

Title of the thesis	CROhn disease and Pollution of Soils
Acronym	CROPS
Reference number	017

Hosting institution	Employer
Université de Lille Website: https://www.univ-lille.fr/home/	CNRS Website: http://www.cnrs.fr/en
Hosting research unit 1	Hosting research unit 2
Name: Laboratory of Civil Engineering and Geo-Environment Acronym: LGCgE Identification number: URL 4515 Address: Université de Lille Cité Scientifique, 59650 Villeneuve-d'Ascq Website: https://www.lgcge.fr/fr/	Name: Institute for Translational Research in Inflammation Acronym: INFINITE Identification number: UMR 1286 Address: Faculté de Médecine - Pôle recherche Place Verdun 59045 Lille Cedex Website: http://lille-inflammation-research.org/fr/
Principal supervisor	Co-supervisor
Name: Annabelle Surname: DERAM Email: Annabelle.deram@univ-lille.fr Phone: +33320623737	Name: Corinne Surname: GOWER ROUSSEAU Email: corinne.gower@chru-lille.fr Phone: +33676289054
Foreign co-supervisor	
Name: Gilles Surname: COLINET Email: gilles.colinet@uliege.be University: University of Liege Research unit: Terra Research Center, Water-Soil-Plant exchanges Website: https://www.terra.uliege.be/cms/c_4082850/en/terra-terra-innovation-game	

Thesis information	
Keywords	Soil characterization ; Crohn disease, environmental health, space clusters, risk factors
Abstract	<p>Crohn's disease (CD) is a chronic inflammatory bowel disease (IBD) which is not a rare disease and affects 3 million people worldwide. So far, their cause is unknown and there is no cure. It is the ambition of this project to contribute to know the cause. Although many genetic studies have isolated more than 200 genes associated with these pathologies, the weight of genetics in their occurrence remains low. Piovani et al. (2019) cite tobacco, urban life, appendectomy, antibiotic therapy and vitamin D deficiency as risk factors with a high standard of proof. Regarding other factors, the results obtained to date are inconsistent, and studies of the geographical distribution of CD cases suggest that additional environmental factors must be considered. Moreover, from a systematic recording of all the new cases for more than 30 years (EPIMAD registry), a spatial heterogeneity of the incidence is reported, suggesting the major role of environmental quality in the occurrence of these pathologies. In this context, we propose to study whether the presence of pollutants in the external environment is a risk factor for CD. This project will test the hypothesis of a link between the quality of urban topsoils and the space clusters of Crohn's disease. The scientific question is: is there a difference in soils contamination between the</p>

	<p>clusters of high- and low-incidence of CD? Is the soil more degraded in clusters of high-incidence? If so, what are the pollutants that cause these differences? Social inequalities will be integrated in the interpretation of the results with regard to their influence.</p> <p>According to an ecological approach, the PhD student will have to first establish a diagnosis of each spatial cluster of high/low incidence (Step 1: Characterization of topsoils in CD clusters based on existing data and Step 2: Characterization of topsoil CD clusters based on new soil samplings). He/she will then study the statistical link with the incidence of disease within clusters to determine whether soil pollutants may be risk factors for Crohn's disease (Step 3: Construction of a socio-environmental spatial database and step 4: Mapping and statistical analyses).</p> <p>The LGCgE-SVF is seeking new talented PhD student Fellows. Outstanding candidates are expected to develop multidisciplinary research for a 36-monthes, addressing fundamental questions fields, in an inspiring and collaborative environment.</p> <p>Skills: Soil analysis; Environmental exposure with GIS, Data sciences, spatial statistics, environmental health It is also expected that the candidate is strongly willing to participate in international symposia and seminars.</p> <p>Good editorial qualities, especially for the writing of international publications are desired.</p> <p>This position is available at: Université de Lille - Faculté de pharmacie, LGCGE – sciences végétales et fongiques</p> <ul style="list-style-type: none"> - Supervisor: Pr. Annabelle Deram (annabelle.deram@univ-lille.fr) - Co-supervisor: Dr. Gower-Rousseau Corinne <p>INFINITE – UMR 1286 WP1 Environmental risk factors of inflammation CHU de Lille</p>
<p>Expected profile of the candidate</p>	<p>The applicant should be fluent in French and English.</p> <p>Interest for field observations</p> <p>Soil knowledge</p> <p>Statistical and geostatistical knowledge</p> <p>Database management</p> <p>Working in multidisciplinary team</p> <p>Good writing quality</p> <p>Curious, source of proposals, scientific rigour</p> <p>Driving licence</p>
<p>Application procedure</p>	<p>The application procedure is detailed on the European programme PEARL website www.pearl-phd-lille.eu. The funding is managed by the I-SITE ULNE foundation which is a partnership foundation between the University of Lille, Engineering schools, research organisms, the Institut Pasteur de Lille and the University hospital.</p> <p>The application file will have to be submitted before April 15, 2020 (10h Paris Time) and emailed to the following address : international@isite-ulne.fr.</p>
<p>Net salary and Lump Sum</p>	<p>A net salary of about €1,600 + €530 per month to cover mobility, travel and family costs.</p>