

**Exposure Science/Mass Spectrometry/Biostatistics/Environmental Epidemiology
Postdoctoral Fellowship
University of California San Francisco
Program on Reproductive Health and the Environment**

The [UCSF Program on Reproductive Health and the Environment \(PRHE\)](#) is seeking rising leaders in the field of environmental exposures, chemistry/computational chemistry, epidemiology and/or environmental health sciences for one postdoctoral candidate position. Highly motivated applicants will have opportunities to work with a dynamic team on analyzing cutting edge exposome data analyzing nontargeted high resolution mass spectrometry using advanced computational and statistical techniques to identify novel chemical exposures for a large and diverse sample of pregnant participants. Project will also advance methods to evaluate cumulative and potentially interactive effects of multiple environmental and social stressors and interrogate biological pathways of effect. This exciting work will be guided by a team of multidisciplinary scientists in environmental epidemiology, analytical chemistry, computational biology, and perinatal health research at UCSF and other collaborating institutions. Examples of recent work from this project include publications in [EHP](#), [Environmental Science & Technology](#), [Epidemiology](#), [Journal of Exposure Science and Environmental Epidemiology](#) and coverage in the [New York Times](#).

PRHE is a fast-paced, multi-disciplinary group of scientists and collaborators from other universities and labs nationwide who are committed to advancing scientific inquiry, professional training, research translation, public education, and health policies to reduce the impacts of environmental contaminants on reproductive and developmental health. We mentor and promote early career scientists by supporting their training and enhancing their capacity to engage in environmental health research, policy and education. In addition, we work closely with post-docs to support their efforts to seek extramural funding, including several successful K awards, to support their research in ways that advance their career objectives of becoming independent scholars. We are also committed to advancing diversity, equity and inclusion efforts in the environmental health field more broadly, through our research, mentoring program and science policy program.

PRHE's research areas include:

- Evaluating maternal and fetal concentrations of multiple novel and established environmental chemicals through innovative biomonitoring studies that apply both targeted and non-targeted methods.
- Investigating associations between environmental chemical exposures and adverse pregnancy and developmental outcomes.
- Applying novel and complex statistical and computational techniques to evaluate the cumulative and potentially interactive effects of exposures to multiple environmental and social stressors and how these stressogens affect maternal, perinatal, and child health disparities.

Knowledge/Skills:

The ideal candidate will have a strong background in epidemiology, biostatistics, computational biology, environmental health, or bio- and/or cheminformatics, and evidence of peer-reviewed publications. Excellent problem-solving skills, creative and interdisciplinary thinking, and the ability to learn and work with multiple software tools are required. Applicants must possess excellent written and oral communication skills and be fluent in both spoken and written English.

The successful candidate must have:

- PhD in Environmental Chemistry, Analytical Chemistry, Computational Chemistry or other closely related fields.
- Strong training in biostatistics and epidemiological methods.
- Excellent oral and written communication skills and track record of peer-reviewed publications.
- Previous experience in Mass Spectrometry in operating and maintaining MS instruments
- Previous experience in data analysis with standard programming languages like Python or R
- Previous experience in chem-informatics with RDKit or similar packages
- Previous experience with machine learning is preferred but not required

Some Responsibilities include:

- Sample preparation for chemical analysis of organic molecules by LC-HRMS and GC-HRMS
- Preparation of analytical reagents, standards and calibration solutions, etc.
- Method development
- QA/QC controls
- Operation and troubleshooting of mass spectrometers
- Data extraction and processing from LC-HRMS and GC-HRMS instruments
- HRMS data analysis with programming languages like Python and data structure packages like NumPy, Pandas, SciPy, scikit-learn, Matplotlib and Seaborn.
- Algorithm development for chem-informatics applications with packages like RDKit and Mordred
- Machine learning model development using TensorFlow and PyTorch
- Other duties include literature search, preparing data for presentations, assistance with scientific report/manuscript writing.

The postdoc will join an interdisciplinary group of basic scientists, epidemiologists, clinicians, and biostatisticians at UCSF Program on Reproductive Health and the Environment, EaRTH Center, UC Berkeley and other research institutions. They will also interact with clinicians, governmental decision-makers and the staff of non-governmental organizations in the field of environmental and public health to interface with PRHE's outstanding research translation work. The Postdoctoral Scientist will be advised by and work closely with Dr. Tracey Woodruff and

Dr. Dimitri Abrahamsson. The initial appointment is for one or two years, with an opportunity for an extension after successful completion of the first year. Start date is flexible, but preferable by early winter 2024.

PRHE is in the Department of Ob/Gyn in the School of Medicine at UCSF and affiliated with the [UCSF Environmental Research Translation for Health \(EaRTH\) Center](#). The EaRTH Center offers globally recognized expertise, cutting-edge science and state-of-the-art lab support, multi-disciplinary collaborations, community outreach and engagement, and grant funding to create new opportunities in environmental health research. UCSF is a premier medical sciences institution dedicated to promoting health worldwide through excellence in research, teaching and patient care. The School of Medicine is ranked #1 nationwide in NIH support, and UCSF is ranked annually as one of the top hospitals in the US. UCSF is committed to and offers excellent services for career training of future scientists.

Interested candidates should submit the following application materials to prhe@ucsf.edu:

- 1) a cover letter that includes a statement of research experience and interests,
- 2) a curriculum vitae,
- 3) pdf copies of a recent publication or writing sample,
- 4) contact information for three references.

The University of California is an equal opportunity, affirmative action employer.

More information on PRHE can be found on our [website](#) and in our [blog](#).