

Neuroscience in Oxford: Four Centuries of Discovery

Zoltán Molnár, Professor of Developmental Neuroscience



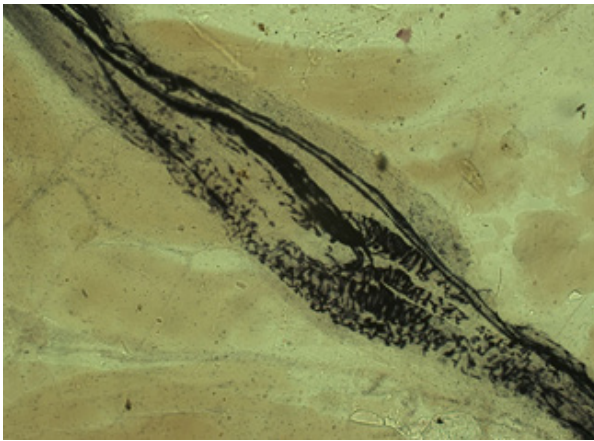
Thursday 19 March 2015, 19.00–20.00

Museum of the History of Science (Basement Gallery),
Broad Street, Oxford OX1 3AZ

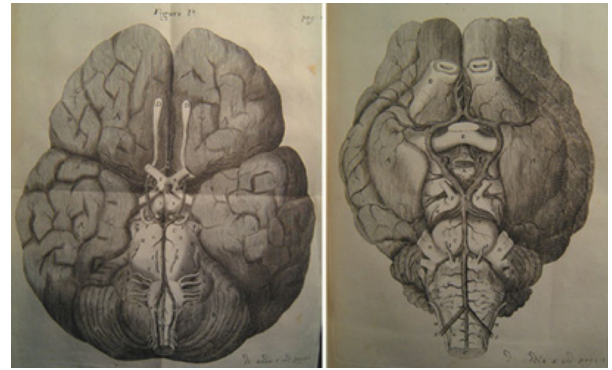
The University of Oxford is leading the way in functional magnetic resonance imaging, optogenetics, psychiatry, and study of the developing and ageing brain. Learn about the characters and developments that have shaped over 400 years of innovation and how these discoveries are still relevant today.

Sir Charles Sherrington (1857–1952), a pioneer in spinal cord and motor control research, coined the term 'synapse' for the structure that permits a nerve cell to pass an electrical or chemical signal to another cell. His lifetime of discoveries shall be reviewed through examining his original specimens from his histological box of slides that has been recently re-discovered. The image below shows a silver stained muscle spindle from this collection.

Source: *Nature Reviews Neuroscience* 5, 329–335, 2004; *Nature Reviews Neuroscience* 11, 429–436, 2010; Oxford Sparks: You've Got a Nerve (www.oxfordsparks.net/video/youve-got-nerve).



Thomas Willis (1621–1675) revolutionised the anatomical description of the brain and is credited with coining the word 'neurology'. His most influential work, *The Anatomy of the Brain*, published in 1664 and translated into English in 1681, remained the most significant contribution to neuroanatomy for almost 200 years. The image below, reproduced with the permission of the library of St John's College, Oxford, shows the base of a human brain (left) and a sheep brain (right). The spectacular differences between the cerebral cortex of humans and other animals led Willis to argue that 'the cerebrum is the primary seat of the rational soul in man, and of the sensitive soul in animals. It is the source of movements and ideas.'



Professor Zoltan Molnar works in the Department of Physiology, Anatomy and Genetics. He is a world-leading expert in brain development. His aim is to understand the brain and its devastating diseases. He is interested in the interactions between the environment and the unfolding genetic program of brain development, with special attention to the cerebral cortex.

Professor Molnár has a strong interest in the history of neuroscience. He is member of the Federation of European Neuroscience Societies History Committee, founding member (with Dr Richard Boyd) the Oxford History of Medical Sciences Seminar Series, and with Dr Damion Young he started the History of Medical Sciences website where the original objects, historic models, histological sections and correspondence can be viewed: <https://history.medsci.ox.ac.uk>.