Opportunity Title: Characterizing the Effects of Non-Chemical & Environmental Stressors on Human Lung Stem Cells
Opportunity Reference Code: EPA-ORD-NHEERL-TAD-2019-01

Organization U.S. Environmental Protection Agency (EPA)

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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 recommendations

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.

Application Deadline 5/29/2020 3:00:00 PM Eastern Time Zone

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

A research opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), National Health and Environmental Effects Research Laboratory (NHEERL), Toxicology Assessment Division (TAD) in Research Triangle Park, North Carolina.

The ability of somatic-organ specific stem cells to be maintained, differentiate, and function is absolutely required for the maintenance of overall health, well-being, and longevity. The impact which non-chemical stressors (e.g. diet, life-style, stress, etc.) and their interactions with environmental chemical exposures have on organ specific stem cells is unknown. This research project will examine the impact with non-chemical stressors and chemical exposures have on post-natal or somatic airway progenitor cells known as basal cells. The research will develop "human airway in a dish" assays to assess how chemicals effect basal cell viability, differentiation, and function. In addition, the project will examine similar effects within target animal or in vivo studies to confirm in vitro models. This research will inform regulatory decision related to chemical risk assessment as well as interactions with real world non-chemical stressors such as obesity and psychosocial stressors. The research will be closely integrated with ongoing studies designed to discover and develop adverse outcome pathways linking key chemical induced molecular initiating events to adverse health outcomes of regulatory concern.

Under the guidance of a mentor, the learning objectives for the research participant will include:

- Problem solving and experimental design formulation
- Data analytics and interpretation
- How to evaluate, validate, and qualify In vitro approaches for in vivo extrapolations in terms of their sensitivity, specificity, and predictability
- Pulmonary toxicology and physiology
- Use of state of the art assay platforms and software packages
- Communicating results by presenting results at scientific meetings and assisting in their publication in peer-reviewed journals

Due to the broad impact and applications of this research project to various Agency programs, the research participant will have the opportunity to interact with and learn from other scientists across

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NHEERL's various health divisions as well as the National Center for Computational Toxicology. These mentoring interactions will occur at both the technical and research formulation levels.

The mentor for this opportunity is Kevin Dreher (Dreher.kevin@epa.gov).

Anticipated Appointment Start Date: June 30, 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 one year, 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 Research Triangle Park, North Carolina, 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 doctoral degree in one of the relevant fields, or be currently pursuing the degree and will reach completion by the start date of the appointment. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Hands-on and in-depth research laboratory experience in tissue culture, molecular analyses (e.g. RT-PCR, immunohistochemisty, ELISAs, etc.)
- Use of software such as Word\PowerPoint\Excell\ADI LabChart, statistical analyses e.g. SigmaPlot
- Knowledge of cardiac and\or vascular physiology
- Ability to maintain laboratory records
- Ability to effectively manage time and develop protocols

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 6/30/2020 11:59:00 PM.
- **Academic Level(s):** Graduate Students or Postdoctoral.
- **Discipline(s):**
  - **Environmental and Marine Sciences** (2 👁)
  - **Life Health and Medical Sciences** (11 👁)