Postdoctoral Fellowship available at the University of Brest in the “Laboratoire Universitaire de Biodiversité et d’Ecologie Microbienne (LUBEM EA 3882)”

Subject: Characterization of mycotoxin-production associated pathways in *Penicillium* spp.

Context
The “Laboratoire Universitaire de Biodiversité et d’Ecologie Microbienne (LUBEM EA 3882)” at the University of Brest and the “Ecole Supérieure d’Ingénieurs en Agroalimentaires de Bretagne atlantique” (Brittany, France) is proposing a 1 year Postdoctoral fellowship position.

The lab
Research at the LUBEM-Plouzané laboratory concerns the biodiversity and ecology of food related and environmental filamentous fungi. Research on microbial ecology is focused on increasing knowledge on fungal communities, their ability to produce secondary metabolites such as mycotoxins as well as on diagnostic and control methodologies.

The project
Filamentous fungi are important microorganisms in the agri-food sector. They can be divided into 2 categories: i) filamentous fungi with a negative impact associated with food spoilage or mycotoxin production and ii) filamentous fungi with a positive impact used for raw material transformation. For cheese-making, filamentous fungi are of great importance and are used together with other microflora (bacteria, yeast) to transform the raw products into cheese. For example, filamentous fungi are essential for blue cheese production (Roquefort, Danish Blue, Gorgonzola,….) and the production of soft cheeses with mould rinds (Camembert, Livarot, Pont l’Eveque). In this context, the main filamentous fungi encountered are *Penicillium roqueforti* in blue cheeses and *Penicillium camemberti* in soft cheeses. However, while these microorganisms are widely used by the cheese-making industry for their positive impact on cheeses (ex. aroma production, colour, texture,…), filamentous fungi also have the potential to produce mycotoxin(s). Indeed, under certain environmental conditions, *P. roqueforti* can produce mycophenolic acid, PR toxin and roquefortin, amongst others, while *P. camemberti* can produce cyclopiazonic acid. To date, various mycotoxin biosynthetic pathways have been elucidated in some filamentous fungi, in particular for the most toxigenic ones for which regulations have been established (aflatoxins, ochratoxin A, fumonisins,…). On the other hand, the biosynthetic pathways involved in mycotoxin-production for the food related fungi *P. roqueforti* and *P. camemberti* have not yet been elucidated while our lab has access to their complete genome sequences. In this context, the goal of this study is to elucidate gene clusters involved in mycotoxin-production using gene silencing techniques and LC/MS. The results should allow a better understanding of the genetic basis involved in food-related filamentous fungi.

The candidate
The successful applicant will have a Phd. Degree in Microbiology, preferentially in *Mycology*, and a strong scientific background in Molecular Biology and Biochemistry in order to perform a multidisciplinary approach (Mycology, Molecular Biology, Biochemistry) as well as an innovative spirit. Key skills a successful candidate might possess include competence in *fungi transformation*, gene silencing techniques and LC/MS analyses. The candidate will also have strong interpersonal
skills for easy integration into the research team. The successful applicants will join an interactive, multidisciplinary team in the LUBEM-Plouzané laboratory.

**Important:** Candidates can only apply if they are not French citizens OR if they have spent at least 12 months outside of France over the last 36 months (for the following period May 2010 - May 2013)

**Salary:** 1832 € net per month  
**Starting date:** before mid-May

**How to apply:** Resume + motivation letter + the name and contact details for 2 references (deadline March 8th, 2013)

**Contacts:**
Dr. Monika COTON / Dr. Laurence MESLET-CLADIÈRE  
Laboratoire Universitaire de Biodiversité & Ecologie Microbienne- EA3882  
ESIAB -Parvis Blaise Pascal -Technopôle de Brest Iroise  
29 280 PLOUZANÉ  
Telephone : +33 (0)2 90 91 51 00  
Email : monika.coton@univ-brest.fr / laurence.meslet@univ-brest.fr