PI profile

## Sally Cowley

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|  | **Dr. Sally Cowley**  **Title**: Head of James and Lillian Martin Centre for Stem Cell Research  **Location**: Sir William Dunn School of Pathology  **Department**: Sir William Dunn School of Pathology  **Group**: James  **Webpage**: http://www.wsjlab.com/james-martin-stem-cell-facility/  **Email**: sally.cowley@path.ox.ac.uk |

### GMS themes:

* Functional genomics
* Genomics of disease
* From genes to clinic (target discovery)

### Research Overview

Induced Pluripotent Stem cells (iPSC) derived from patients with genetic disease offers a new, hugely exciting opportunity to model human diseases in vitro. iPSC are particularly important for modelling neurological conditions, where patient material is generally unavailable until after death, and for rare genetic disorders, where patient material is severely limiting. To harness this potential, I have established and am Head of the James and Lillian Martin Centre for Stem Cell Research (within the Sir William Dunn School of Pathology, University of Oxford, and part of the Oxford Stem Cell Institute), with particular interests in the use of iPSC for modelling disease, and expertise in human iPSC derivation, genetic modification, and differentiation to myeloid and neuronal lineages. Key projects include: 1) Generation of a world-class panel of over 200 iPS cell lines from Parkinson’s patients, and CRISPR/Cas9 gene edited lines, as part of a large-scale study within the Oxford Parkinson’s Disease Centre and the EU IMI consortium StemBANCC, to study the early cellular pathology of PD; 2) Pioneering efficient methodologies for differentiation of macrophages and microglia from human iPS cells; 3) Interrogation of the role of the Parkinson’s-associated genes a-synuclein and LRRK2 in macrophages and microglia; 4) Investigation of the role of Alzheimer’s genes in iPS-macrophages/microglia, in collaboration with the Alzheimer’s Research UK Oxford Drug Discovery Institute; 5) Co-investigator in the MRC UKDP Experimental Medicine Dementia Stem Cell Network, a UK-wide network using iPSc for modelling dementia.

Project areas: human Pluripotent Stem Cells; disease modelling; CRISPR; gene editing; neurodegenerative disease; Parkinson’s; Alzheimer’s; immunology; macrophage biology; microglia

### Specific project proposals:

Please contact directly for further information.

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