Queen's University Belfast

Animal Welfare and Ethical Review Body (AWERB)

Annual Report 2018-19

1. Overview

The Department of Health (DOH) requires that each designated establishment maintains a viable ethical review process, which is open to continued assessment by the local inspector. The satisfactory operation of the ethical review process is a standard condition of the establishment licence held by QUB under the Animals (Scientific Procedures) Act (ASPA) 1986 (and subsequent amendments).

2. Animal Welfare and Ethical Review Body (AWERB)

2.1 The primary function of the AWERB is to review project licence applications, amendment requests and mid-term reports, and to discuss issues directly relevant to animal welfare and ethics. The specific role of the AWERB is outlined in Appendix 1. The AWERB is comprised of representatives from all relevant research areas, including Medicine, Dentistry & Biomedical Sciences, Biological Sciences, Nursing & Midwifery, Pharmacy and Psychology. This ensures wide involvement of staff within the establishment, as recommended by the DOH.

2.2 At the end of the reporting period, the committee composition was as follows:

i. Academic Staff: Eight representatives from relevant research areas, who are typically current project licence holders. This includes a Chair and Deputy Chair, who are appointed by the QUB NCO.

ii. Post-doctoral Staff: Two postdoctoral contract researchers who are currently working within one of the above research areas and are routinely involved with animal research.

iii. Postgraduate Students: Two PhD students who are currently working within the above research areas and are routinely involved with animal research. These committee members are rotated on an annual basis to provide invaluable experience to junior researchers.

iv. BSU Staff: The Biological Services Unit (BSU) manager and one deputy as Named Animal Care and Welfare Officers (NACWO).

v. BSU Director: Academic lead of the QUB animal facility.

vi. QUB Named Training and Competency Officer (NTCO): Academic lead for personal licensee management and training.

vii. External Lay Representative: At least one non-QUB lay member who is appointed in conjunction with Research Governance.

viii. Named Veterinary Surgeon (NVS): Two independent veterinary surgeons appointed by the NCO.

ix. DOH Inspector: Invited to be in attendance at all AWERB meetings.

x. QUB Named Compliance Officer (NCO): Invited to be in attendance at all AWERB meetings.

2.3 During the reporting period six AWERB meetings were held (24th October 2018, 12th December 2018, 20th February 2019, 17th April 2019, 19th June 2019, 28th August 2019) at which 5-12 members were present, thus satisfying the quorum of five attending

members set by the terms of reference. Detailed minutes of discussions and decisions were prepared and will be made available for review by the DOH inspector as requested.

3. Project Licences

3.1 A project licence provides authorisation from the DOH for a defined programme of work, and is typically valid for 5 years. At the end of the reporting period, there were 46 project licences issued to QUB, held by 41 different staff members, which is comparable to 2017-18.

3.2 At QUB, project licence application typically involves the Chair of the AWERB, together with the DOH Inspector, NVS and NACWO, working together with the applicant from an early stage of the process in relation to e.g. structure, content and experimental protocols, with particular regard to animal ethics and welfare. Once the application has undergone several iterations, it is sent to the rest of the AWERB, who then review the completed submission.

3.3 The process for project licence application is outlined in a Standard Operating Procedure which is available on the QUB School of Medicine, Dentistry and Biomedical Sciences staff intranet. The applicant (or appropriate designate) is required to attend the AWERB meeting at which their application is considered so that they may discuss any issues or concerns directly with the committee. They are required to satisfy the AWERB that the proposed research is fully justified in relation to realistic outcomes of the project balanced against animal use. Typically, further revisions are requested by the committee and final ethical approval is only granted by the Chair upon their satisfactory completion.

3.4 During the reporting period, the AWERB considered the following 11 project licence applications (4 new projects and 7 renewals):

- Role of microvasculature in cancer metastasis
- Antibody production to contaminants found in food, feed and the environment
- Studies in blood cancer
- Characterisation and modulation of immune responses in respiratory disease models
- Cancer metabolism: implications for therapy
- Therapeutic evaluation of anti-cancer formulations
- Study the role of inflammation in retinal degenerative diseases
- Improving bone healing
- Pathogenic mechanisms and treatment of diabetic retinopathy
- Novel therapeutic strategies for the treatment of poor outcome cancers
- New strategies to enhance tissue vascular repair

3.5 A project licence provides authorisation only for a specified programme of work as defined in the original application and is normally approved for a period of 5 years. If, subsequent to issue, the project licence holder decides that they would like to modify an experimental protocol or make any other change to the licence, no matter how small, they are required to apply to the AWERB for ethical approval.

3.6 The application process is similar to that for project licence applications, with advice generally sought from and/or offered by the Chair, DOH Inspector, NVS and NACWO, prior to ethical review by the rest of the AWERB (this is also covered within the Standard Operating Procedure).

3.7 During the reporting period, 10 project licence amendment applications were reviewed and approved. These comprised: (1) introduction of parasites into the peritoneal cavity or small intestine via surgical incision; (2) addition of intra-vitreal, sub-conjunctival, and sub-retinal administration routes of sodium iodate in order to induce choroidal atrophy and for administration of cells/substances; (3) creation of a Cre inducible keratinocyte specific p53 KO in Ptch1 heterozygous mouse model and treatment of associated lesions; (4) change of licence holder (x2); (5) increase in animal numbers for induction of infectious acute pulmonary inflammation); (6) extension of age limit for toxin-induced CNS demyelination from 18 to 24 months; (7) revision of fate of animals sections to indicate that pine martens used for ecology studies are subsequently set free in the wild; (8) inclusion of a new protocol to allow non-invasive assessment of cardiovascular function in experimental models of respiratory disease; (9) addition of caudal artery injection for establishment of metastatic bone models or introduction of therapeutic vectors; (10) additional use of immunised rabbits for isolation of both monoclonal and polyclonal antibodies. Minor amendments were typically reviewed and approved by the NVS and AWERB Chair whilst major amendments, such as addition of a new protocol, were reviewed by the committee prior to final review/approval by the NVS and AWERB Chair.

3.8 Mid-term reviews of all active project licences are undertaken by the AWERB at two and a half years, in which the project licence holder is required to report on:

i. project progression, including details of animal usage (licensed and Schedule 1), retrospective severity, and research outputs;

ii. project management, including details of meetings with the NACWO, BSU staff and NVS;

iii. project refinement, including plans for reducing animal use or improving animal welfare, and details of any observed adverse effects;

iv. future plans, estimating animal usage and detailing available funds for completion of the work.

3.9 The mid-term review process also involves a mandatory meeting with the NVS to discuss project progression and refinement. Only when the AWERB is satisfied that acceptable progress has been achieved, the conditions of the licence have been adhered to, and that appropriate future plans have been put in place (including funding), is ethical approval granted for project continuation. During the reporting period, 7 mid-term reviews were undertaken, all of which were approved for continuation.

4. Final Reports

4.1 In order to maintain appropriate oversight of animal research conducted under QUB project licences and to assess the balance of outputs/outcomes against animal use, the AWERB routinely review and approve all final reports before they are submitted to the DOH. Upon expiry of their project licence, holders are required to report on the same categories as detailed above in relation to mid-term review. In 2018-19, the DOH also introduced a requirement for retrospective assessment of relevant projects (typically those including one of more severe protocols) which involved submission of a lay summary to be published on the Home Office website alongside the original non-technical summary approved at the start of the project. Retrospective assessments were reviewed and approved by the AWERB in parallel with project licence final reports. Another change introduced by the AWERB in 2018-19 is that all final reports and

retrospective assessments are now considered in advance of project licence expiry and typically in parallel with the relevant renewal application.

4.2 During the reporting period, the AWERB reviewed and approved the following 15 final reports, 6 of which included retrospective assessment:

- Passage and treatment of parasitic helminths in mammalian hosts
- Studies in diabetic retinopathy Cataract: mechanisms, treatment and complications
- Studies in blood cancer (including retrospective assessment)
- Antibody production to chemical contaminants found in food, feed and the environment
- Ecology and physiology of badgers
- Ecology and physiology of hedgehogs (including retrospective assessment)
- Chronic and acute immune responses in respiratory disease models (including retrospective assessment)
- Therapeutic evaluation of macromolecular agents (including retrospective assessment)
- At-sea behaviour of rehabilitated harbour seals
- Model of BRCA1-related cancer (including retrospective assessment)
- Study the role of inflammation in retinal degenerative diseases
- Endothelial progenitor cells in wound healing
- Production of antibodies to food contaminants
- Acute Respiratory Distress Syndrome: mechanisms of pathophysiology and therapeutic approaches to cure (including retrospective assessment)

5. Other Business

5.1 Although the main role of the AWERB relates to project licence application and review, other issues are discussed but only when they have the potential to directly impact upon animal welfare and ethics, and are covered by its remit outlined in Appendix 1. For example, NACWO, NVS, BSU Management and Regional AWERB Hub reports are included as standing agenda items at each AWERB meeting. Specifically, the following additional business was considered and discussed by the AWERB during the reporting period:

i. QUB 3Rs prize: Applications were invited from current QUB personal licence holders for the QUB 3Rs prize was awarded at the NI ASPA Training Day for the most innovative and impactful approach to the 3Rs. The prize was awarded to a researcher in the Centre for Experimental Medicine for introduction of novel approaches which have led to significant reduction in animal use.

ii. AWERB Terms of Reference: A revised AWERB Terms of Reference has been approved by the University Research Ethics Committee is being implemented in collaboration with QUB Research Governance. The major changes are introduction of fixed committee terms and a Deputy Chair position and the expectation that all members attend a minimum of 4 AWERB meetings per academic year, in addition to allocation of new project licence applications to a committee member who will lead the review and discussions.

iii. Future expansion of the BSU: The committee has discussed the importance of putting forward proposals for BSU expansion, particularly in relation to imaging, radiotherapy and GLP facilities, further to the impending development of the MBC

site. It has been agreed that the BSU Director and Chief Technician will represent its interests at future Faculty Estates meetings.

iv. Understanding Animal Research Schools programme: A debate on the use of animals in research was held at the NI Science Festival event in the Centre for Experimental Medicine in February 2019. At the start of the debate 73% of the attending audience thought that animals should be used in medical research with this figure increasing to 83% at its conclusion. A tour of the BSU by a group of secondary school teachers was held in December 2018 with the plan to begin roll out of the QUB animal research Schools programme as soon as possible.

v. AWERB Hub: Another successful NI ASPA Training Day was held on 30th January 2019. An AWERB Hub Sharepoint site has been developed which is hosted by QUB and is accessible by all regional AWERB Chairs. This will act as a repository for relevant documents and information with the aim of sharing and promoting good practice across the region. Exchange of AWERB members and technical staff has been encouraged and supported through the Hub. The annual Animals in Science Committee AWERB Hub workshop was held in London on 13th March 2019 although the Chair was unfortunately unable to attend due to travel delays.

vi. Meeting of QUB Named Persons: On 30th September 2019, the annual meeting of all the QUB Named Persons – NCO, NVS, NACWO, and NTCO – was held together with the AWERB Chair to discuss several important topics relevant to animal research and welfare.

Appendix 1

Role of Animal Welfare Ethical Review Body

The Animal (Scientific Procedures) Act 1986 (and subsequent amendments) gives clear guidance as to the operation of the Animal Welfare Ethical Review Body. Specifically, the AWERB has a statutory duty:

i. For the ethical review of all applications for research involving animals protected under the Animal (Scientific Procedures) Act 1986.
ii. To discuss and develop ethical advice and guidance to the Establishment Licence Holder on all matters related to animal welfare, care and use within Queen's. This shall include, but is not limited to, the standards of animal care and accommodation, including breeding stock, and the humane killing of animals.
i. Examine proposed applications for new project licences and review any amendments to existing project licences to determine local impact, how the 3Rs (Replacement, Refinement and Reduction) are being applied, and to advise the Establishment Licence Holder on the acceptability of the applications/amendments.
ii. Throughout the lifetime of projects the AWERB shall review ongoing projects ensuring continued operation against the approved project licence. Projects shall be reviewed at mid-term and on completion to enable lessons to be learnt and provide greater understanding of the 3Rs.
iii. To promote awareness of animal welfare.
iv. To promote the development and uptake of the 3Rs and advise staff how to apply them.
v. To set up and regularly review procedures and protocols, including management systems, for monitoring, reporting and following up on the acquisition, welfare and proper use of animals at your establishment.
vi. To support named people, and other staff dealing with animals, on animal welfare and ethical issues.
vii. To advise on re-homing animals including appropriate socialisation.
viii. To respond to enquiries and consider advice received from the national Animals in Science Committee.
ix. To provide an annual report to the University Governance and Integrity Committee giving assurances to the University on compliance with the requirements of ASPA.