Three Exciting Salford University Placement Opportunities

This year, Salford University has decided to support placement opportunities held in the Biomedical Research Centre in the main University Campus. All projects led by a distinguished group of faculty from the Environment and Life Sciences School will focus mainly in **discovering new ways to prevent, diagnose and treat paediatric cancers.** We are looking for enthusiastic students searching for a laboratory based experience which will provide rewarding opportunities. The successful students will work in a collaborative team of dedicated colleagues who are willing to provide training and support your research and educational journey.

To **APPLY** for these unpaid placements, **please send your CV/Cover Letter** to **ELS-placements@salford.ac.uk** (detailed description of the projects is also provided below).

DEADLINE FOR APPLICATION 30/5/2017.

All CV/Cover letter will be directed to the principal investigators that will consider your application and get in touch with you to arrange an interview. All successful applicants will start their placement experience in September 2017.

1. Gold Nanoparticles as Radiation Enhancing Anticancer Medicine (**Dr Krpetic**);
2. A bioanalytical approach to elucidate biological response mechanisms of potential novel anti-leukaemic drug therapies in acute myeloid leukaemia cells (**Dr Denbigh**);
3. n-3 PUFAs for potential acute lymphoblastic leukaemia combinational therapy **(Dr Allen);**

1. **Gold Nanoparticles as Radiation Enhancing Anticancer Medicine** (**Dr Krpetic**);

Radiation coupled with custom-designed nanoparticles offers an interesting promise for future anti-cancer therapeutics. Since gold nanoparticles are proven excellent X-ray dose enhancers, this project aims to look at future use of new anisotropic nanostructures for the applications in cancer nanotechnology. Gold nanoparticle libraries will be developed varying surface features/geometry and surface chemistry in order to systematically assess number of parameters on the radiosensitisation outcome. The project is mainly based on nanofabrication and characterisation of nanoparticles. Nanomaterials developed will be tested at Queen's University Belfast in the Centre for Advanced and Interdisciplinary Radiation Research (CAIRR) in collaboration with Prof Frederick Currell.

2. **A bioanalytical approach to elucidate biological response mechanisms of potential novel anti-leukaemic drug therapies in acute myeloid leukaemia cells** (**Dr Denbigh**);

Acute myeloid leukaemia (AML) is an aggressive and common childhood cancer often resulting in patients dying within weeks of diagnosis and there is an urgent clinical need for new treatment. This project will investigate the anti-leukaemic potential of novel compounds in AML cells. The student will work with cell culture and advanced analytical instrumentation, employing mass spectrometric platforms within the BRC and state of the art spectroscopy instrumentation at The Manchester Institute of Biotechnology. Biochemical changes of AML at a cellular level when treated with these novel compounds will be explored to contribute to understanding drug mechanistic modes of action.

3. **n-3 PUFAs for potential acute lymphoblastic leukaemia combinational therapy (Dr Allen);**

A link between inflammation and cancer is established and there is a potential to employ anti-inflammatory agents for the adjuvant treatment of cancers. Marine n-3 polyunsaturated fatty acids (PUFAs), exemplified by eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), are typically derived by humans from consuming fish oils and have received much attention for their anti-inflammatory properties and completely safe therapeutic potential. A Kidscan-funded placement student will investigate the cytotoxic effects of the n-3 PUFAs, EPA and DHA as a combination treatment with the chemotherapeutic agents vincristine, doxorubicin, etoposide and dexamethasone using human MOLT-4 cells as a model for acute lymphoblastic leukaemia.