Identification and characterisation of novel suppressors of DNA replication stress.

Supervisors: Spencer Collis, Molecular Oncology and Helen Bryant, Molecular Oncology

Project: Increased and persistent oncogene-induced proliferation in tumour cells often leads to mis-regulation of DNA replication. This causes under- or over-replicated chromosomal DNA, heightened replication stress, and a high instance of unstable replication forks that are prone to collapse and generate DNA damage/genetic instability. These hallmarks of cancer can also create cancer cell specific vulnerabilities that can be exploited for therapeutic gain. Many new drug treatments exploiting such vulnerabilities are currently in various stages of clinical trials. Human genetic research classically involves manipulating single genes of suspected function and analysing the phenotype generated to test a hypothesis. However, in the post-genomics era it is possible to systematically deplete each gene in a library of cells using a human genome-wide RNAi screen providing a high-throughput method for identifying novel factors involved in a specific biological process. This project takes advantage of the complementary research interests of three highprofile research groups in the Sheffield Cancer Research Centre, and the excellent recently established YCR-funded RNAi screening facility (SRSF), to identify and characterise novel regulators of replication fork stability. The long-term aim of this project is to identify potential novel drug targets, ultimately leading to the development of new or improved anti-cancer treatments.

Funding: Non-clinical PhD studentships are available for entry in October 2014 and will provide funds for four years to cover:

- A stipend of £19,000 per year
- Research consumables
- PhD and university fees (UK/EU student fees only)

Further non-clinical PhD studentships are available for entry in October 2014 onwards. These studentships will provide:

- A stipend £13,726 per year for 3 years
- PhD and university fees (UK/EU student fees only)
- Research consumables
Enquiries:
Interested candidates should in the first instance contact the lead supervisor:
Spencer Collis – s.collis@sheffield.ac.uk

Eligibility:
Graduates with a minimum 2:1 qualification.

How to Apply:

Please read all the instructions carefully; incomplete or incorrect applications will not be processed. Do NOT use the standard University of Sheffield application process. Follow the process described below:

Please submit, by email to scrc@sheffield.ac.uk, the following documentation (attached as word or pdf documents):

- **Your CV**
- **Two references** (NOT just referee names and addresses, but actual references)*

**Instructions for Referees** please answer the following questions as part of your reference:

1. Where would you place this student academically compared to others you have taught/supervised?
2. Approximately how many students have you ever taught/supervised?
3. Rate the candidate from 1 to 5, where five is high, on his/her:
   a) drive and ambition
   b) work ethic
   c) creativity and innovation
   d) acceptance of criticism and feedback
   e) display of interest in the work of others
   f) interaction in a group environment

- **A cover letter** outlining the following:

  1. Which project(s) you are applying for (maximum 3 projects in order of preference)
  2. How your skills and experience are suited to the project(s) you are applying for
  3. Any research experience you have obtained
* If references cannot be submitted as an attached letter please ask your referee to send their reference direct to scrc@sheffield.ac.uk clearly stating your name in the reference and subject title of the email

Please note if you are applying for multiple projects please only submit one application outlining the projects you are applying for in the covering letter.

**Closing Date: Wednesday 20th November 2013**