

The Faculty of Pharmacy, Paris Cité University and IRSN (Institute of Radiological Protection and Nuclear Safety), France, are looking for a

**Postdoctoral researcher on  
Bayesian learning algorithms to fit high dimensional hierarchical models  
in radiation epidemiology**

The RadoNorm project (Managing risks from radon and NORM) is a collaborative project H2020 NFRP Euratom from 2020 to 2025. RadoNorm is designed to initiate and perform research and technical development in support of European Union Member States, Associated Countries and the European Commission in their efforts to implement the European radiation protection Basic Safety Standards. The proposed multidisciplinary and inclusive research project will target all relevant steps of the radiation risk management cycle for radon and NORM exposure situations. The project includes 56 partners from 22 EU member states and associated countries and collaboration with groups in the US and Canada.

***Mission***

This postdoctoral position is concerned by the Task 4.6 « Aims at considering various sources of uncertainties in radon induced lung cancer risk inference », more specifically by Subtask 4.6.1 « Establishing Bayesian hierarchical models for lung cancer risk analysis in human » supervised by Sophie Ancelet (IRSN).

The aim is to refine the estimation of the risk of death by lung cancer due to low levels of chronic exposure to radon from the joint cohort of French, German, Czech uranium miners, to account for the complex patterns of radon exposure measurement error and for the dosimetric uncertainties in the estimation of the dose response relationship by proposing and fitting Bayesian hierarchical models (improved considerations of uncertainties)

The candidate will join a research team of statisticians. We are looking for a post-doctoral researcher who can work on developing hierarchical models and implementing Bayesian learning algorithms to estimate radon induced lung cancer risk in a context implying various sources of uncertainties.

***Location and duration***

16 months from May/June 2023 to August/September 2024

BioSTM — UR 7537, Faculty of Pharmacy, Paris Cité University, 4, avenue de l'Observatoire 75006 Paris and Ionizing Radiation Epidemiology Laboratory (LEPID), IRSN, 92260 Fontenay-aux-Roses

Supervisors : C. Guihenneuc (University of Paris Cité) and S. Ancelet (IRSN)

CoSupervisor : S. Hoffmann (Université Louis-et-Maximilien de Munich)

## ***Profile***

The successful applicant should have a PhD in mathematical statistics or applied statistics and experience in Bayesian statistic including algorithm implementation. The candidate has to work independently in projects with knowledge in statistical software (e.g. R) and in Python and/or C++ Programming Language.

## ***Information***

Enquiries can be made to Chantal Guihenneuc ([chantal.guihenneuc-jouyaux@u-paris.fr](mailto:chantal.guihenneuc-jouyaux@u-paris.fr)) and Sophie Ancelet ([sophie.ancelet@irsn.fr](mailto:sophie.ancelet@irsn.fr))

## ***Remuneration***

The remuneration will be established according to the candidate's profile and experience, minimum net monthly salary at 1830 euros

## ***Applications***

To apply for this vacancy, please send an email to [chantal.guihenneuc-jouyaux@u-paris.fr](mailto:chantal.guihenneuc-jouyaux@u-paris.fr) and [sophie.ancelet@irsn.fr](mailto:sophie.ancelet@irsn.fr)

Please ensure that you attach the following additional documents:

- Curriculum vitae (CV);
- Motivation letter;
- Summary of the PhD thesis;
- Recommendation letters.