

Opportunity Title: EPA Postdoctoral Fellowship in Lung Models for Chemical Testing

Opportunity Reference Code: EPA-ORD-CPHEA-PHITD-2021-11

Organization U.S. Environmental Protection Agency (EPA)

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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 3/31/2022 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 postdoctoral research opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Public Health Environmental Assessment (CPHEA), Public Health and Integrated Toxicology Division (PHITD) located in Research Triangle Park, North Carolina.

Research Project: The US Environmental Protection Agency is interested in developing new approach methodologies (NAMs) to advance the human relevance of in vitro approaches while also reducing, refining, and replacing the use of in vivo animal testing for inhaled chemical testing and research. This research opportunity will focus on the development and application of advanced 3D organotypic co-culture models of different regions of the human respiratory tract for chemical testing and health effects research. Emphasis will be placed on improving physiological relevance of in vitro culture models, assays, and exposure scenarios while also generating data describing the cellular and molecular mechanisms involved in adverse effects of, and/or tissue resilience to, different chemicals and exposure scenarios. This research opportunity will also examine whether the biological effects of environmental injustice affect the response to inhaled chemicals at the cellular level and whether these effects can be modeled in vitro.



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Learning Objectives: Under the guidance of a mentor, the participation may be involved in any of the following training activities:

- Developing and utilizing organotypic 3D in vitro co-culture models of the human lung for inhalation toxicology
- Culturing, differentiating, and maintaining donor-matched primary human cell derived in vitro models
- Conducting in vitro exposures to evaluate the effects of inhaled chemical exposures on different cell types within the airways
- Utilizing cell and molecular biology methods to evaluate gene expression, cellular signaling pathway and transcription factor activation, and cellular functions
- Conducting fixed and live cell imaging experiments to evaluate models and assess the effects of chemical exposures
- Collaborating with a diverse group of scientists across sectors (e.g., Government, industry, and academia)
- Presenting research at scientific conferences and EPA internal meetings
- Contributing to peer-reviewed manuscripts describing research findings

Mentor(s): The mentor for this opportunity is Dr. Shaun McCullough (McCullough.shaun@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

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

Appointment Length: The appointment will initially be for one year and may be renewed up to three or four additional years 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

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employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.

Questions: Please see the [FAQ section](#) of our website. After reading, if you have additional questions about the application process please email ORISE.EPA.ORD@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received a doctoral degree in one of the relevant fields, or be currently pursuing the degree with completion by the appointment start date. Degree must have been received within the past five years.

Preferred skills (if you have any such experience, please describe in your application):

- Highly motivated, independent, methodical, organized, and goal-oriented researcher
- Adaptable to a rapidly evolving research environment
- Committed team player with fundamental leadership skills
- Strong scientific writing and presentation/communication skills
- Experience managing multi-disciplinary research projects
- Good documentation/record keeping skills
- Detailed and precise data analysis
- Strong experience with human cell culture (experience with co-culture and/or primary cells preferred)
- Strong experience with molecular biology techniques including RNA/protein/DNA isolation, quantitative PCR, and Western blotting
- Experience with fixed and live cell imaging preferred
- Fluent in Microsoft Word, Excel, and PowerPoint
- Experience with GraphPad Prism

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 6/30/2022 11:59:00 PM.
- **Discipline(s):**
 - **Life Health and Medical Sciences** (46 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).