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## Placement opportunities for students in BSc (o) in Pharmaceutical science

**Title:** Glycobiologic related strategies for the understanding and treatment of neurodegeneration.

**Techniques:** Cell biology (eukaryotic cell culture), molecular biology (RT-qPCR, transfection) and biochemistry (ELISA, WB, enzymatic activity assessment, possibly of protein production).

**Seminars:** Literature and research results in English.

For me it is difficult to give today a fine subject since research evolves, but the topic is stable and the stage title should fit needs in 2013. For helping the candidates the detail of the research group is in the internet site. But if you need more detailed project, of course I can give more lines. Tell me please.

<http://www.vjf.cnrs.fr/spip/crret/-Glycannes-chimie-et-actions-?lang=en>

Dulce papy

[papy@u-pec.fr](mailto:papy@u-pec.fr)

# 2

## Place in the “Interactions biologiques dans les sols” team of the Bioemco laboratory

(<http://www.biologie.ens.fr/bioemco/presentation/index.html> ) , at the Université Paris EstCréteil (english: <http://www.en.u-pec.fr/university-paris-est-creteil-upec--412460.kjsp?RH=Univ> , Spanish: <http://www.es.u-pec.fr/universidad-paris-est-creteil-upec--448420.kjsp?RH=WEBEN-EN>, 61 avenue du Général De Gaulle, 94010 CRETEIL, very close from Paris)

**Title: Do interactions between microorganisms, plant and earthworm affect temperature sensitivity of soil organic matter decomposition?**

In the context of global warming, the effects of temperature on CO<sub>2</sub> fixation by plants, soil organic matter decomposition by microorganisms or respiration by earthworms have been well documented. However, biotic interactions between those major soil organisms are not yet taken into account in global change models despite the fact that plants-microorganisms and earthworm-microorganisms interactions have been shown to have a huge importance in soil functioning. In an experiment in controlled conditions, we will investigate the effect of temperature on soil organic matter mineralization on a combination of microcosms containing soil alone, soil with plants, soil with earthworms and soil with both macro-organisms. Respiration of the whole system will be measured with a CO<sub>2</sub> analyzer during the experiment. The temperature sensitivity of soil organic matter decomposition will be calculated on subsamples from each of these microcosms using the Q<sub>10</sub> parameter which represents the proportional change in CO<sub>2</sub> emission given a 10°C change of temperature.

**Skills:** Experimentation with plants, earthworms, microorganisms; gas analysis; microbiology; plant ecophysiology. Fluent English and/or fluent French.

**Schedule:** The training course is planned from the 1<sup>st</sup> of April 2012 to end of July 2012; it can be adapted according to the candidate, but cannot be shorter than 3 full months.

**Supervision:** The set up of the experiment will be supervised by Manuel Blouin, CO<sub>2</sub> analysis will be supervised by Thomas Lerch. Both are assistant professors at UPEC.

**Contacts:** [thomas.lerch@u-pec.fr](mailto:thomas.lerch@u-pec.fr) [tblouin@u-pec.fr](mailto:tblouin@u-pec.fr)

**Compensation:** 436 euros per month.