

3rd International Genome Dynamics in Neurosciences Conference “DNA Repair and Neurological disease”

The 3rd Genome Dynamics in the Neurosciences meeting was held at the Hilton Metropole in Brighton, UK, from July 18-21, 2010 and was organized by Drs Peter McKinnon (St Jude Children’s Hospital), Keith Caldecott (University of Sussex) and Wilhelm Bohr (National Institute Aging) and was attended by 70 individuals. The objective of the meeting was to highlight key aspects of DNA damage and repair in the developing and mature nervous system and how this functions to prevent neurological disease. Topics addressed covered the basic biology of DNA repair in neurons, synaptic plasticity, the pathogenesis of neurodegenerative disorders, nuclear and mitochondrial genome stability, stem cell biology, and brain development. This meeting integrated basic processes of DNA damage signaling and repair and clinical aspects of neurological and neurodegenerative disease. The program brought together leading scientists with primary interests in DNA damage signaling together with those working in specific related neurodegenerative disease areas. In many cases attendees had not been together at the same conference.

The Meeting opened on Sunday evening (July 18th) with welcoming and introductory remarks from Dr’s. Caldecott and McKinnon followed by keynote addresses from renowned scientists, Profs Jan Hoeijmakers (Erasmus University, Holland) and Malcolm Taylor (University of Birmingham, UK). Sessions ran from Monday morning for 2 full days (platform and poster), and finished after a morning session on Wednesday. Lectures by invited speakers occur during the day with breaks for coffee and lunch. The conference concluded after lunch on Wednesday. Each day was divided into focus sessions that covered DNA repair pathways that maintain brain development and specific sessions on spinocerebellar ataxias, triplet expansion diseases, neural cell fate, mitochondria, and ageing in the brain. There were also poster sessions Monday and Tuesday evening that further facilitated discussions amongst attendees.

This conference successfully promoted interactions between the communities of investigators with interests in basic research on brain aging, DNA repair nucleic acids, and research on specific neurodegenerative disorders. This was a main motivation for establishing this unique focused “Genome Dynamics in the Neurosciences” conference series, that assembled a dedicated group of DNA repair biologists and neuroscientists that otherwise would not have a common forum for building collaborations that consider the impact of DNA transactions and neural homeostasis.

We are currently editing an issue of the Elsevier journal, “Mechanisms of Aging and development” (editor-in-chief is Dr. Wilhelm Bohr) that will be a special issue containing contributions from topics covered at the meeting; the expected publication date for this special issue is June 2011. Based on the success of this meeting a 4th International conference is being organized by a Norwegian group, with an anticipated date of May, 2012.