



The research commercialisation office of the University of Oxford, previously called **Isis Innovation**, has been renamed **Oxford University Innovation**

All documents and other materials will be updated accordingly. In the meantime the remaining content of this Isis Innovation document is still valid.

URLs beginning www.isis-innovation.com/... are automatically redirected to our new domain, www.innovation.ox.ac.uk/...

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Imaging with GlaxoSmithKline

Working through Oxford University Consulting, leading academics from the University of Oxford have been supporting the Global Imaging Unit at GlaxoSmithKline (GSK), providing them with expertise across multiple imaging disciplines. **Dr Josef Walker** introduces the protagonists and highlights the outputs from a successful, on-going collaboration.

Clinical imaging has a key role to play in shaping the way in which new medicines are developed by providing non-invasive methods to understand disease and its response to therapy. As one of the world's leading research-based pharmaceutical companies, GSK is a strategic innovator in clinical imaging and seeks to apply such tools to areas such as cancer, inflammation and neuroscience. GSK has invested significantly in imaging sciences through key collaborations to access the diverse expertise required across methods and areas of application.

Regardless of the disease setting, optimising the MRI methodology used to generate clinical images forms the fundamental foundations for all subsequent analyses. Peter Jezzard is Professor of Neuroimaging at Oxford's Functional Magnetic Resonance Imaging of the Brain (FMRIB) Centre and a world-expert on MRI physics and the development of new imaging techniques for yielding information on the human brain. Through consultancy arrangements, GSK have benefitted from Professor Jezzard's expertise for improving imaging processes for neurological applications.

Once imaging has been performed, generating images and deriving meaningful data from them so that clinical assessments of the patient can be made presents a unique set of challenges. Stephen Smith, Professor of Biomedical Engineering and Associate Director of FMRIB, leads the FMRIB analysis group who research new methodologies for the analysis of functional and structural brain imaging data such as being able to segment brain images into different tissue types. GSK has worked with Professor Smith to improve study designs that involve a functional MRI component and develop strategy across multiple programmes.

Continuing the image analysis theme, GSK's imaging group is also working with Alison Noble, Professor of Biomedical Engineering at Oxford's Institute for Biomedical Engineering. As the Director of the Biomedical Image Analysis Laboratory, Professor Noble leads multi-disciplinary research across varied areas of human health and the development of new imaging techniques including the improvement of ultrasound as a clinical imaging modality. Image analysis tools are vital to ensure imaging methods are translated into quantitative, decision-making tools. The GSK imaging team is consulting with Professor Noble to

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ensure awareness of novel imaging analysis methods, informing their strategy and guiding best practice.

In addition to optimising scanning methods and image analysis techniques, there is great scope in the development and application of novel molecular imaging probes (particularly for PET). In this respect, the GSK imaging team has sought the expertise of Professor Ben Davis from the Department of Chemistry – a world-expert in chemical biology with active research in labelling strategies for smart imaging agents.

"The area of molecular probes for clinical imaging is an exciting field and understanding the fundamental chemistry and biology that underpins them is critical," Professor Davis said.

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At GSK, the potential for applying innovative clinical imaging across multiple disciplines is recognised amongst its priority areas for collaborative research.

"Clinical imaging forms a key part of our strategy to support R&D programmes," said Dr Philip Murphy, Senior Director and Head of GSK's Global Imaging Unit. "We are exploring how to better integrate these approaches to increase success in new drug development, ensuring the delivery of innovative medicine. Access to these expert consultants provides a valuable adjunct to our internal knowledge-base, allowing us to access the right expertise when we need it as well as helping us to build important networks with leading academics for future research projects."

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