Neurological disorders constitute a large and ever increasing share of the global burden of disease. For example, in the US alone around 5.4 million Americans are currently diagnosed with Alzheimer’s disease, the most common cause of irreversible dementia, and this number is predicted to rise to 16 million by 2050. This places a considerable burden on patients, their families, carers and service providers.

The purpose of the meeting, organised by Dr Irene François, Professor Paul Dalby, and Dr Colin Bedford (Members of the RSC Biotechnology Group Committee), was to provide an insight into research and future directions in understanding both normal brain physiology and pathophysiology that will lay the foundations towards discovering and developing improved diagnostics, clinical biomarkers and therapies for a wide range of neurological disorders.

This was the second one day conference in the series covering this very important topic and featured seven internationally renowned speakers: Professors Chris Dobson (Univ. Cambridge), Lennart Bunch (Univ. Copenhagen), Stefan Przyborski (Univ. Durham, recipient of the RSC Rita and John Cornforth Award 2012), Jon Corcoran (King’s College, London), Dr Sarah Rose (King’s College, London) and two speakers from industry Dr Jan Kehler (H.Lundbeck, Denmark) and Dr Jan Passchier, (Imanova Ltd, London).

A full Programme and a List of Poster Presentations are appended hereto.

Professor Chris Dobson opened the meeting with an excellent overview emphasising the importance of early diagnosis and medical intervention in order to enhance patient’s quality of life and to reduce the financial costs to society. He also stated that to date, clinically available pharmaceuticals do not work for most patients as they have proved to be ineffective at either curing or slowing disease progression. Thus it is crucial to identify new and innovative treatment strategies. Although research and development in neuroscience requires the full range of scientific disciplines it was obvious from his and the varied presentations that followed that chemistry was playing a pivotal role in this endeavour.

The symposium attracted 27 delegates including 15 students, 6 of whom presented posters. At the end of each presentation there were lively question and answer sessions and these continued during the tea/coffee and lunch breaks. There were also good interactions at the lunch poster session, which was sponsored by the Chemistry Biology Interface Division (CBID). The CBID also

Dr Irene Francois
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awarded a prize for the best poster. The recipient was Gaurav Harlalka of the University of Exeter. The prize was presented by one of the speakers, Professor Chris Dobson.

Although the number of participants was disappointingly lower than expected it did allow for greater interaction between individuals and for this reason the feedback from both speakers and students was very positive. In fact two students stated that their attendance led them to decide to apply for post-graduate positions in neuroscience.

The RSC Biotechnology Group Committee would like to thank the CBID for their generous sponsorship and the RSC for a Travel Grant.
**Programme**

09.15  **Coffee and registration**

10.20  **Session 1**  Chair: Dr Irene François

10.25  **Professor Christopher Dobson**, Dept. of Chemistry, University of Cambridge, UK  
*New approaches to understanding and preventing neurodegenerative diseases*

11.00  **Professor Ciaran Regan**, Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Ireland  
*Anhedonia, hypothalamic plasticity and the antidepressant actions of captodiamine*

11.35  **Professor Lennart Bunch**, Chemical Neuroscience Group, University of Copenhagen, Denmark  
*Discovery of subtype selective ligands for the glutamatergic neurotransmitter system: towards new therapeutic targets for the treatment of neurological disorders*

12.10  **Lunch and Poster Session**

13.30  **Session 2**  Chair: Dr Colin Bedford

13.35  **Dr. Sarah Rose**, Institute of Pharmaceutical Science, King’s College London, UK  
*A neuroprotective strategy for Parkinson’s disease based on the endogenous protein, osteopontin*

14.10  **Professor Stefan Przyborski**, School of Biological and Biomedical Science, University of Durham, UK  
*Development of new technologies and cell-based assays to investigate neurogenesis in health and disease*

14.45  **Dr Jan Kehler**, Drug Discovery & DMPK, H. Lundbeck A/S, Denmark  
*Discovery and SAR studies on phosphodiesterase 10A inhibitors – a novel approach for targeting Basal ganglia signaling*

15.20  **Tea**

15.45  **Session 3**  Chair: Professor Paul Dalby

15.50  **Professor Jonathan Corcoran**, Neuroscience Drug Discovery Unit, Wolfson Centre For Age-related Diseases, Guy’s Campus, London  
*Orally available retinoic acid receptor agonists for the treatment of CNS disorders*

16.25  **Dr Jan Passchier**, Operations Director, Imanova Ltd, London, UK  
*Using molecular imaging to reduce risk in drug development for neurological disorders*

17.00  **Closing remarks** - Dr Irene François

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Posters

Imaging Copper Trafficking in Alzheimer’s Disease with PET: A Potential Clinical Diagnostic
Erica Andreozzi, Julia Bagunya Torres, Philip Blower
King’s College London: Division of Imaging and Biomedical Sciences

Automated behavioural screening for safety pharmacology and drug discovery: Modelling neurological disorders in zebrafish
Ari Sudwars and Caroline H Brennan,
School of Biological and Chemical Sciences, Queen Mary, University of London, Mile End Road, London E1 4NS

Developmental ethanol exposure in relation to stress and addiction
Matteo Baiamonte, Gavin Vinson and Caroline Brennan.
School of Biological and Chemical Sciences. Queen Mary University of London, E1 4NS

C. elegans and cell-based models of C9ORF72-linked neurodegenerative disease
Sarah Ryan, Freddie Partridge, Janis Callister, Sara Rollinson, Stuart Pickering-Brown and David Sattelle.
Faculty of Medical and Human Sciences, AV Hill Building, University of Manchester, Oxford Road, Manchester, M13 9PT

Mutations in B4GALNT1 (GM2 Synthase) underlie a new disorder of ganglioside biosynthesis
1. Institute of Biomedical and Clinical Science, University of Exeter Medical School, St. Luke’s Campus, Heavitree Road, EX1 2LU, Exeter, Devon, UK; 2. Child and Family Research Institute, The University of British Columbia, 950 West 28th Ave, Vancouver, BC, V5Z 4H4, Canada; 3. Department of Ophthalmology and Vision Science, University of Arizona School of Medicine, Tucson, AZ 85711, Arizona, USA; 4. Department of Pharmacology, University of Oxford, Oxford, OX1 3QT, UK; 5. Wellcome Trust Sanger Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge, CB10 1SA, UK; 6. Medical Genetics Unit, Floor 0, Jenner Wing, St. George’s University of London, Cranmer Terrace, London SW17 0RE, UK; 7. Department of Clinical Neuroscience, Institute of Neurology, University College London, Queen Square, London WC1N 3BG, UK; 8. Ludger Ltd., Culham Science Centre, Oxfordshire, OX14 3EB, UK; 9. Kuwait Medical Genetics Centre, Ghanima Alghanim Bldg; Maternity Hospital, Sulaibikhat, Postal Code: 80901, Kuwait; 10. Windows of Hope Genetic Information Center, Holmes County, Walnut Creek, OH 44065 Ohio, USA; 11. Division of Neurology, The University of British Columbia, UBC Hospital S192 – 2211 Wesbrook Mall, V6T 2B5, Canada

*These authors contributed equally to this work.