exposure Analysis Research Opportunity

Opportunity Reference Code: EPA-ORD-NRMRL-LMMD-2020-02

Organization U.S. Environmental Protection Agency (EPA)

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How to Apply 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

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

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

Application Deadline 6/5/2020 3:00:00 PM Eastern Time Zone

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

Two research opportunities are currently available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), National Risk Management Research Laboratory (NRMRL), Land Materials Management Division (LMMD) located in Cincinnati, Ohio.

The determination and assessment of the risk that a chemical may have across the compounds life-cycle are essential to protect human health and the environment. Due to the size and limitations of current evaluation techniques, modules to generate rapid screening of chemicals would be useful to stakeholders to assess end-of-use (EoU) scenarios for tracking chemicals in waste streams and the subsequent environmental releases and worker exposures, including EoU scenarios based on chemical type, function, databases, learning-from-data process models, process simulation, and big data.

To properly study, determine, and develop the best practices in EoU scenarios of chemicals, the participant may broadly conduct research in recycling, recovery, and disposal options for chemicals under interests. Making use of these emerging pathways are part of efforts towards a circular economy. Hence, there is an exciting opportunity for the participant to learn and contribute to the design of pathways and technologies to transform the traditional linear production paradigm (raw material extraction, manufacturing, usage, and disposal) into a circular economy structure.

The research participant's understanding of various EoU options for chemicals may be helpful in contributing to the continued development of computational tools to quantify chemical release profiles. In collaboration with EPA scientists, the research participant may participate in the determination of chemicals present in recycling and disposal options and aid in the preparation of peer-reviewed manuscripts and reports from the conducted research.

This training opportunity will provide the participant with state-of-the-art knowledge and networking opportunities to exchange experiences and information in estimating chemical releases and analysis of their presence in recycling and disposal options. This research is fundamental to enhance the research participants for continuing their next educational paths (pursuit of a Ph.D.



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degree) and acquire qualifications for their future career path in areas such as EoU, process design, modeling, and circular economy of valuable chemicals.

Anticipated Appointment Start Date: Spring/Summer 2020

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. The initial appointment is for three months, but may be renewed upon recommendation of EPA and is contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time at EPA in the Cincinnati, Ohio, area. Participants do not become employees of EPA, DOE or the program administrator, and there are no employment-related benefits.

Completion of a successful background investigation by the Office of Personnel Management (OPM) is required for an applicant to be on-boarded at EPA. OPM can complete a background investigation only for individuals, including non-US Citizens, who have resided in the US for the past three years.

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

A background in chemical process synthesis and optimization, end-of-use material management, Microsoft Excel VBA programming, environmental releases and worker exposures, earning-from-data approaches, big data engineering, and multi-criteria decision-making tools is desirable.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Currently pursuing a Doctoral Degree.
 - **Academic Level(s):** Graduate Students.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([1](#))
 - **Computer, Information, and Data Sciences** ([1](#))
 - **Engineering** ([3](#))
 - **Environmental and Marine Sciences** ([2](#))