

Neuroscience

- Biology and Pathology of the Eye

- Invertebrate Visual Systems

■ Biology and Pathology of the Neuromuscular Junction

- Protein Abnormalities Underlying Muscle Disease

- Mitochondrial Abnormalities of Nerve and Muscle

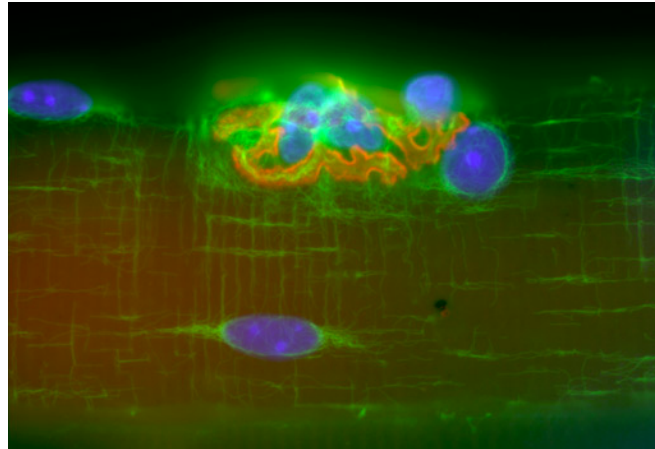
- Current Projects

Psychiatry

Mitochondrial Research Group

 [printable version](#)

Neuromuscular Junction Research



The work of the NMJ group is concerned with the structure, function, molecular organisation, development and pathology of the vertebrate neuromuscular junction. An important feature of our earlier work was the investigation of the hypothesis that the postsynaptic folds and the voltage-gated sodium channels concentrated in them, function as amplifiers of the effect of transmitter action. Currently, in collaboration with [Prof. RN Lightowlers](#), we are investigating the cellular and molecular mechanisms that account for the localisation of those sodium channels in the postsynaptic membrane of the muscle fibre. In a new project, we are studying the recovery of the NMJ from botulinum toxin (BoTx), particularly following repeated exposure, in order to evaluate the long term effects of BoTx in clinical use to control spasticity.

Current Personnel

- [Prof. Clarke R. Slater](#)
- [Dr. Suad Awad](#) - Postdoctoral Research Associate
- [Dr. Alexandra Buckel](#) - Postdoctoral Research Associate
- [Dr. Ki Pang](#) - Research Associate
- [Mr. Leo Gurney](#) - B.Med.Sci student
- [Ms. Carol Young](#) - Biomedical Scientist

Current Research Projects

- [Distribution and abundance of mRNA encoding voltage-gated sodium channels at the NMJ](#)
- [Postsynaptic cytoskeletal proteins at the NMJ and their role in localisation of voltage-gated sodium channels](#)
- [BoTX and its effects on NMJs in patients with cerebral palsy](#)

Previous Research Projects

- [Factors determining the efficacy of neuromuscular transmission](#)
- [Cytoskeletal proteins at the NMJ](#)
- [Distribution and abundance of mRNA encoding utrophin in vertebrate muscle](#)
- [Factors underlying impaired neuromuscular transmission in congenital myasthenic syndromes in humans](#)

last updated 17 October 2002
webmaster robin.horton@ncl.ac.uk

[Undergraduate](#) | [Postgraduate](#) | [Research](#) | [Staff](#) | [About](#) | [Services to Industry](#) | [Teaching](#)

© 2005 [School of Neurology, Neurobiology & Psychiatry, Faculty of Medical Sciences, University of Newcastle.](#)

All rights reserved

[back to top](#)