European Training Network

PhD Student Position

Applications are invited from candidates of excellence wishing to pursue a PhD degree in the field of cancer precision medicine**.** Students will receive training within a pan-European academic/private sector research training network, specifically focused on brain tumour research.

Glioblastoma (GBM) is the most frequent, aggressive and lethal of all brain tumours. It has a universally fatal prognosis with 85% of patients dying within two years. New treatment options and effective precision medicine therapies are urgently required. The GLIOTRAIN European Training Network (ETN), which comprises 9 funded beneficiaries and 14 associated partner organisations from 8 countries, will train 15 innovative, creative and entrepreneurial PhD students.

The research objective of GLIOTRAIN is to identify novel therapeutic strategies for application in GBM, while implementing state of the art next generation sequencing, systems medicine and integrative multi-omics to unravel disease resistance mechanisms. Research activities incorporate applied systems medicine, integrative multi-omics leveraging state of the art platform technologies, and translational cancer biology implementing the latest clinically relevant models.

The consortium brings together leading European and international academics, clinicians, private sector and not-for-profit partners across GBM fields of tumour biology, multi-omics, drug development, clinical research, bioinformatics, computational modelling and systems biology. Thus, GLIOTRAIN will address currently unmet translational research and clinical needs in the GBM field by interrogating innovative therapeutic strategies and improving the mechanistic understanding of disease resistance. The GLIOTRAIN ETN addresses current needs in academia and the private sector for researchers that have been trained in an environment that spans translational research, medicine and computational biology, and that can navigate confidently between clinical, academic and private sector environments to progress applied research findings towards improved patient outcomes.

The programme is funded through the Horizon 2020 Marie Skłodowska-Curie Actions Programme. Selected candidates will be offered a highly competitive salary (as per generous Marie Skłodowska-Curie Actions funding rules). *During their training each student will spend time on secondment in academic, clinical and/or private sector research institutions thus must have a willingness to travel.*

Eligibility: At the time of recruitment, the candidate must not have resided or carried out their main activity (work, studies, etc.) in the country of their recruiting organisation for more than 12 months in the 3 years immediately prior to start of the project. Short stays such as holidays and/or compulsory national service are not taken into account.

Candidate requirements: Candidates can be of any nationality, but are required to undertake transnational mobility. Candidates should ideally possess a Master's degree in a relevant academic field, however exceptional candidates holding a Bachelor's degree will be considered. Candidates must be within the first four years of his/her research career. Applications from candidates who already possess a doctoral degree will not be considered.

Potential candidates should be able to demonstrate motivation and a strong eagerness to learn. Individuals must possess excellent written, oral communication and organizational skills. In addition, applicants should have the ability both to work independently and as part of a team. Previous related research experience will be a distinct advantage. All students must be willing to travel and will be required to complete international secondments.

Funding: PhD positions are funded at the level stipulated by Marie Skłodowska-Curie Actions funding rules with a gross salary of c. €41,000 for positions in Ireland. Final salary calculations take into account living costs of the recruiting country and additional family allowances are available where applicable. Salaries are subject to standard taxation and pension contributions.

Application process:

Required documents: a full CV, a motivation letter including a description of previous research experiences and contact details or recommendation letters of two 2 referees. **Only documents in English will be accepted.**

Submission: applicants should submit the documentation to gliotrain@rcsi.ie by **March 30th 2018. Successful applicants will commence their projects as soon as possible.**

Applications failing to include the requested documentation, where the candidates do not meet the eligibility criteria or which do not indicate the preferred projects WILL NOT be considered.

Selection process:

Shortlisted candidates will be invited for in-person interviews (and/ or by telephone / Skype). Positions will be offered to candidates following approval by the GLIOTRAIN co-ordinator and training committee. We will endeavour to provide feedback to unsuccessful applicants where possible.

GLIOTRAIN PhD Projects

Project 9: Systems-based integration and analysis of a deeply phenotyped GBM cohort correlating to 'extreme' and 'poor' responding patients

Location: Royal College of Surgeons in Ireland

Principle Investigator: Prof Jochen Prehn (jprehn@rcsi.ie)

Collaborators: Dr Alexander Kel (geneXplain, Germany), Dr Ahmed Idbaih (ICM Institute for Brain and Spinal Cord, France).

Project Summary: The project will molecularly phenotype and functionally interrogate patient cohorts correlating to 'extreme' and 'poor' GBM responders. The strategy will employ the process of 'natural pre-selection' to identify key differences in the underlying biology facilitating identification of new functional master drivers. Natural pre-selection been successful in describing metabolic aberrations leading to diabetes and obesity, but has thus far not been employed in GBM. To identify novel GBM resistance mechanisms, the PhD student 9, hosted at RCSI will focus on deep phenotyping a cohort of gender balanced n=100 GBM patients grouped according to favourable or unfavourable clinical outcome despite similar (histo)pathological features. The PhD student will be seconded to UPMC for 3 months to identify and prepare a collection of n=100 GBM samples for subsequent analysis. On return to RCSI, (s)he will commence molecular subtyping of this cohort of 'poor' and 'extreme' responders to include WES, RNA seq, metabolomic profiling (NMR spectroscopy) and reverse phase protein array -based protein and phosphoprotein analysis (>150 validated antibodies). The PhD student will employ deterministic models developed by RCSI to quantitatively identify key biological differences between 'poor' and 'extreme' responders, and to relate these differences to GBM subtypes. Subsequently during a 5 month secondment to SME beneficiary GEX, PhD student 9 will link transcriptomic profiles to master transcription regulators and upstream, targetable signalling pathways, Back at RCSI, (s)he will integrate outputs from molecular profiling, deterministic systems modelling and GEX platform analysis to define specific, targetable master drivers of 'poor' and 'extreme' responders and their interaction with key signalling pathways and GBM subtypes.

Specific Requirements:

- MSc or BSc in Bioinformatics / Human Genetics / (Bio)Engineering or a related discipline with preference given to those candidates with experience in Tumour Biology/Oncology.
- Experience with Analysis of Genomics Data / Next Generation Sequencing (RNA Seq, Shallow Sequencing etc) or Proteomics data.
- Programming skills and/or Statistical Analysis Methods are of advantage
- 3 Year Duration

Informal Inquires:

For informal inquiries regarding the application and eligibility questions, contact gliotrain@rcsi.ie. For informal queries regarding specific projects contact the Principal Investigator directly.

Best of luck!
GLIOTRAIN Recruitment Team