University of Birmingham

Dr Richard Tuxworth MA PhD

Lecturer in Molecular Genetics

Reproduction, Genes and Development

Contact details

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About

Richard is a lecturer in the School of Clinical and Experimental Medicine. He is a cell biologist with a particular interest in lysosomal function in the nervous system and understanding why lysosomal dysfunction contributes to neurodegenerative disease.

Qualifications

- Associate fellow of the Higher Education Academy 2012
- PhD (University of London), 1999
- MA (Cantab), 1998
- BA (Cantab) in Natural Sciences, 1994

Biography

Richard studied for a PhD in cell biology at the MRC Centre for Molecular Cell Biology at University College London with Robert Insall before moving to the University of Minnesota where he was a post-doctoral fellow with Meg Titus. He returned to the UK to work with Bill Chia and Guy Tear at the MRC Centre for Developmental Neurobiology at King's College London. In October 2012 Richard moved to the University of Birmingham as a Lecturer in Molecular Genetics in October 2012 in the School of Clinical and Experimental Medicine.

Teaching

- **BMedSc (/undergraduate/courses/med/medical-science-2014.aspx)**
- **MBChB (/undergraduate/courses/med/medicine.aspx)**

Postgraduate supervision

Richard is interested in supervising doctoral research students in the following areas:

- The molecular and cellular basis of neurodegeneration
- *Drosophila* models of disease
- Lysosomal storage disorders and other inherited metabolic disorders
- The function of lysosomes in neuronal health and disease
- Stress signalling in neurons

If you are interested in studying any of these subject areas please contact Richard on the contact details above, or for any general doctoral research enquiries, please email **dr@contacts.bham.ac.uk (mailto:dr@contacts.bham.ac.uk)** or call +44 (0)121 414 5005.

- **Full list of available Doctoral Research opportunities (http://www.bham.findaphd.com/?es=y&apl=y&aplt=&show)**

Research

Richard's research is aimed at understanding lysosomal function in the nervous system and how lysosomal dysfunction contributes to neurodegenerative disease. Richard studies a simple inherited form of neurodegeneration affecting children known as Neuronal Ceroid Lipofuscinosis, or Batten disease. Lysosomal dysfunction is a key component of Batten disease and probably a major contributory factor in other neurodegenerative disease such as Parkinson's disease. Richard looks for roles for Batten disease genes in the normal development and function of the nervous system and aims to improve our understanding of neurodegeneration by identifying which cellular events are key to the disease process. Richard principally uses the fruit fly *Drosophila* as a model organism.

Publications

- Povellato, G.*, Tuxworth, R.I.*, Hanger, D.P. and Tear, G. (2013). Modification of the Drosophila model of in vivo Tau toxicity reveals protective phosphorylation by GSK3b. Biology Open. doi: 10.1242/bio.20136692 *Joint first authorship

- Tuxworth R.I., Chen H., Vivancos V., Carvajal N., Huang X., and Tear G. (2011). The Batten disease gene CLN3 is required for the response to oxidative stress. Hum. Mol. Genet. 20, 2037-47.
- Tuxworth R.I., Vivancos V., O'Hare M.B. and Tear G. (2009). Interactions between the juvenile Batten disease gene, CLN3, and the Notch and JNK signalling pathways. Hum. Mol. Genet. 18, 667-78.