



PhD Position at Universitat Autònoma de Barcelona

Advanced Statistical Methods for Cytogenetic Radiation Biodosimetry

PhD programme in Mathematics.

OFFER - This is a cross disciplinary collaborative PhD position funded by the UK Health Protection Agency (HPA) and registered at the Universitat Autònoma de Barcelona (UAB) in Spain. The project will provide a unique opportunity to contribute to the development of new approaches for statistical analysis of DNA-damage data for the purposes of characterising radiation dose.

LOCATION - Research will be carried out jointly between the two centres, with approximately 50% of time spent at UAB and 50% of time spent at HPA (UK). In addition the successful candidate will have the opportunity to train with biodosimetry experts at the Ukrainian Institute for Medical Radiology (IMR) in Kharkiv.

DURATION – 3 years; approximate start date of September 2012.

NET YEARLY SALARY - £15.740/year (approx. €19.284/year or €1.607/month). In addition, HPA and UAB also will be able to provide the student with all the usual benefits including an office, personal computer and travel to conferences and the planned training sessions at the Institute of Medical Radiology in Kharkiv, Ukraine.

SUPERVISORS - Drs Liz Ainsbury and Kai Rothkamm at HPA Chilton and Professor Pere Puig at UAB. This is a cross disciplinary project which will bring together expertise from biological and statistical disciplines. The successful candidate will develop skills in statistical modelling as well as in the principals of processing of biological samples, which will afford them a unique position within the worldwide field of biological dosimetry.

OBJECTIVES - Following Chernobyl and Fukushima, the accuracy of radiation dose estimation using biological samples has proven its vital importance both to initial assessment of potentially exposed populations and to retrospective analysis to indicate risks of health effects. Statistically, there are several forms and classes of distributions that can be used to model the probability of occurrence of events. The question that will be addressed by this project is how best to correctly quantify statistical uncertainty associated with dose estimates based on cytogenetic damage induced by radiation in complex scenarios of radiation exposure. The aims will be achieved by developing mathematical solutions to the

statistical limitations that have been previously identified. The anticipated outcome is the increased reliability of cytogenetic dose estimates.

REQUIREMENTS - The student suitable to undertake this project will have a Master's degree in a relevant discipline (e.g. mathematics/statistics/physics/biology). A 4 year degree in a relevant subject may also be considered. Evidence of a strong ability in experimental biology and/or computational mathematical methods will be an advantage. The student should be able to demonstrate the ability to work independently and flexibly within a geographically dispersed research team and to be willing and able to engage in cross disciplinary collaborative work which will have wide ranging implications within the international research field. As a UK public funded body, the HPA cannot fund applicants from outside the EU. Good working English is assumed, and Spanish would be an obvious advantage. The candidates who best match the specifications may then be invited for interview.

PRESELECTION and CONTACT - Interested applicants should send a CV, and a letter of interest. The deadline for applications is Juny 15th, 2012. For applications and further details please contact Dr Liz Ainsbury (liz.ainsbury@hpa.org.uk) or Professor Pere Puig (ppuig@mat.uab.cat).