

Wellcome Trust Biomedical Resource and Technology Development Grant 212940/Z/18/Z:  
Foundations for routine 3D X-ray histology (XRH)

**Memorandum of Collaboration**

The 'Foundations for routine 3D X-ray histology (XRH)' project ([www.xrayhistology.org](http://www.xrayhistology.org)) in Southampton runs for 3 years from January 2019 on, and is based on technology developments for soft tissue-optimised micro-computed tomographic ( $\mu$ CT) imaging (<https://doi.org/10.1016/j.ajpath.2019.05.004>). The project aims to stimulate and support novel and exploratory projects, introducing three-dimensional (3D) XRH to the wider biomedical research and clinical pathology community and identifying application-specific imaging needs. We anticipate that most projects will be limited to relatively small proof-of-principle studies with a maximum of 5 samples in the first instance. We can offer limited free-of-charge collaborative  $\mu$ CT imaging based on the following understanding (this is NOT a formal agreement).

1. **Consultation:** Collaborators must consult with the XRH Team.
2. **Contact person:** A person should be identified in the Collaborator's team, liaising as primary contact with the XRH Team.
3. **Priority, eligibility and resources available:** The priority, eligibility and resources are determined by the XRH Project Management Group. We particularly aim to encourage:
  - [a] Initial trials exploring image quality and the added value of XRH datasets.
  - [b] Adding  $\mu$ CT to existing projects where it was not part of the initial experimental design.
  - [c] Generating pilot data in advance of larger funding applications.We are limited by equipment and staff-time availability. This arrangement is **not** suitable where the scheduling of scans is part of the critical path of a project (e.g., where external bodies and/or related projects rely on the results according to set deadlines). For such investigations, please consult the  $\mu$ -VIS X-ray Imaging Centre (<https://www.southampton.ac.uk/muvis/access/index.page>) and/or the Biomedical Imaging Unit (<https://www.southampton.ac.uk/biu/equipment/index.page>).
4. **Costs:** A contribution to cover the costs of consumables or data management may be necessary and, if so, will be discussed with the Collaborator.
5. **Health & safety, ethics:** The Collaborator must confirm samples are non-hazardous and required ethics approval is in place. Copies of safety assessments or ethical approval may be needed. Human samples and data should be anonymised. Any exceptions must be discussed with the XRH Team before transferring any samples.
6. **Data collection:** The Collaborator should provide empty, NTFS-formatted, labelled, external hard disk(s) with sufficient capacity to collect their data, or another suitable method for data transfer.
7. **Data storage:** All data will be stored by the XRH Team for up to one month. After this time, it may be deleted. Data of one proof-of-principle study (up to 5 samples) will be stored by the XRH Team for the duration of this Wellcome Trust project.
8. **Case studies:** Collaboration with the XRH Team is contingent upon working to produce a brief case study or substantive report of the work, including both text and images describing the project and the XRH datasets. This should be within 90 days of the project completion and may be used for inclusion in our report to the Wellcome Trust and for XRH publicity. Redaction of specific technical details, or embargoes prior to publication will be considered on a case-by-case basis.
9. **Publications and acknowledgements:** The work should be planned in anticipation of publication. In any publication(s) the collaboration should be recognised with co-authorship of XRH staff according to contemporary publishing practice (e.g. [www.nature.com/authors/policies/authorship.html](http://www.nature.com/authors/policies/authorship.html)). The XRH Teams' contribution should be acknowledged in any publications\*.
10. **Use of image data:** With appropriate acknowledgement, Collaborators and the XRH Team will have the right to use *mutually agreed* representative image data from collaborations for capability demonstrations, publicity material and general interest publications.
11. **Grant applications and future collaborations:** A key objective of this Wellcome Trust project is to promote & demonstrate XRH capabilities for future research. It is anticipated that findings will particularly support new, fully funded proposals. The XRH Team and/or  $\mu$ -VIS/BIU staff (see 3. above) should be consulted as soon as possible on costings for such proposals.
12. **Materials, substances, warranties, liabilities and indemnities:** All reasonable care will be taken by the XRH Team during work undertaken, but cannot accept liability for any loss, damage, destruction or disclosure of material(s).

\*Wording for acknowledgement:

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