

UGRL Scholarship Learning Contract

This document provides the framework for the project to be undertaken by the UGRL Scholar. It provides an outline of the larger research project to which the Scholar will contribute and the detail of that contribution, including timing, duties, outcomes and supervision arrangements.

It will be considered by the Faculty/School Scholarship Committee and if a Scholarship is awarded for the project should be signed by the Faculty Academic Lead, the project supervisor and the scholar.

- 1. Title of Overarching Research Project:** Targeting epigenetic mechanisms as potential treatments of neuronal disorders
- 2. Research Project Leader:** Dr Ian Wood
- 3. Scholarship Project Supervisor:** Dr Ian Wood
- 4. Working title of Scholarship Project:** HDAC inhibitors and neuroprotection
- 5. Period of Scholarship Project Work** (*see note i*): summer 2016, summer 2017
- 6. Summary of the research to which the Scholar will contribute (200 words):**

We are currently investigating the neuroprotective properties of HDAC inhibitors and the epigenetic mechanisms involved in neurodegenerative diseases such as Alzheimers and motor neurone disease as well as neuronal death induced by trauma to the brain such as stroke.

- 7. Summary of the work to be undertaken by the Scholar (200 words) :**
(to be used to advertise the Scholarship)

Histone deacetylases (HDACs) remove acetyl groups from histones (and other proteins) regulating the level of acetylation and gene expression. Recently inhibitors of HDACs have shown much potential promise as therapeutic agents for many neuronal disorders including motor neurone disease, epilepsy, ischaemia, multiple sclerosis and Alzheimer's disease. The aim of this project will be to investigate the therapeutic potential of these compounds using appropriate models to mimic neuronal disease states. The work will involve the use of cultured organotypic brain slices, cell culture and assays that will quantify effects on proliferation, apoptosis and gene expression. The project will require care and good sterile technique. This project will use biochemical (including molecular biology, PCR, ELISA and cloning), cell culture techniques and would be appropriate for any bright, hardworking, conscientious individual with an interest in molecular technology.

An epigenetic blockade of cognitive functions in the neurodegenerating brain. Graff, J et al. Nature 483, 222–226 (2012)

Cognitive function in health and disease: the role of epigenetic mechanisms. Mungenast AE, Tsai LH Neurodegener Dis. 2012;10(1-4):191-4

The potential of epigenetic therapies in neurodegenerative diseases. Fabio Coppedè, Front. Genet. 5, 220 (2014)

Chromatin crosstalk in development and disease: lessons from REST. Ooi L, Wood IC. Nat Rev Genet. 2007 Jul;8(7):544-54

- 8. Detail of the work to be undertaken by the Scholar (500 words) (see note ii):**

The scholar will undertake laboratory research in my laboratory (Garstang 6-41c). They will contribute specific experiments and have a specific project with objectives that will contribute toward our global aims.

9. Detail of the Leadership development to be undertaken as part of the project (*see note iii*) The scholar will begin by being responsible for carrying out experiments and presenting the data in an appropriate way. This will be developed and the scholar will take on more responsibilities over time including providing the appropriate analysis, presenting it to the research group. Ultimately they will be expected to lead the discussions for and drive forward experimental design for the project.

10. Outputs expected of the Scholar (200 words) including the final report (*see note iv*)

The scholar will be expected to provide a short presentation accompanied by a written report after each period of work outlining their experiments and findings with suggested ways to progress the project.

11. Details of supervision arrangements (*see note v*) The scholar will be directly supervised by Dr Ian Wood and one formal laboratory meeting will be held each week though it is expected there will be daily interaction. The scholar will be directly supervised when needed eg to learn a new technique by Dr Wood or an appropriate laboratory group member.

12. Resources required for the Scholar to undertake the project (*see note vi*): Funding for molecular biology consumables for the project is required, £2000.

(to be completed if a Scholarship is awarded)

Project Leaders – please tick to confirm the following:

Consideration of Health and Safety context and appropriate risk assessment and risk management exercises have been completed

Relevant ethical clearance has been sought

Scholar and project leader are aware that any additional expenses or equipment costs are the responsibility of project leader to plan for and approve (if approved, students must provide receipts)

Signature of Scholar _____

Date: ____/____/____

Signature of Project Leader _____

Date: ____/____/____

Notes

- i. Scholars are expected to work the equivalent of six weeks full-time over the summer following their first and second year, they need not be continuous weeks but the dates are to be agreed between project supervisor and student. Any changes to the dates in the Learning Contract to be updated and signed by the supervisor and the scholar.
- ii. The work is normally assumed to be campus-based unless otherwise agreed, and where this is the case allocated office space and equipment (eg in spaces allocated to PG students) is expected to be available during office hours for the period of the project

The majority of the work must not take place in term time, but exceptionally an early start when exams and assessments are complete may be appropriate, but please note the dates of the induction programme that all scholars are expected to attend. If there is an event or output falling during term time it would be useful for the scholar to contribute to, please ensure time demands are light and does not conflict with programme study.

- iii. **Leadership development:** The project work undertaken by the Scholar is required to develop both research and leadership skills. All Scholars receive leadership training before they start their project and expect to be able to practice and develop those skills as part of their Scholarship Project. Projects should therefore include a specific strand of work which enables the Scholar to practice and develop leadership skills in some aspect of the project, eg data collection, analysis and presentation; dissemination event organisation; experimental design; project management; client feedback; market research design and evaluation. The University's Leadership and Management Standard informs the leadership development to be provided by the Scholarship scheme and details are provided in Annex 2c on page 13.
- iv. **Outcomes:** Describe the intended project outcomes, these may be broken down for summer year 1 and summer year 2, or one long-term goal over the two years. Outcomes must be realistic and clear, and depending on the nature of the project outcomes might include reports, events, media, artefacts, experiments etc). A clear statement of timeframes for work to be completed and reported on is essential so that the responsibility of the Scholar is clear.

Reports: Please indicate the reporting expectations. It is expected that this should include at least a first report at the end of summer 1 covering both the project work and the development of the appropriate leadership skills and a final report at the end of the second period of research which should be a reflective and summative report of the whole project covering both the project work and the development of the appropriate leadership skills. Both reports (each of between 1000 and 2500 words depending on the nature of the project) should be scheduled to be completed within the periods of project work and not left for completion during term time.

- v. The minimum requirement for UGRL Scholarship supervision is a formal meeting between scholar and project supervisor at the start, middle and end of each period of project work. The Scholar will provide a record of each of these meetings, to include a review of progress and a action points, to be confirmed in writing by the project supervisor
- vi. Funding is available to cover any essential costs directly associated with project work the Scholar will be undertaking. This is not a grant, it is available where necessary to ensure the Scholar has the resources they need to undertake their project. It might, for example, cover additional equipment needed by the Scholar, travel and accommodation costs to attend a conference to inform the project work or to present its outcomes. Any equipment purchased remains the property of the School and must be retained for the benefit of future

scholars. Any funds not used in this way are returned to the Alumni Office at the end of the Scholarship.