# Project proposal template
# Graduate School studentships
# March 2015

| | |
|---|---|
| *Project title* | Exposure assessment of potentially harmful agents in soil |
| *First Supervisor* | Dr — Peter Hooda |
| *Second Supervisor* | Prof. Gavin Gillmore |
| *School* | Geography, Geology and Environment |
| *Other member of supervisory team (no more than three KU supervisors in total)* | Dr Rupert Hough, The James Hutton Institute, Aberdeen; Dr Giovanni Leonardi, Public Health |
| *Specific requirements beyond 2:1 degree* | |

Project summary

**(max 4,000 characters)**

**Background**

Our current understanding of soil exposure in the UK population is extremely limited. The current risk assessment paradigm makes large assumptions based on very uncertain data to estimate direct exposures via soil ingestion or dust inhalation. Because these are direct routes of exposure, these pathways have the potential to represent significant exposures in comparison to better characterized exposure pathways. Thus, in order to improve accuracy of risk assessments, more attention needs to be paid to these exposure pathways. Public Health England have recognized these important needs and have initiated an Environmental Public Health Tracking (EPHT) programme that aims to explore and develop a methodology for addressing environmental hazards that delivers integrated, local and national surveillance of those hazards, exposure assessment, and relating health effects of environmental exposures to those hazards. This PhD will be closely aligned to the EPHT programme.

**Aims & Potential Outcomes**

This study aims to begin to better characterize human exposures from potentially harmful agents in soil, both direct (i.e. ingestion/inhalation of soil) as well as indirect (i.e. via uptake into food crops). This project will utilize study populations included in the EPHT programme. This PhD will provide evidence necessary to estimate any health burden related to such hazards and exposures, informs responses to new exposures, and supports the on-going development of environmental epidemiology and toxicology in PHE.

**Methods/Approach**

This project provides a student with the opportunity to become involved in a large public health initiative such as EPHT.

This project will build on previous soil exposure work undertaken by Hooda, as well as dietary exposure work undertaken by Hough and Leonardi as part of an EU FP5 project (ASHRAM). The proposed project will have three main activity strands:

***Activity 1: Experimental study to evaluate soil ingestion within PHEs EPHT study populations***
***Activity 2: Analysis of soil samples from Activity 1 to determine specific exposures***
***Activity 3: Develop a methodology to translate soil information into dietary exposures***