LE STUDIUM RESEARCH FELLOWSHIP

– PIVOTS PROGRAMME – ARD 2020

(Open to international experienced researchers)

Research Field: Soil Science and Biogeochemistry

CONTEXT

The region Centre-Val de Loire Ambition for Research and Development 2020 (ARD 2020) PIVOTS (Environmental Technology Innovation, Development and Optimisation Platforms project) Programme is supported by LE STUDIUM Loire Valley Institute for Advanced Studies for the attraction and recruitment of international experienced researchers.

The PIVOTS Programme is a coordinated set of experimental and analytical platforms focused on environmental quality monitoring and sustainable management of natural resources (soil, subsurface, surface water, groundwater, sediment and air) within a context of global change.

Innovation in the area of the environment, ecotechnology, and ecoservices is a major challenge for sustainable development in today's societies. Innovations may arise from an integrated approach based research involving academic and industrial experts together at all stages of the value chain, from fundamental research to validation of products and services. The goal of the PIVOTS Programme is to accomplish this integration and to promote the emergence of an economic stream in the area of environmental metrology, remediation processes and associated services. PIVOTS is targeting researchers who embody, in their profile, the three key words that drive the research values of LE STUDIUM Loire Valley Institute for Advanced Studies: Curiosity, Imagination and Intuition.

The successful candidate will benefit from the scientific environment of the region, will be part of an outward looking and stimulating pluridisciplinary scientific and international cultural environment and will work under the leadership of the Institut des Sciences de la Terre d'Orléans (**ISTO**) - CNRS, in Orleans, France.

SCIENTIFIC RESEARCH CONTEXT

Peatlands cover a small fraction of the continents (3%), but they contain a huge amount of carbon (C), making these systems important to take into account in global C studies. As these ecosystems are under global (climate change) and local (mainly drainage) threat, they could switch from C sink to source function, with potential reinforcing effect on climate change (positive feedback). Considering their important C content, C fluxes (CO_2, CH_4, which are greenhouse gases-GHG) in such systems have to be monitored to testify how they respond to global and local disturbances. Furthermore, the determinisms of these fluxes have to be understood to be able to incorporate peatlands in global earth models. The peatland biogeochemistry team regrouping scientists from ISTO and LPC2E is dedicated to understand C dynamics in peatlands, through monitoring, experimental and modelling activities.

One of the main current research projects of the team is the setting up of a Platform to study GHG Exchange between Soils and the Atmosphere in peatland (PESAt). Specifically, it consists in implementing 4 different operations: 1) eddy covariance station in La Guette peatland, 2) small automatic chamber, 3) made to measure high automatic chambers for tall vegetation, 4) gradient method equipment. This platform will help to understand the determinisms of the GHG fluxes at different scales of space and time. A fraction or the entire amount of these gases is produced by microbial communities in the soil. The response of GHG fluxes to the main factors (temperature, oxygen availability, plant communities) is actually dependent on the response of the microorganisms in the soil in terms of quantity (biomass) and characteristics (community composition). The microbial scale is not in the scope of this platform. The successful candidate will help to fill this gap, allowing a finer understanding of microbial processes behind GHGs production and emission and thus the response of peatlands to global change.
For more information, consult: https://www.sno-tourbieres.cnrs.fr/

MISSION OF THE RESEARCH SCIENTIST

The successful candidate will have the following missions:
- strengthen the 'biogeochemistry' team of ISTO laboratory on studies dealing with the role of microbial and enzymatic processes in C dynamics in peatlands
- set up analytical tools to study soil microbial community (PLFA, NLFA, other biomarkers) and enzymes
- implement experiments to study the effect of the major (biotic and abiotic) factors controlling GHG fluxes on microbial communities
- use the PESAt platform as a frame for the experiments
- communicate the results in international congress and through peer reviewed articles in high ranked journals

ESSENTIAL SKILLS AND EXPERIENCE

- Senior researcher profile with:
    - publications and significant international networks;
    - ability to mobilize the literature and to build testable hypotheses;
    - research experience in the field of study, able to innovate and interact with diverse stakeholders including industry;
- Experience in microbial soil ecology, soil biogeochemistry, laboratory and field measurements of GHG fluxes;
- Experience in organic geochemistry and the related analytical methods;
- Ability to initiate new projects in the field of biogeochemistry;
- Strong organizational and time management skills - able to prioritize work, manage time effectively and deliver results on time;
- Excellent written and verbal communication skills, including the ability to make clear and concise presentations and prepare compelling grant proposals.
- Proven ability to control the whole research chain from the definition of the problem to the communication of results, both for academic, industrial R & D and non-academic audiences;
- Experience and motivation for team work and ability to establish fruitful scientific exchanges with researchers and actors of different technical and scientific cultures;

CONDITIONS OF ELIGIBILITY

The fellowship is intended to attract an experienced international researcher in possession of a doctoral degree and a minimum of five years of full-time research experience.

- Applicant researchers must be national or long-term resident of a country other than France, i.e. having spent a period of full-time research activity of at least 5 consecutive (without breaks in research) years in a country other than France.
- Applicant researchers must also comply with the following mobility rule: not having resided or carried out their main activity (work, etc.) in France for more than 12 months in the 3 years immediately prior to the deadline of application. Compulsory national service and/or short stays such as holidays are not taken into account.

CONDITIONS OF EMPLOYMENT

The position is based in Orleans, France and offers a contract of one year.
The successful candidate will be welcomed into the PIVOTS team network and LE STUDIUM faculty of international research fellows working in the region Centre-Val de Loire. Researchers will be provided with the necessary means of work (laboratory facilities, office, telephone, internet, access to databases, computer tools, etc ...).
The scientific working languages are French and English.

Entitlements detailed in the French labour contract of employment include:

- a personal salary.
- rental costs of a fully furnished apartment for the candidate and her/his family. Utilities (water, heating, electricity, tax) have to be paid by the fellow.
- Affiliation to the French social security protection scheme and a contribution to a private medical protection scheme for all health costs complementing the French basic social security coverage.
- Working hours, vacation and travelling expenses are bound by the same regulation as those effective for the personnel of the hosting laboratory.
- Logistics and administrative assistance by a member of LE STUDIUM operational team before and during the fellowship (housing, bank, insurance, schooling…).

CONDITIONS OF APPLICATION

Online application via LE STUDIUM platform: **Apply section**
The deadline for application is **22nd October, 2018.** Applications will be reviewed as they come in. Position is expected to be filled in the 1Q2019.
The application shall consist of three elements:

- A completed online LE STUDIUM application form with personal information and details of track records;
- A curriculum vitae of maximum two pages including information not in the online application;
- A motivation letter.

Upload documents as pdf files.